



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 725-2018

**HARROW STREET COMBINED SEWER MODIFICATIONS COCKBURN AND
CALROSSIE COMBINED SEWER RELIEF WORKS (CONTRACT 5A)**

Note to Bidders: Please be aware of revisions to B15.4

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	4
Form G1: Bid Bond and Agreement to Bond	6
Form G2: Irrevocable Standby Letter of Credit and Undertaking	8

PART B - BIDDING PROCEDURES

B1. Contract Title	1
B2. Submission Deadline	1
B3. Site Investigation	1
B4. Enquiries	1
B5. Confidentiality	1
B6. Addenda	2
B7. Substitutes	2
B8. Bid Components	3
B9. Bid	3
B10. Prices	4
B11. Disclosure	4
B12. Conflict of Interest and Good Faith	5
B13. Qualification	6
B14. Bid Security	7
B15. Opening of Bids and Release of Information	7
B16. Irrevocable Bid	8
B17. Withdrawal of Bids	8
B18. Evaluation of Bids	9
B19. Award of Contract	9

PART C - GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Definitions	1
D4. Contract Administrator	1
D5. Contractor's Supervisor	1
D6. Ownership of Information, Confidentiality and Non Disclosure	1
D7. Notices	2
D8. Furnishing of Documents	2

Submissions

D9. Authority to Carry on Business	2
D10. Safe Work Plan	2
D11. Insurance	3
D12. Performance Security	3
D13. Subcontractor List	4
D14. Detailed Work Schedule	4
D15. Site Development Plan	4

Schedule of Work

D16. Expedited Shop Drawings And Utility LoCates	5
D17. Commencement	5
D18. Sequence of Work	5
D19. Critical Stages	6
D20. Substantial Performance	6
D21. Total Performance	6

D22. Liquidated Damages	6
Control of Work	
D23. Job Meetings	7
D24. Coordination of Work with Others	7
D25. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	7
D26. The Workplace Safety and Health Act (Manitoba) – Qualifications	7
D27. Pedestrian Safety	7
D28. Traffic Control	7
D29. Water Use	8
D30. Work Underneath and in the Vicinity of Hydro Power Infrastructure	8
D31. Work in Proximity to Large Natural Gas Mains	8
D32. Confined Space Entry	8
D33. Payment	8
Warranty	
D34. Warranty	9
Form H1: Performance Bond	10
Form H2: Irrevocable Standby Letter of Credit	12
Form J: Subcontractor List	14

PART E - SPECIFICATIONS

General

E1. Applicable Specifications and Drawings	1
E2. Geotechnical Investigation Report	2

General Requirements

E3. Office Facilities	2
E4. Shop Drawings	3
E5. Environmental Protection Plan	5
E6. Site Development and Restoration	8
E7. Truck Weight Limits	10
E8. Traffic Management	10
E9. Exploration of Existing Utilities and Services	11
E10. Support or Temporary Relocation of Existing Pipes and Utilities	12
E11. Protection of Existing Trees	12
E12. Maintaining Flow in Existing Sewer	13
E13. Excavation, Bedding and Backfill	15
E14. Depressurization for Construction of Structures and Shafts	16
E15. Supply and Installation of Temporary Shoring	17
E16. Modification of 1950 mm Combined Sewer	18
E17. Precast Chamber Construction	20
E18. Cold Weather Requirements	21
E19. Temporary Surface Restoration	22
E20. Permanent Restoration	23
E21. Tree Planting	24
E22. Full Depth Partial Slab Patches	25
E23. High Flow Through Construction Site Clean Up	25
E24. Change in Contract Conditions	25
E25. Provisional Items	26

PART F - SECURITY CLEARANCE

F1. Security Clearance	1
------------------------	---

APPENDICES

APPENDIX A – Geotechnical Data Report (GDR)	
APPENDIX B – Geotechnical Baseline Report (GBR)	
APPENDIX C – Proposed Traffic Management Plan	

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

- B1.1 HARROW STREET COMBINED SEWER MODIFICATIONS COCKBURN AND CALROSSIE COMBINED SEWER RELIEF WORKS (CONTRACT 5A)

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, August 22, 2018.
- 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 Bid Opportunity, 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 Bid Opportunity 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 Bid Opportunity 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 Bid Opportunity 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 Bid Opportunity, 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/matmgmt/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.

B7. SUBSTITUTES

- B7.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- 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;
 - (c) Bid Security
 - (i) Form G1: Bid Bond and Agreement to Bond, or
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
a certified cheque or draft;
- 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 Bid Opportunity 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 Bid Opportunity 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 Bid Opportunity 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.

B10.2 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) Inland

- (i) Provided opinion of constructability.
- (b) Pre-con
 - (i) Provided general drawing details and opinion of constructability.

B12. CONFLICT OF INTEREST AND GOOD FAITH

B12.1 Bidders, by responding to this Bid Opportunity, 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 Bid Opportunity 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 Bid Opportunity process) of strategic and/or material relevance to the Bid Opportunity 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 Bid Opportunity 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 <http://www.winnipeg.ca/matmgt/debar.stm>

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™) or
 - (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) 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); or
- (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
- (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.

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 performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

B14.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B14.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B14.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

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 Bid Opportunity.

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.

- B15.1.2 Bids determined by the Manager of Materials, or his/her designate, to not include the bid security specified in B14 will not be read out.
- 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/>
- 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/>
- 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 performance security 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 Bid Opportunity, 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 responsible and qualified.
- B18.4 Further to B18.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B18.4.1 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 responsible and 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 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B18.
- B19.3.1 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 2006 12 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 Bid Opportunity 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 modification of the 1950 combined sewer located at the intersection of Harrow Street and Taylor Avenue. This will include construction of the temporary shaft and shoring system, temporary flow control, traffic management, supply and installation of a precast sewer modification, and site restoration.

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) **“Controlled Low Strength Material (CLSM)”** means cement stabilized fill, as per CW 2160.
- (b) **“Tunnel Boring Machine (TBM)”** means a machine used to excavate tunnels with a circular cross section through a variety of soil and rock strata.

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is KGS Group, represented by:

Ray Offman, M.Sc., (CE), P.Eng.
Infrastructure Engineer/ Project Manager

Telephone No. 204-896-1209

Email Address ROffman@ksgsgroup.com

D4.2 At the pre-construction meeting, Ray Offman 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 D4.1.

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 five (5) complete sets of the Bid Opportunity. If the Contractor requires additional sets of the Bid Opportunity, 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>

D11. INSURANCE

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

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

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.

D12. PERFORMANCE SECURITY

D12.1 The Contractor shall provide and maintain performance security 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; or
- (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
- (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.

D12.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D12.2 If the bid security provided in his/her Bid was not a certified cheque or draft pursuant to B14.1(c), the Contractor shall provide the City Solicitor with the required performance security 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.

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 the General Conditions for the return of the executed Contract.

D14. DETAILED WORK SCHEDULE

D14.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least ten (10) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.

D14.2 The detailed work schedule shall consist of the following:

- (a) A critical path method (CPM) schedule for the work; and
- (b) A Gantt chart for the Work based on the CPM schedule; as acceptable by the Contract Administrator.

D14.3 Further to D14.2(a), the CPM schedule shall clearly identify start and completion dates of the following Work items:

- (a) Commencement Date
- (b) Mobilization
- (c) Expedited Shop Drawings
- (d) Maintaining Flow in Existing Sewer
- (e) Shaft Construction
- (f) Precast Delivery to Site
- (g) 1950 Modifications
- (h) Substantial Performance
- (i) Site Restoration
- (j) Total Performance
- (k) Additional Critical Dates

D14.4 Timelines and staging for traffic management identified in E8 as required to complete the Work should be included in the schedule.

D14.5 Further to D14.2(b), the Gantt chart shall, on a weekly basis, show the time required to carry out the Work of each trade or specification division. Time shall be on the horizontal axis and the type of trade shall be on the vertical axis.

D14.6 The Contractor shall update the schedule to the Contract Administrator prior to each weekly construction site meeting for review and discussion at the meetings.

D15. SITE DEVELOPMENT PLAN

D15.1 The Contractor shall provide the Contract Administrator with a Site Development Plan at least ten (10) Business Days prior to the commencement of any Work on the Site.

D15.2 The Site Development Plan shall at minimum include:

- (a) Proposed layout of construction site during construction.
- (b) Office facility locations for Contract Administrator and Contractor.
- (c) Temporary vehicle access/egress locations.
- (d) Employee parking locations.

- (e) Any proposed modifications to the traffic management plan.

SCHEDULE OF WORK

D16. EXPEDITED SHOP DRAWINGS AND UTILITY LOCATES

- D16.1 Further to E4, in order to expedite Shop Drawings with critical timeliness, the lowest responsive Bidder, as outlined in B18, will be permitted, after receiving written approval from the Contract Administrator, to arrange for the preparation of Shop Drawings for, at minimum, the following items with critical timelines:
- (a) Precast concrete sections as indicated on drawings
- D16.2 In order to expedite utility locates on sites with critical timeliness, the lowest responsive Bidder, as outlined in B18, will be permitted, after receiving written approval from the Contract Administrator, to arrange for utility locates for the following sites with critical timelines:
- (a) Harrow Street Site
- D16.3 If Award is made to the lowest responsive Bidder, no payment for the booking of utility locates will be made. If no Contract is awarded, then the City of Winnipeg will pay the requested Bidder up to a maximum of five hundred (\$500.00) for each of the requested submissions as per D16.1 for the preparation and delivery of Shop Drawings and as per D16.2 for the booking of utility locates. Delivery of the Shop Drawings to the City, booking of Utility Locates, and payment of the above mentioned amounts will constitute full and final consideration of each party to the other, and neither party will have any further liability to the other with respect to this Bid Opportunity.

D17. COMMENCEMENT

- D17.1 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.
- D17.2 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 performance security specified in D12;
 - (vi) the Subcontractor list specified in D13;
 - (vii) the Detailed Work Schedule specified in D14; and
 - (viii) the Site Development Plan 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.
- D17.3 The City intends to award this Contract by September 12, 2018.
- (a) If the actual date of award is later than the intended date, the dates specified for Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D18. SEQUENCE OF WORK

- D18.1 The Work on the combined sewer may not commence until dry weather flow occurs in the combined sewer. Dry weather flow is anticipated to occur no sooner than November 1, 2018

D19. CRITICAL STAGES

D19.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

- (a) **Critical Date 1 – November 1, 2018.** Complete the temporary shoring and bypass arrangement.

D20. SUBSTANTIAL PERFORMANCE

D20.1 The Contractor shall achieve Substantial Performance by February 1, 2019.

D20.2 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.

D20.3 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.

D21. TOTAL PERFORMANCE

D21.1 The Contractor shall achieve Total Performance by June 14, 2019.

D21.2 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.

D21.3 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.

D22. LIQUIDATED DAMAGES

D22.1 If the Contractor fails to achieve, Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:

- (a) Critical Date 1 – one thousand dollars (\$1000);
- (b) Substantial Performance - two thousand five hundred dollars (\$2500);
- (c) Total Performance - one thousand dollars (\$1000).

D22.2 The amounts specified for liquidated damages in D22.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve, Critical Stages, Substantial Performance or Total Performance by the days fixed herein for same.

D22.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D23. JOB MEETINGS

- D23.1 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.
- D23.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

D24. COORDINATION OF WORK WITH OTHERS

- D24.1 Work by others on or near the Site will include but not necessarily be limited to:
- (a) City of Winnipeg Traffic Signals
 - (i) Temporary relocation of signals at the intersection of Harrow Street and Taylor Avenue and other locations as required.
 - (b) City of Winnipeg Traffic Services
 - (i) Erection and maintenance of temporary traffic control.

D25. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D25.1 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).

D26. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

- D26.1 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.

D27. PEDESTRIAN SAFETY

- D27.1 Further to clause 3.6 of CW 1130:
- (a) the Contractor shall maintain safe pedestrian crossings at intersections at all times.
 - (b) The Contractor shall maintain a closed Site around all work elements to restrict pedestrian and vehicular access. Temporary fencing or an alternative as approved by the Contract Administrator shall be installed at all open excavations, trench cages, cans and shafts for the project duration in accordance with Provincial requirements.
 - (c) The Contractor shall be responsible for maintaining the fencing in a proper working condition at all times. Pedestrian Safety requirements shall be incidental to Site Development and Restoration.

D28. TRAFFIC CONTROL

- D28.1 Further to clause 3.7 of CW 1130:
- (a) The Contractor shall make arrangements with City of Winnipeg Traffic Services to place temporary regulatory signs. The Contractor shall bear all costs associated with the placement of temporary traffic control devices required to complete the Work.

- (b) The Contractor shall not interfere with traffic signals. Any modification of traffic signals shall be done by City of Winnipeg Traffic Signals.
 - (i) Advance notice is required to facilitate traffic signal modifications.
- (c) The Contractor shall make arrangements with Winnipeg Transit for Work that impacts Transit routes or stops.
- (d) The City of Winnipeg Manual of Temporary Traffic Control on City Streets is available online at:
 - (i) <http://winnipeg.ca/publicworks/trafficControl/manualTempTrafficControl.stm>

D28.2 Additional traffic management requirements are outlined in E8.

D29. WATER USE

D29.1 The Contractor is responsible for obtaining City permits and paying for any charges associated with temporary water meters and water use.

D30. WORK UNDERNEATH AND IN THE VICINITY OF HYDRO POWER INFRASTRUCTURE

D30.1 The Contractor is responsible for notifying Manitoba Hydro in advance of Work in the vicinity and underneath Hydro infrastructure (e.g. overhead transmission lines). The Contractor shall follow all Manitoba Hydro requirements for safe working distances and clearances from Hydro infrastructure including but not limited to overhead electrical lines.

D30.2 Manitoba Hydro requires a minimum vertical clearance from their overhead electrical lines as follows:

- (a) Minimum 10 feet from overhead distribution lines,
- (b) Minimum 15 feet from overhead transmission lines.

D31. WORK IN PROXIMITY TO LARGE NATURAL GAS MAINS

D31.1 The Contractor should be familiar with and comply with the requirements of the latest revision of Manitoba Hydro's "Safe Excavation & Safety Watch Guidelines". This document is available at: https://www.hydro.mb.ca/safety/pdfs/safe_excavation_safety_watch_guidelines.pdf

D31.2 Work precautions and procedures required for working near gas mains will be incidental to the Contract.

D32. CONFINED SPACE ENTRY

D32.1 The Contractor's attention is drawn to the Province of Manitoba Workplace Safety and Health Act ("the Act"), and the Regulations and Guidelines there-under pertaining to Confined Entry Work, and in particular the requirements for conducting hazard/risk assessment and providing personal protective equipment (PPE).

D32.2 The Contractor shall assist and provide Supplied Air Breathing Apparatus conforming to the requirements of the Act, Regulations and Guidelines for the use of the Contract Administrator where confined entry is required to allow for inspection of the Work. Measurement and Payment

D33. PAYMENT

D33.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D34. WARRANTY

D34.1 Warranty is as stated in C13.

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

BID OPPORTUNITY NO. 725-2018

HARROW STREET COMBINED SEWER MODIFICATIONS COCKBURN AND CALROSSIE COMBINED SEWER RELIEF WORKS (CONTRACT 5A)

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: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)
(See D12)**

(Date)

The City of Winnipeg
Legal Services Department
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 725-2018

HARROW STREET COMBINED SEWER MODIFICATIONS COCKBURN AND CALROSSIE
COMBINED SEWER RELIEF WORKS (CONTRACT 5A)

Pursuant to the request of and for the account of our customer,

(Name of Contractor)

(Address of Contractor)

WE HEREBY ESTABLISH in your favour our irrevocable Standby Letter of Credit for a sum not exceeding in the aggregate

_____ Canadian dollars.

This Standby Letter of Credit may be drawn on by you at any time and from time to time upon written demand for payment made upon us by you. It is understood that we are obligated under this Standby Letter of Credit for the payment of monies only and we hereby agree that we shall honour your demand for payment without inquiring whether you have a right as between yourself and our customer to make such demand and without recognizing any claim of our customer or objection by the customer to payment by us.

The amount of this Standby Letter of Credit may be reduced from time to time only by amounts drawn upon it by you or by formal notice in writing given to us by you if you desire such reduction or are willing that it be made.

Partial drawings are permitted.

We engage with you that all demands for payment made within the terms and currency of this Standby Letter of Credit will be duly honoured if presented to us at:

(Address)

and we confirm and hereby undertake to ensure that all demands for payment will be duly honoured by us.

All demands for payment shall specifically state that they are drawn under this Standby Letter of Credit.

Subject to the condition hereinafter set forth, this Standby Letter of Credit will expire on

(Date)

It is a condition of this Standby Letter of Credit that it shall be deemed to be automatically extended from year to year without amendment from the present or any future expiry date, unless at least 30 days prior to the present or any future expiry date, we notify you in writing that we elect not to consider this Standby Letter of Credit to be renewable for any additional period.

This Standby Letter of Credit may not be revoked or amended without your prior written approval.

This credit is subject to the Uniform Customs and Practice for Documentary Credit (2007 Revision), International Chamber of Commerce Publication Number 600.

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

E1.1 These Specifications shall apply to the Work.

E1.2 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.

E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgmt/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 Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.

E1.3 The following are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
LD-8589	Cover Sheet
LD-8590	Taylor Avenue – Harrow Street Intersection
LD-8591	Harrow Street – Taylor Avenue Intersection
LD-8592	Structural – Modification of Existing 1950 Sewer Sheet 1 of 2
LD-8593	Structural – Modification of Existing 1950 Sewer Sheet 2 of 2

E1.4 Background and Project Information

- (a) The Cockburn and Calrossie Combined Sewer Relief Works project is part of the City's Basement Flooding Relief (BFR) program which, upon completion of a series of construction contracts, will provide complete sewer separation to the western part of the Cockburn combined sewer district.
- (b) Contract 5, Bid Opportunity No 866-2017B, for construction of an 1800-2400 mm diameter Trunk Sewer 1.2 km in length along Taylor Avenue by Tunnel Boring Machine (TBM) method of construction, closed in March 2018 but it was not awarded. The geotechnical reports from Bid Opp No. 866-2017B are included as information.
- (c) Contract 5 included modification to an existing 1950 mm combined sewer on Harrow, that must be modified before the Taylor trunk can be constructed. The Harrow combined sewer is an active combined sewer and must remain in service. The modification must be undertaken during the cold winter months to avoid runoff from rainfall and snowmelt from entering the sewer during the construction period.
- (d) The scope of work for Contract 5A is for modification to the Harrow Combined sewer as a standalone contract in advance of retendering the Taylor trunk sewer.
- (e) Bidders for Contract 5A are to be aware:
 - (i) The Work will take place along Taylor Avenue, which is classified as a Regional Street by the City. Traffic plans must be developed to minimize traffic disruption on Taylor Avenue, and the plan must be followed throughout the duration of construction.
 - (ii) Any Work impacting traffic lanes or flow are to be planned and coordinated to minimize the duration of detours and interruptions.
 - (iii) The work must be completed during the dry weather flow period between November 1, 2018 and March 1, 2019. Temporary pumping or other approved methods of bypassing dry weather flow through the construction site will be required on a continuous basis. Blockage of the flow path beyond that shown on the drawings and specification will not be permitted.
 - (iv) Access to any temporary pumps must be available at all times to permit servicing.

- (v) Inclement weather that causes level to rise above the weirs must be allowed to flow through the construction site, to avoid upstream basement flooding.
- (vi) The future 2400 mm sewer crossing above the Harrow modification is to be installed by others using a TBM method of construction. Final details of the approach have not been determined, and therefore a conservative loading allowance must be included. Based on use of an EPB TBM for installation of a segmental sewer, the TBM sections have been assumed to weight 39,000 kg for the cutter head 32,000 kg for the midsection and 25,000 kg for the erector section. As the TBM crosses over the Harrow modification, the maximum load from the TBM on the precast structure at any time is expected to be 50,000 kg.
- (vii) Temporary weirs, pipe bracing and all other flow impediments must be completely removed by February 1, 2019.
- (viii) Manholes are located upstream and downstream from the work site. The bidder should note that the upstream manhole is in close proximity, while the downstream manhole is 72 m downstream. Bidder may consider temporary access to the 1950 sewer on the downstream side through a temporary hatch in the precast structure.
- (ix) The Harrow 1950 mm combined sewer contains sewer gases and requires appropriate health and safety measures.

E2. GEOTECHNICAL INVESTIGATION REPORT

- E2.1 A Geotechnical Data Report (GDR) and Geotechnical Baseline Report (GBR) was prepared as part of Contract 5, Bid Opportunity No 866-2017B. It is included in this contract for information purposes.
- E2.2 Geotechnical Data Report (GDR)
 - (a) This report includes geotechnical data collected at the project site and summary of anticipated subsurface conditions along the Contract 5 tunnel alignment. A copy of the GDR is included in Appendix A.
- E2.3 Geotechnical Baseline Report (GBR)
 - (a) The GBR summarizes the geotechnical condition observed along the Contract 5 tunnel alignment. A copy of the GBR is included in Appendix B.

GENERAL REQUIREMENTS

E3. OFFICE FACILITIES

- E3.1 The Contractor shall supply a Site trailer with available office space for use by the Contract Administrator.
- E3.2 The office facility shall meet the following requirements:
 - (a) The field office shall be for the exclusive use of the Contract Administrator and City staff and will be used for site meetings.
 - (b) The field office shall be located near the Site of Work.
 - (c) The building shall have a minimum floor area of 25 square metres, minimum of two windows and a door entrance with suitable lock.
 - (d) The building shall be suitable for all-weather use. It shall be equipped with an electric heater and air conditioner capable of maintaining a temperature range between 16 °C and 25 °C.
 - (e) The building shall be supplied with adequate lighting and have a minimum of three wall outlets with 120 Volt power supply.
 - (f) The building shall be furnished with two desks, two meeting tables, one drafting table, one filing cabinet and a minimum of 12 chairs.

- (g) A portable toilet shall be located near the field office building. The toilet shall have a locking door.
- (h) The field office shall be cleaned on a weekly basis, prior to the Site Meetings to the satisfaction of the Contract Administrator.

E3.3 The office facilities will be provided from the date of the commencement of the Work to the date of Substantial Performance.

E3.4 Measurement and Payment

- (a) The Contractor shall be responsible for all installation, transportation and removal costs, all operating costs, provision of furnishings and equipment, cleaning and the general maintenance of the office facilities.
- (b) Payment for the office facility is included in Site Development and Restoration.

E4. SHOP DRAWINGS

E4.1 Description

E4.1.1 This Specification shall revise, amend and supplement the requirements of CW 1100.

- (a) 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.
- (b) The Contractor shall submit specified shop drawings to the Contract Administrator for review. All submissions must be in metric units. Where data is in imperial units, the correct metric equivalent shall also be shown on all submissions for Engineering review.

E4.1.2 Shop Drawings

- (a) Original drawings are to be prepared by Contractor, Subcontractor, Supplier, Distributor, or Manufacturer, which illustrate appropriate portion of Work; showing fabrication, layout, setting or erection details as specified in appropriate sections.
- (b) Shop drawings for the following structural components shall bear the seal of a Registered Professional Engineer in the Province of Manitoba.
 - (i) Shoring
 - (ii) Reinforcing steel
 - (iii) Temporary supports for clay tiles
 - (iv) Pre-cast concrete structures
- (c) Additional submittal requirements for each component of Work may be listed within the relevant specification section.

E4.1.3 Contractor's Responsibility

- (a) Review shop drawings, product data and samples prior to submission and stamp and sign drawings indicating conformance to the Contract requirements.
- (b) Verify:
 - (i) Field Measurements
 - (ii) Field Construction Criteria
 - (iii) Catalogue numbers and similar data
- (c) Coordinate each submission with requirements of Work and Contract Documents. Individual shop drawings will not be reviewed until all related drawings are available.
- (d) Notify Contract Administrator, in writing at time of submission, of deviations from requirements of Contract Documents.

- (e) Responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator's review of submission, unless Contract Administrator gives written acceptance of specified deviations.
- (f) Responsibility for errors and omissions in submission is not relieved by Contract Administrator's review of submittals.
- (g) The Contractor shall make any corrections required by the Contract Administrator and shall resubmit the required number of corrected copies of Shop Drawings. The Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections requested by the Contract Administrator on previous submission.
- (h) After Contract Administrator's review and return of copies, distribute copies to subtrades as appropriate.
- (i) 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.

E4.1.4 Submission Requirements

- (a) Schedule submissions at least 10 Calendar Days before dates reviewed submissions will be needed, and allow for a 10 Calendar Day period for review by the Contract Administrator of each individual submission and re-submission, unless noted otherwise in the Contract Documents.
- (b) Submit one (1) digital copy (PDF) of shop drawings.
- (c) Accompany submissions with transmittal letter, containing:
 - (i) Date
 - (ii) Project title and Bid Opportunity number
 - (iii) Contractor's name and address
 - (iv) Number of each shop drawing, product data and sample submitted
 - (v) Specification Section, Title, Number and Clause
 - (vi) Drawing Number and Detail/Section Number
 - (vii) Other pertinent data
- (d) Submissions shall include:
 - (i) Date and revision dates.
 - (ii) Project title and Bid Opportunity number.
 - (iii) Name of:
 - ◆ Contractor
 - ◆ Subcontractor
 - ◆ Supplier
 - ◆ Manufacturer
 - ◆ Separate detailer when pertinent
 - (iv) Identification of product of material.
 - (v) Relation to adjacent structure or materials.
 - (vi) Field dimensions, clearly identified as such.
 - (vii) Specification section name, number and clause number or drawing number and detail/section number.
 - (viii) Applicable standards, such as CSA or CGSB numbers.
 - (ix) Contractor's stamp, initialed or signed, certifying review of submission, verification of field measurements and compliance with Contract Documents.

E4.1.5 Other Considerations

- (a) Fabrication, erection, installation or commissioning may require modifications to equipment or systems to conform to the design intent. Revise pertinent shop drawings and resubmit.
- (b) 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.
- (c) Incomplete shop drawing information will be considered as stipulated deductions for the purposes of progress payment certificates.
- (d) No delay or cost claims will be allowed that arise because of delays in submissions, re-submissions and review of shop drawings.

E4.2 Measurements and Payment

- E4.2.1 Preparation and submittal of Shop Drawings shall be considered incidental to the Works of this Contract and no measurement or payment will be made for this item.

E5. ENVIRONMENTAL PROTECTION PLAN

- E5.1 The Contractor shall plan and implement the Work of this Contract strictly in accordance with the requirements of the environmental protection measures as herein specified.

- E5.2 The Contractor is advised that at least the following Acts, Regulations, and By-laws apply to the Work:

(a) Federal

- (i) Canadian Environmental Protection Act (CEPA) c.16
- (ii) Canadian Environmental Assessment Act (CEAA) c.37
- (iii) Transportation of Dangerous Goods Act and Regulations c.34

(b) Provincial

- (i) The Dangerous Goods Handling and Transportation Act D12
- (ii) The Endangered Species Act E111
- (iii) The Environment Act c.E125
- (iv) The Fire Prevention Act F80
- (v) The Manitoba Heritage Resources Act H39.1
- (vi) The Manitoba Noxious Weeds Act N110
- (vii) The Manitoba Nuisance Act N120
- (viii) The Public Health Act c.P210
- (ix) The Workplace Safety and Health Act W120
- (x) Other current applicable associated regulations.

(c) Municipal

- (i) The City of Winnipeg By-law no. 1/2008
- (ii) Other applicable Acts, Regulations and By-laws.

- E5.3 The Contractor is advised that the following environmental protection measures apply to the Work.

(a) Materials Handling and Storage

- (i) Construction materials and debris shall be prevented from entering drainage pipes or channels.
- (ii) Construction materials and debris shall also be prevented from accumulating on local roadways and sidewalks when tracked out of the Site by trucks hauling excavated materials.
- (iii) The Contractor shall provide on-Site measures to mitigate the tracking of sediment off-Site and therefore reduce the amount of street cleaning required. These

measures may take the form of a truck wheel wash (automated or manually operated) or other measures as approved by the Contract Administrator.

(b) Fuel Handling and Storage

- (i) The Contractor shall obtain all necessary permits from Manitoba Conservation for the handling and storage of fuel products and shall provide copies to the Contract Administrator.
- (ii) All fuel handling and storage facilities shall comply with The Dangerous Goods and Transportation Act Storage and Handling of Petroleum Products Regulation and any local land use permits.
- (iii) Fuels, lubricants, and other potentially hazardous materials as defined in The Dangerous Goods and Transportation Act shall be stored and handled within the approved storage areas.
- (iv) The Contractor shall ensure that all fuel storage containers are inspected daily for leaks and spillage.
- (v) Products transferred from the fuel storage area(s) to specific Work Sites shall not exceed the daily usage requirement.
- (vi) When servicing requires the drainage or pumping of fuels, lubricating oils or other fluids from equipment, a groundsheet of suitable material (such as HDPE) and size shall be spread on the ground to catch the fluid in the event of a leak or spill.
- (vii) Refuelling of mobile equipment and vehicles shall take place at least 100 metres from a watercourse.
- (viii) The area around storage Sites and fuel lines shall be distinctly marked and kept clear of snow and debris to allow for routine inspection and leak detection.
- (ix) A sufficient supply of materials, such as absorbent material and plastic oil booms to clean up minor spills shall be stores nearby on-site. The Contractor shall ensure that additional material can be made available on short notice.

(c) Waste Handling and Disposal

- (i) The construction area shall be kept clean and orderly at all times during and at completion of construction.
- (ii) At no time during construction shall personal or construction waste be permitted to accumulate for more than one day at any location on the construction Site, other than at a dedicated storage area as may be approved by the Contract Administrator.
- (iii) All resulting debris shall be deposited at a Waste Disposal Ground operating under the authority of Manitoba Regulation #150/91. Exceptions are liquid industrial and hazardous wastes which may require special disposal methods (see SC:21.4 D).
- (iv) Indiscriminate dumping, littering, or abandonment shall not take place.
- (v) No on-site burning of waste is permitted.
- (vi) Waste storage areas shall not be located so as to block natural drainage.
- (vii) Run-off from a waste storage area shall not be allowed to cause siltation of a watercourse.
- (viii) Waste storage areas shall be left in a neat and finished appearance and/or restored to their original condition to the satisfaction of the Contract Administrator.
- (ix) Equipment shall not be cleaned near watercourses; contaminated water from onshore cleaning operations shall not be permitted to enter watercourses.

(d) Dangerous Goods/Hazardous Waste Handling and Disposal

- (i) Dangerous goods/hazardous wastes are identified by, and shall be handled according to, The Dangerous Goods Handling and Transportation Act and Regulations.
- (ii) The Contractor shall be familiar with The Dangerous Goods Handling and Transportation Act and Regulations.

- (iii) The Contractor shall have on-site staff that is trained and certified in the handling of the dangerous/hazardous goods, when said dangerous/hazardous goods are being utilized on-site for the performance of the Work.
 - (iv) Different waste streams shall not be mixed.
 - (v) Disposal of dangerous goods/hazardous wastes shall be at approved hazardous waste facilities.
 - (vi) Liquid hydrocarbons shall not be stored or disposed of in earthen pits on-site.
 - (vii) Used oils shall be stored in appropriate drums, or tankage, until shipment to waste oil recycling centres, incinerators, or secure disposal facilities approved for such wastes.
 - (viii) Used oil filters shall be drained, placed in suitable storage containers, and buried or incinerated at approved hazardous waste treatment and disposal facilities.
 - (ix) Dangerous goods/hazardous waste storage areas shall be located at least 100 metres away from the high water line and be dyked.
 - (x) Dangerous goods/hazardous waste storage areas shall not be located so as to block natural drainage.
 - (xi) Run-off from a dangerous goods/hazardous waste storage area shall not be allowed to cause siltation of a watercourse.
 - (xii) Dangerous goods/hazardous waste storage areas shall be left in a neat and finished appearance and/or restored to their original condition to the satisfaction of the Contract Administrator.
- (e) Emergency Response
- (i) The Contractor shall ensure that due care and caution is taken to prevent spills.
 - (ii) The Contractor shall report all major spills of petroleum products or other hazardous substances with significant impact on the environment and threat to human health and safety (as defined in Table 1 below) to Manitoba Conservation, immediately after occurrence of the environmental accident, by calling the 24-hour emergency phone number (204) 945-4888. The Contract Administrator shall also be notified.
 - (iii) The Contractor shall designate a qualified supervisor as the on-site emergency response co-ordinator for the project. The emergency response co-ordinator shall have the authority to redirect manpower in order to respond in the event of a spill.
 - (iv) The following actions shall be taken by the person in charge of the spilled material or the first person(s) arriving at the scene of a hazardous material accident or the on-site emergency response co-ordinator:
 - ◆ Notify emergency-response co-ordinator of the accident:
 - identify exact location and time of accident
 - indicate injuries, if any
 - request assistance as required by magnitude of accident (Manitoba Conservation 24-hour Spill Response Line (204) 945-4888, Police, Fire Department, Ambulance, company backup)
 - ◆ Attend to public safety:
 - stop traffic, roadblock/cordon off the immediate danger area
 - eliminate ignition sources
 - initiate evacuation procedures if necessary
 - ◆ Assess situation and gather information on the status of the situation, noting:
 - personnel on-site
 - cause and effect of spill
 - estimated extent of damage
 - amount and type of material involved
 - proximity to waterways, sewers, and manholes

- ◆ If safe to do so, try to stop the dispersion or flow of spill material:
 - approach from upwind
 - stop or reduce leak if safe to do so
 - dike spill material with dry, inert sorbet material or dry clay soil or sand
 - prevent spill material from entering waterways and utilities by diking
 - prevent spill material from entering manholes and other openings by covering with rubber spill mats or diking. Resume any effective action to contain, clean up, or stop the flow of the spilled product.
- (v) The emergency response co-ordinator shall ensure that all environmental accidents involving contaminants shall be documented and reported to Manitoba Conservation according to The Dangerous Goods Handling and Transportation Act Environmental Accident Report Regulation 439/87.
- (vi) When dangerous goods are used on-site, materials for containment and cleanup of spill material (e.g. absorbent materials, plastic oil booms, and oversized recovery drums) shall be available on-site.
- (vii) Minor spills of such substances that may be contained on land with no significant impact on the environment may be responded to with in-house resources without formal notification to Manitoba Environment.
- (viii) City emergency response, 9-1-1, shall be used if other means are not available.
- (f) Vegetation
 - (i) Vegetation shall not be distributed without written permission of the Contract Administrator. The Contractor shall protect plants which may be at risk of accidental damage. Such measures may include protective fencing or signage and shall be approved in advance by the Contractor Administrator.
 - (ii) Herbicides and pesticides shall not be used adjacent to any surface watercourses.
 - (iii) All landowners adjacent to the area of application of herbicides or pesticides shall be notified prior to the Work.
 - (iv) Trees and shrubs shall not be felled into watercourses.
 - (v) Areas where vegetation is removed during clearing, construction, and decommissioning activities, shall be revegetated as soon as possible in accordance with the landscaping plans forming part of the contract, or as directed by the Contract Administrator.

E5.4 Method of Measurement and Payment

- (a) Adherence to the laws that govern the requirements for Environmental Protection are incidental to Site Development and Restoration.

E6. SITE DEVELOPMENT AND RESTORATION

E6.1 Description

- (a) This Specification shall cover all aspects of the Site Development and Restoration Work, including but not limited to mobilization and demobilization, office facilities, Site access, Site security (fencing and gates), utility clearances, traffic control and signage, snow clearing, sewer flow diversion and control, site runoff and drainage, protection and removal of trees, Site cleanup, and Site restoration.

E6.2 Submittals

- (a) Access and Layout Plans for review and approval by the Contract Administrator, in accordance with CW 1110, for the following items:
 - (i) Harrow Street shaft and crossing construction.

E6.3 Equipment

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

E6.4 Construction Methods

- (a) Diversion of Flows
 - (i) Flows such as snowmelt, rainfall, water from water main breaks or any other flow traveling through the Site, into excavations, or through pipes being worked on shall be diverted during construction.
- (b) Maintaining Flow in Existing Sewers
 - (i) Maintaining flow in existing sewers shall be as specified in E12.
- (c) Maintain Water Main Flows
 - (i) Maintain water main flow and providing temporary pressurized Water supply to water mains or water services impacted by construction.
- (d) Vegetation Removal and Protection
 - (i) Vegetation (living trees smaller than 50 mm and sod) removal may be permitted in order to facilitate Site access and temporary lay-down area. Existing vegetation shall not be removed without prior approval from the Contract Administrator.
- (e) General Site Cleanup and Restoration
 - (i) All areas of the construction Site shall be restored to a condition to the same or better than the original condition prior to initiation of Work. This may include, but is not necessarily limited to the Contractor's lay down area, the removal of the Contract Administrator Site trailer, and removal of all temporary access paths and fencing.
- (f) Topsoil and Sod
 - (i) All topsoil and sodding Work shall be performed in accordance with CW 3510. Topsoil and Sodding Work shall include all existing grassed areas disturbed by the Contractor during construction. The Contractor shall restore all areas disturbed during construction to the condition prior to the initiation of the Work or better, using topsoil and sod at his own cost.
- (g) Traffic Control and Signage
 - (i) Coordinate, install and maintain traffic control and signage in accordance with E8.
- (h) Snow Clearing
 - (i) The Contractor will be required to perform snow clearing and sanding operations on City streets and sidewalks within the Site where access to City snow clearing and sanding crews is blocked due to construction activities or where construction activities have created unsafe, icy conditions.
 - (ii) Snow build-up on sidewalks and roadways shall be maintained to the condition of the surrounding sidewalks and roadways
- (i) Construction Fencing
 - (i) The erection of temporary construction fencing is required around the laydown area.
 - (ii) The erection of temporary construction fencing is required around all construction activity work activities to ensure provision of safe work site.
 - (iii) Fencing or barriers shall be suitable to protect workers within the work site and minimize the impact to vehicular and pedestrian traffic or buildings and infrastructure in proximity to the work site.

E6.5 Method of Measurement and Payment

- (a) Site development and restoration will be measured and paid for at the Contract Lump Sum Price for "Site Development and Restoration", which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the Work included in this Specification.

- (b) 50% of the Site Development and Restoration unit price will be paid on the first progress payment following commencement of the Work.
- (c) 50% of the Site Development and Restoration unit price will be paid on the progress payment following Total Completion.

E7. TRUCK WEIGHT LIMITS

- E7.1 Spring weight restrictions may apply to streets within the area of Work. The City shall not pay for any portion of material which results in the vehicle exceeding the maximum gross vehicle weight allowed under The City of Winnipeg Traffic By-Law, unless such vehicle is operating under special permit.

E8. TRAFFIC MANAGEMENT

E8.1 Description

- (a) This specification covers activities related to managing traffic throughout the work Site. Items listed here are to be followed in addition all municipal requirements.
- (b) Taylor Ave is a Regional Street with pedestrian, cycling and vehicular traffic. It is a priority to minimize the impact of construction activities related to the Work required to complete this Contract.
- (c) A conceptual traffic management plan, (included in Appendix C), have been developed for use in planning traffic control for this Contract.
 - (i) The concepts presented within these plans have been reviewed and approved by the City of Winnipeg's Traffic Services Department.
 - (ii) Any modifications to this plan including the staging of the traffic control Work should be submitted to the Contract Administrator for approval prior to starting Work.
- (d) The below traffic requirements must be adhered to within these traffic management plans.

E8.2 Materials and Equipment

E8.2.1 Further to Clause 3.7 of CW 1130:

- (a) The Contractor shall be responsible for all signage and barricades not identified as provided by the City in the City of Winnipeg Manual of Temporary Traffic Control on City Streets. The Contractor shall provide the Contract Administrator a suitable Traffic Accommodation Strategy covering all the details for traffic management (cones and signage etc.) for each Work element at least 21 business days prior to commencement of any lane closures related to the Work.

E8.3 General Requirements

- (a) The Contractor shall not park company or private vehicles inside the barricaded work zone in a manner that will block sightlines for vehicles and pedestrians approaching and crossing or create any other safety concern.
- (b) Ambulance/ emergency vehicle access must be maintained at all times.
- (c) Intersecting street, private approach and lane access shall be maintained at all times (unless approved within the Specifications or by the Contract Administrator).
- (d) Should the Contractor be unable to maintain an existing access to a residence or business, he/she shall review the planned disruption with the business or residence and the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 24 hours notification to the affected residence or business and the Contractor Administrator, prior to disruption of access.
- (e) Winnipeg Transit service shall be maintained at all times. Should the Contractor be unable to maintain bus stops or routes it shall be reviewed with the Contract Administrator at least 48 hours in advance to see if modifications can be made.

- (f) The Contractor shall provide at least five (5) days notification to the Contract Administrator prior to beginning a new phase of traffic control on Taylor Avenue.

E8.4 Regional Street Requirements

- (a) Regional Streets impacted by the Work will include:
 - (i) Taylor Avenue
- (b) Review section E8.5 for additional intersecting street requirements.

E8.4.1 Taylor Avenue

- (a) Maintain a minimum of one lane in both westbound and eastbound directions during all stages of construction. Temporary lane crossings over the median will be permitted during the installation Works.
- (b) The eastbound lanes may be completely closed to construct the Harrow 1950 combined sewer crossing modifications.
- (c) Left turns may be prohibited along Taylor Avenue at the following locations:
 - (i) eastbound at Harrow Street
 - (ii) westbound at Harrow Street
- (d) Right turns may be prohibited along Taylor Avenue at the following locations:
 - (i) eastbound at Harrow Street

E8.5 Local / Non-Regional Street Requirements

- (a) Local / Non-Regional Streets impacted by the Work will include
 - (i) Harrow Street

E8.5.1 Harrow Street (Modifications to 1950 CS)

- (a) The 4 way signalized intersection will be converted into a signalized 3 way intersection. The modification to the intersection will be undertaken by the City. The Contractor must provide a minimum of 4 weeks' notice to the Traffic Management Branch and the Traffic Signals Branch of the City of Winnipeg Public Works Department in advance of when the transition of the intersection is required.
- (b) No southbound traffic through Taylor Ave intersection.
- (c) No northbound traffic through Taylor Ave intersection.
- (d) No left turn for eastbound and westbound Taylor Ave Traffic
- (e) Single lane Eastbound and Westbound traffic through Taylor Ave intersection
- (f) Where possible maintain safe Cycling Pathway through intersection.

E8.6 Payment

- E8.6.1 All Work associated with adhering to the requirements identified are incidental to Site Development and Restoration.

E9. EXPLORATION OF EXISTING UTILITIES AND SERVICES

E9.1 General

- (a) This specification covers the soft dig exploration of existing buried utilities within the project Site for the Current Project (Contract 5A).
- (b) Further to CW 1120, the Contractor shall perform exploratory excavations by soft dig methods or other methods suitable to the Contract Administrator to verify and locate buried utilities including but not limited to sewers, feeder mains, water mains, gas, power and telecommunications ducts and conduits, traffic signal conduits, street lighting and other communication cables.

E9.2 Execution

- (a) The exploration shall be done following all utility location surveys and a minimum of ten (10) days prior to any construction. The information obtained will determine if an alternate vertical or horizontal alignment of the proposed sewer may be beneficial to minimize conflicts with the existing utilities or services.
- (b) All proposed dig locations must be clearly identified and submitted to the Contract Administrator prior to utility exploration work beginning.
 - (i) The Contract Administrator may add additional locations.
- (c) The Contractor shall arrange for all required utility locations, safety watches and other required notifications.
- (d) The Contractor shall provide a minimum of two (2) Business Days' notice to the Contract Administrator prior to conducting utility exposures.
- (e) The Contractor shall arrange for any required traffic control to be set up in advance of the work and notify the Contract Administrator to arrange for lane closures as required.
- (f) The Contractor shall use a soft dig (hydro-excavator) to expose the utility under investigation.
- (g) The Contractor shall record the depth of the utility and provide this information to the Contract Administrator.
- (h) The Contractor is responsible for backfill and restoration of dig locations.

E9.3 Measurement and Payment

- (a) Any exploration of existing utilities and services relating to the chamber construction are the responsibility of the Contractor and are incidental to Site Development and Restoration.

E10. SUPPORT OR TEMPORARY RELOCATION OF EXISTING PIPES AND UTILITIES

E10.1 The Contractor shall provide support or temporary relocation of existing services and utilities when excavations/shafts expose or require the support of these services (due to proximity or other reasons). Support of the services shall be undertaken to the requirements of the utility owner. Services and utilities may only be interrupted with the permission of the Contract Administrator and the utility owner

- (a) Where these utilities include buried gas or electrical lines, the Contractor shall contact Manitoba Hydro and follow the Safe Excavation & Safety Watch Guidelines listed at https://www.hydro.mb.ca/safety/pdfs/safe_excavation_safety_watch_guidelines.pdf

E10.2 Measurement and Payment

- (a) Support of existing pipes and utilities will be incidental to the cost of the Chamber construction (unless otherwise identified as a separate pay item).

E11. PROTECTION OF EXISTING TREES

E11.1 Description

- (a) All trees within the project site that will be in proximity to construction equipment, or as identified by the Contract Administrator must be protected as described herein.
- (b) The Contractor is responsible for repairing any damage to trees from construction impacts with the project Site.

E11.2 The Contractor shall take the following precautions to prevent damage to trees from construction activities:

- (a) All trees immediately adjacent to construction activities and those identified to be at risk by the Contract Administrator are to be strapped with 25 x 100 x 2400 mm wood planks, or suitably protected as approved by the Contract Administrator. Do not use nails or other fasteners that penetrate the tree trunk. The width and length of strapping may be reduced to suit the tree being protected as approved by the Contract Administrator.

- (b) Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches) where 1 inch diameter equals 1 foot measured from the outside edge of the trunk of the tree at 6 inches above grade. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation. They must be properly trimmed with sharp tools to prevent crushing or being pulled by construction equipment. No paint is required. All exposed roots must be mulched until the excavated area is filled with clean earth to avoid exposure to sunlight and desiccation.
- (c) Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the Work required. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
- (d) Work on-Site shall be carried out in such a manner to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.
- (e) Repair, replace and maintain tree protection materials during construction until the Project completion.
- (f) Carefully remove safety fencing and strapping material without harming the tree as soon as the construction and restoration Work is complete.

E11.3 American elm trees not to be pruned between April 1st and August 1st and Siberian elm trees between April 1st and July 1st of any year under provisions of The Dutch Elm Disease Act.

E11.4 All damages to existing trees caused by the Contractor's construction activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the City Forester or designate. Damages must be repaired by an individual with a Manitoba Arborist license.

E11.5 The work described above for Protection of Existing Trees will be considered Incidental to Site Development and Restoration.

E12. MAINTAINING FLOW IN EXISTING SEWER

E12.1 Description

- (a) The specification covers the requirement of the Contractor to maintain sewer flow in the existing combined sewers that are impacted by the chamber construction.
- (b) Maintaining Flow in Existing Sewer shall be in accordance with City Specification CW 2130 and as listed here.
- (c) The Contractor may identify their method for controlling the flows, this includes construction of a flume within the excavation or a by-pass pumping arrangement.
- (d) Where by-pass pumping is selected to control dry weather flow of 0.012 m³/s, the Contractor must provide redundant pumps and a back-up power supply to ensure that the sewer flows are controlled to the existing peak dry weather flow of the pipe network; and so the combined sewer system is not at risk to elevated levels causing basement flooding.
- (e) Expected flows for dry weather flows and specific rain events flows is provided in the table below.

Parameter	DWF	1 year	2 year	5 year
Peak Flow (m ³ /s)	0.012	2.544	4.852	6.164
Peak Velocity (m/s)	0.176	1.587	1.822	1.988

E12.2 Submittals

- E12.2.1 Submittals shall be made in accordance with the requirements identified in E4 and as listed below.
- E12.2.2 Submit a description of the proposed bypass method which shall include the following, as applicable:
- (a) Diversion
 - (i) Size and location of pipe, bends and connections.
 - (ii) Pipe materials.
 - (iii) Procedures to monitor upstream mains for backup impacts.
 - (iv) Procedures for setup and breakdown of diversion.
 - (v) Emergency plan detailing procedures to be followed in event of sewer overflows, service backups, and sewage spillage.
 - (b) Pumping
 - (i) Size and location of manhole or access points for suction and discharge hose or piping.
 - (ii) Sections showing suction and discharge pipe depth, embedment, select fill and special backfill, if buried.
 - (iii) Temporary pipe supports and anchoring required.
 - (iv) Thrust and restraint block sizes and locations.
 - (v) Sewer plugging method and type of plugs.
 - (vi) Bypass pump sizes, capacity, number of each size to be on site and power requirements.
 - (vii) Backup pump, power and piping equipment.
 - (viii) Calculations for upstream backwater effect to ensure properties upstream are not adversely affected by pumping.
 - (ix) Calculations of static lift, friction losses, and flow velocity. Pump curves showing pump operating range.
 - (x) Design plans and computation for access to bypass pumping locations indicated on drawings.
 - (xi) Calculations for selection of bypass pumping pipe size.
 - (xii) Method of noise control for each pump and/or generator.
 - (xiii) Method of protecting discharge manholes or structures from erosion and damage.
 - (xiv) Schedule for installation and maintenance of bypass pumping lines.
 - (xv) Procedures to monitor upstream mains for backup impacts.
 - (xvi) Procedures for setup and breakdown of pumping operations.
 - (xvii) Emergency plan detailing procedures to be followed in event of pump failures, sewer overflows, service backups, and sewage spillage.
- E12.3 Methods
- (a) Schedule and perform work in manner that does not cause or contribute to incidence of basement flooding, overflows, releases or spills of sewage from sanitary sewer system or bypass operation.
 - (b) The Contractor shall acquire any permits required from the City for redirecting of flows
 - (c) During bypass pumping or diversion operation, protect sewer lines from damage inflicted by equipment.
 - (d) Upon completion of bypass pumping or diversion operations, and after the receipt of written permission from the Contract Administrator, the Contractor shall remove or abandon temporary piping installed as part of this specification.
- E12.4 Measurement and Payment

- (a) The costs for Maintaining Flow in Existing Sewers is incidental to Site Development and Restoration and shall include all work described herein and that is required to complete the Work.

E13. EXCAVATION, BEDDING AND BACKFILL

E13.1 General

- (a) In addition to CW 2030, this Specification covers requirements for excavation, bedding and backfill.

E13.2 Related Specifications

- (a) Environmental Protection Plan – Section E5
- (b) Temporary Surface Restoration – Section E19
- (c) Permanent Surface Restoration – Section E20

E13.3 Methods

(a) Location of Existing Utilities

- (i) The Contractor shall arrange and provide temporary or permanent relocation of existing utilities, and or temporary support of existing utilities required for the excavation of the shaft. Work on private utilities may not occur without submittal and approval of your utility plan to the Contract Administrator and approval from the utility owner.
- (ii) See Specification Section E9 for further requirements.

(b) Disposal of Unsuitable or Surplus Excavated Material

- (i) The Contractor is responsible for arranging for a disposal site for all excavated material, and associated works including transportation and payment of tipping fees.
- (ii) There will be no measurement and payment for surplus soil material disposed at any disposal site.

E13.3.2 Foundation, Bedding and Initial Backfill

- (a) Cement Stabilized Fill (CLSM) in accordance with CW 2030 and Table CW 2160.1 shall be used as initial backfill. Further to Table CW2160.1 the maximum compressive strength at 28 days to be no more than 1 MPa
 - (i) The Contractor install fill in lifts and provide sufficient supports to resist uplift of piping or structures due to backfilling.

E13.3.3 Backfill

- (a) CLSM shall be used in the chamber excavation area.
- (b) Excavations under or within one (1) metre of paved areas on Taylor Avenue shall be Class 1 as per SD-002 unless otherwise noted below or on the Drawings.
- (c) Excavations under or within one (1) metre of paved areas on other roadways shall be Class 3 as per SD-002 (Class 2 backfill would also be acceptable, but at no additional cost), unless otherwise noted below or on the Drawings.
- (d) Material excavated when frozen, or when air temperature is less than 0°C shall not be used as fill or backfill until material completely thaws.
- (e) The Contractor shall have personnel available for immediate repairs of settlement at shaft locations from the start of construction until final restoration is complete.

E13.4 Measurement and Payment

- (a) All costs associated with Excavation, Bedding and Backfill as described herein are incidental to Modification of 1950 mm Combined Sewer.

E14. DEPRESSURIZATION FOR CONSTRUCTION OF STRUCTURES AND SHAFTS

E14.1 Description

- (a) This specification covers the provision for drawdown and depressurization of the bedrock groundwater pressures, if necessary, due to elevated groundwater levels (GWLs), to facilitate the construction.
- (b) Elevations defining the need for groundwater depressurization are listed within the GDR and GBR.
- (c) The Contractor should be aware that the GWL varies seasonally.
- (d) The Contractor is responsible to evaluate data provided within the GDR and GBR and determine what, if any, depressurization will be required to protect against basal heave of the foundation for shaft excavation.
- (e) The Contractor must submit alternate methods of controlling groundwater to the Contract Administrator for review and approval in accordance with B7.

E14.2 Submittals

- (a) Shaft Excavation Depressurization System Plan: Submit the following describing the shaft excavation depressurization plan, designed and sealed by a Professional Engineer or Professional Geologist registered to practice in the Province of Manitoba and including:
 - (a) An evaluation of static groundwater conditions and required drawdown elevations for successful completion of the Project excavations.
 - (b) Permissible groundwater levels (pressures) at various stages of excavation and backfill to prevent uplift of soil layers and to prevent any other disturbance to the in-situ foundation soils due to any excess groundwater pressures.
 - (c) Confirmation of the elevation to which the excavation may proceed before the well system commences operation.
 - (d) Confirmation of the extent to which chamber construction and backfill must be completed before the well system can cease operation.
 - (e) Number of wells, including location, size, pumps and installation details.
 - (f) Schedule of monitoring, maintenance, manpower estimates, and interpreting of ground water levels throughout the duration of the Project.

E14.3 Methods

- (a) The Contractor shall monitor the groundwater level (GWL) of their shaft to control basal heave within the levels indicated in the Geotechnical Baseline Report.
 - (i) A standpipe piezometer shall be drilled into the till allowing for monitoring of the till pressures.
 - (ii) The piezometer shall be drilled within 1-3 m of edge of shaft/excavation.
- (b) The Contractor is required to monitor the groundwater levels in accordance with the following monitoring schedule:
 - (i) If monitoring to ensure GWL are below threshold that requires depressurization – minimum one reading per day.
 - (ii) If monitoring active depressurization to determine impact of pumping on GWL – Minimum twice per day.
- (c) Depressurization system shall control ground water levels and pressures and protect against excavation basal heave/blowout.
 - (i) The depressurized system shall include a well system or an alternate approved design in accordance with B7 and as approved by the Contract Administrator.

- (ii) Once required, the well system will be required to operate continuously during excavation, construction and backfill activities.
- (d) The Contractor shall be responsible for any permits necessary for operation of their depressurization system.

E14.4 Measurement and Payment

- (a) The Work required for depressurization of the GWL, or alternate methods of controlling GWL to facilitate chamber construction is incidental to the Site Development and Restoration.

E15. SUPPLY AND INSTALLATION OF TEMPORARY SHORING

E15.1 Description

- (a) This Specification shall cover shoring requirements for the Works.

E15.2 Construction Methods

- (a) Excavation
 - (i) Remove excavated material from the Site immediately. Excavated material shall not be stockpiled on-Site.
 - (ii) All Working areas below grade shall be kept adequately and securely supported during and after excavation until the shoring and bracing is in place to prevent loss of ground or injury to any person from falling material.
- (b) Excavation Depressurization
 - (i) Depressurization may be required to facilitate the excavation and foundations for the Shafts. If depressurization is required it shall be as specified in E14 .
- (c) Excavation Security Fence
 - (i) Further to Clause 3.1 of CW 1130, cover the excavation and provide a security fence to surround the excavation when unattended in accordance with the following.
 - (ii) Security fence shall be chain link fence as per CW 3550 or approved equal in accordance with B7, a minimum 1.80 metres high with metal support posts embedded far enough into the ground and spaced close enough together so the fence will not sag or collapse.
 - (iii) Attach fencing securely to posts.
 - (iv) Secure the gate or end of the fencing to a post with chain and a padlock.
- (d) Shoring
 - (i) The type, strength, and amount of shoring and bracing shall be such as the nature of the ground and attendance conditions may require, taking into account property lines, existing slopes, utilities and roadways.
 - (ii) Shoring and bracing shall be so spaced and dimensioned as to prevent caving, loss of ground, surface settlement, or squeezing of the soil beyond the neat lines of excavation. It shall be free from defects that might impair its strength or suitability for the Work. Sheeting/shoring and bracing shall conform to the latest revisions of the "Construction Safety Act" of the Department of Labour of the Government of Manitoba and in accordance with Province of Manitoba "W210 The Workplace Safety and Health Act" and "Guidelines for Excavation Work".
 - (iii) Supporting design calculations as required to facilitate review of the submission for conformance with the Contract Documents.
 - (iv) Submit AutoCAD Shop Drawings and design calculations for the shoring/excavation system designed and sealed by a Professional Engineer registered or licensed to practice in the Province of Manitoba and experienced in the structural design of shoring systems. The designer of the shoring system shall inspect the system during construction and certify, in writing to the Contract Administrator, that construction is in conformance with the approved design.

- (v) Shoring and bracing shall be installed such that the structure size and wall thickness shown on the shop drawings can be obtained subsequent to installation of the shoring system.
 - (vi) Shoring and bracing shall be designed and installed to prevent settlement and damage to existing structures. In the event of damage, the Contractor will be held liable, and shall be required to provide appropriate restoration at his cost, to the satisfaction of the Contract Administrator.
 - (vii) Shoring and bracing shall remain in place until concrete has attained 75% of the design strength.
- (e) Monitoring Movement of Shoring
- (i) The Contractor shall submit to the Contract Administrator a plan for monitoring the movement of trench shoring during construction a minimum of two (2) Working Days prior to the installation of trench shoring. The monitoring plan shall be performed by approved survey methods for vertical or horizontal movement of the shoring, acceptable to the Contract Administrator. Costs for monitoring shall be incidental to the installation of the temporary shoring.

E15.3 Measurement and Payment

- (a) Shoring required for shaft to complete the Work will be incidental to the Contract. No additional payment will be made for supplying materials and performing all operations herein described and all other items incidental to Modifications of 1950 mm Combined Sewer.

E16. MODIFICATION OF 1950 MM COMBINED SEWER

E16.1 General

- (a) This specification covers the modification of the existing 1950 mm diameter combined sewer to allow the future LDS pipe to be constructed above.
- (b) Bypass the flow within the 1950 sewer in accordance with the requirements of E12 prior to performing any modifications to the sewer.

E16.2 Submittals

- (a) Submittals shall be made in accordance with E4 and as listed below.
- (b) Existing Sewer Modification Plan:
 - (i) Work plan and schedule detailing sequence of construction, personnel, traffic management, shaft construction, access, temporary flow control and clay tile sewer support, means to transport and place steel, concrete and CLSM, and durations for each element of the work plan. Provide a site specific safety plan for dealing with confined space, including but not limited to, access, egress, air monitoring, ventilation and rescue procedures.
 - (ii) Layout Drawings: Submit layout drawings detailing dimensions and locations of all temporary shoring necessary to safely complete the 1950 sewer modification.
- (c) Design information confirming that the select pre-cast sections to be installed under the Tunnel path are capable of supporting the loads identified in E1.4.
- (d) Design in accordance with specifications - ASTM C 1433, C – 478 and CSA A257.4. calculations are to be sealed by a Professional Engineer registered or licensed to practice in the Province of Manitoba. Include as a minimum:
 - (i) Temporary support system for existing 1950 clay tile sewer including method of installation to not impede flow.
 - (ii) Critical dimensions to maintain design flow and clearance to the tunnel
 - (iii) Design loading scenarios as shown on the drawings
 - (iv) Structural member design, structural dimensions and reinforcing
 - (v) Geotechnical design for foundation loading and buoyancy

- (vi) Precast reinforcing and concrete mix design
- (e) Contingency plan addressing the following scenarios:
 - (i) Uncontrolled inflow of groundwater
 - (ii) Increase in peak dry weather flows
 - (iii) Unseasonably high flows exceeding weir and flow control

E16.3 Materials

- (a) Cast in place Concrete:
 - (i) Reinforced concrete shall be in accordance with the requirements of CW 2160.
- (b) CLSM: In accordance with the requirements of Section E13
- (c) Precast Concrete: In accordance with the requirements of Section E17

E16.4 Construction

- (a) Bypass peak dry weather flows within the 1950 sewer in accordance with Section E12. Temporary weirs installed within the 1950 mm shall not exceed 500 mm in height measured from the invert without approval from the Contract Administrator.
- (b) Install and maintain temporary access to the sewer along with temporary controls and ventilation. Provide at least 2 means of egress at all times during construction
- (c) Clean interior contact surfaces of clay tile sewer and install temporary support system to maintain clay tiles integrity during construction, using a system of rib and lagging or other approved temporary type support in accordance with B7 extending into unexcavated soil, not unduly impeding high sewer discharge rates. Do not break into 1950 sewer or remove clay tiles until temporary support system has been installed and inspected by Contract Administrator.
- (d) Remove clay sewer tiles adjacent to the temporarily supported length as close to the tie-in location as possible and excavate ground to design invert. Take care not to loosen ground and degrade temporary support system foundation.
- (e) De-water as required to maintain a dry subgrade for the mud slab and compacted gravel
- (f) In no case shall sewer tiles be removed outside the limits of the temporary support system.
- (g) Install mud slab and level gravel base, prior to installing the pre-cast units
- (h) Install benching and make water tight the pre-cast structure.
- (i) Install concrete collar and fill voids left by tiles with Masterflow 928 or similar approved, include dowels if voids are large
- (j) Backfill entire excavation with CLSM to the underside of the road construction

E16.5 Measurement and Payment

Construction of the modifications to the existing 1950 mm clay tile combined sewer while maintaining the existing combined sewer flows will be paid on a lump sum basis at the Contract Unit Price for "Modification of 1950 mm Combined Sewer". The price shall include all works and materials necessary to complete the installation as identified herein and as indicated on the Drawings.

- (a) 25% of the Modification of 1950 mm Combined Sewer unit price will be paid on the first progress payment following completion of the temporary shoring.
- (b) 55% of the Modification of 1950 mm Combined Sewer unit price will be paid on the progress payment following installation and acceptance of the concrete Works.
- (c) 20% of the Modification of 1950 mm Combined Sewer unit price will be paid on the progress payment following Temporary Surface Restoration.
- (d) The cost of shaft construction and associated shoring required for the installation of the works described herein, is incidental to the Modification of 1950 mm Combined Sewer.

- (e) Supporting the existing clay tile sewer during construction and connection of the existing sewer to the modified Works is incidental to Modification of 1950 mm Combined Sewer.
- (f) Excavation, bedding and backfill described in section E13 will be incidental to the Modification of 1950 mm Combined Sewer.
- (g) Surface restorations described in section E20 will be incidental to Site Development and Restoration.
- (h) Control of GWL to facilitate construction as described in section E14 is incidental to the Site Development and Restoration.
- (i) Maintaining flows within the existing combined sewer as defined in E12 is considered incidental to Site Development and Restoration.

E17. PRECAST CHAMBER CONSTRUCTION

E17.1 Description

E17.1.1 This Specification will cover supply, installation and associated construction Works of the Precast components of the chamber:

E17.2 Submittals

- (a) Submittals shall be made in accordance with E4 and as listed below.
 - (i) Work plan detailing sequence of construction, personnel, access, means to transport and place steel, concrete and CLSM, and durations for each element of the work plan. Provide a site specific safety plan for dealing with confined space, including but not limited to, access, egress, air monitoring, ventilation and rescue procedures,

E17.3 Quality Assurance

- (a) Qualifications of Precasting Manufacturers:
 - (ii) Manufacturer: Certified to Canadian Precast / Prestressed Concrete Institute (CPCI) Certification Program.
 - (iii) Precast Concrete and Precast Prestressed Concrete: Product of manufacturer with 3 years' experience producing precast concrete products of quality specified.
 - (iv) Precast Plant: PCI certified plant with current certification.
 - (v) Precasting manufacturers with apparent capability to meet these Specifications:
 - Lafarge
 - Inland Pipe
 - Precon Precast Products
 - (vi) Calculations stamped and signed by an engineer registered in the same province as the Project.

E17.4 Materials

(a) To conform to ASTM C478, CSA A257.4 and ASTM C1433

(i) Concrete Chamber Construction

Item Description	Design Requirement
Class of Exposure	S-2
Maximum Size of Aggregate	19 mm
Cement Type	Type HS (type 50)
Minimum Compressive Strength at 7 Days	20 MPa
Minimum Compressive Strength at 28 Days	30 MPa

Minimum Compressive Strength at 56 Days	32 MPa
Slump/Flow	80 mm +/- 20 mm
Air Content	6.5% +/- 1.5
W/C	0.5

- (b) Precast Concrete
 - (i) Chamber precast concrete elements shall be as listed on the Drawings
- (c) Cast in place Concrete:
 - (i) Reinforced concrete shall be in accordance with the requirements of CW2160.
- (d) CLSM: In accordance with the requirements of Section E13

E17.5 Construction Methods

- (a) The Contractor shall install the chamber and benching as shown on the Drawings.

E17.6 Measurement and Payment

- (a) Precast Chamber Construction as required to complete the Work will be incidental to the Contract. No additional payment will be made for supplying materials and performing all operations herein described and all other items incidental to the Modification of 1950 mm Combined Sewer.

E18. COLD WEATHER REQUIREMENTS

E18.1 Description

- (a) Should any concrete Work be required to be carried out when the mean daily temperature is below 5°C or anticipated to be below 5°C within the next 24 hours, cold weather requirements will be required as specified herein.
- (b) All freshly placed concrete shall be protected from the elements and from defacements due to construction operations.

E18.2 Construction Methods

- (a) The following are minimum requirements for protecting concrete during and after placement during freezing weather, but mere adherence to these requirements will not relieve the Contractor of the necessity for producing concrete which has not been weakened or injured by frost of freezing, or replacing such damaged Work at no additional expense to the City;
 - (i) Before any concrete is placed, all ice, snow, and frost shall be completely removed from all formwork, and other surfaces against which concrete temperatures of such surfaces raised above 7°C for twenty-four (24) hours minimum prior to concreting. Where concrete Work is to come in contact with the earth, the surface of the earth shall be completely free of frost when concrete is placed thereon.
 - (ii) Concrete aggregates and water shall be heated to not over 80°C. Concrete shall be not less than 20°C or more than 30°C in temperature when deposited. Concrete when placed during freezing weather, or if freezing is anticipated during curing period, shall be fully enclosed and the temperature of same maintained at not less than 20°C for five (5) days nor less than 5°C for an additional five (5) days.
 - (iii) Heating enclosures shall be strong and wind-proof, well ventilated with heating units so located as to prevent local overheating or drying of the concrete or damage from combustion gases. Only indirect fired heaters will be accepted. Units must be vented outside the enclosure. No direct fired units will be accepted.
 - (iv) The Contractor shall inform the Contract Administrator well in advance as to the methods of enclosure and frost protection they propose to employ.

E18.3 Measurement and Payment

- E18.3.1 Cold weather requirements shall be considered incidental to the Modification of 1950 mm Combined Sewer and no measurement or payment will be made for this item.

E19. TEMPORARY SURFACE RESTORATION

E19.1 General

- (a) This specification applies to temporary surface restoration Work.
- (b) Further to clause 3.3 of CW 1130 where permanent surface restorations cannot be made due to cold weather, the Contractor shall temporarily restore surfaces as follows:

E19.2 Execution

- (a) Backfill under Temporary Surface Restoration
 - (i) Backfill and level boulevards and grassed areas to match existing surface elevations,
 - (ii) Use Class 2 backfill in excavation under temporary street pavement and sidewalk where Class 3 backfill cannot be jetted and flooded due to cold weather.
 - (iii) Class 2 backfill may be compacted in 600 mm lifts where backhoe operated pneumatic plate compactors are used.
 - (iv) Jet and flood Class 2, Class 3 and Class 5 backfilled excavations in spring when ground is not frozen prior to permanent restoration.
- (b) Temporary Surface Restoration
 - (i) Cap excavations in concrete pavement with a 100 mm layer of concrete for "Temporary Restoration of Utility Pavement Cuts" as specified in CW 3310,
 - (ii) Cap excavations in sidewalk pavement with a 50 mm layer of concrete for "Temporary Restoration of Utility Pavement Cuts" as specified in CW 3310,
 - (iii) Insulate temporary concrete as required during 48 hour curing period,
 - (iv) Where curb has been removed as part of the pavement cut pour temporary curb using "Concrete for Temporary Restoration of Utility Pavement Cuts" as specified in CW 3310.
 - (v) Remove all temporary pavements prior to permanent restorations.
- (c) Maintenance
 - (i) The Contractor shall monitor and maintain temporarily restored surfaces as required until permanent restoration is complete.
 - (ii) If, in the opinion of the Contract Administrator, temporarily restored surfaces are not being adequately maintained or were not properly constructed and pose a danger to the public, maintenance or reconstruction will be done by the City forces with no advance notification the Contractor.
 - (iii) All costs associated with the maintenance or reconstruction of temporary pavement incurred by the City shall be deducted from future payments to the Contractor.

E19.3 Measurement and Payment

- (a) Temporary restoration associated with the chamber construction on the Form B will be paid on a square meter basis at the Contract unit price for "Temporary Surface Restorations".
- (b) Temporary restoration of other road cuts not defined in E19.3 (a) will be considered incidental to Site Development and Restoration.
- (c) No extra payment will be made for the installation of Class 2 backfill under temporary street pavement and sidewalk.
- (d) No measurement or payment will be made for the temporary restoration of barrier or lip curb.
- (e) No measurement or payment will be made for the temporary restorations of boulevards and grassed areas.

- (f) No measurement or payment will be made for the removal of temporary pavement prior to permanent restoration.

E20. PERMANENT RESTORATION

E20.1 Description

- (a) This specification identifies the requirements for permanent surface restorations.
- (b) This specification amends the Surface Restorations defined in CW 2130 and places the cost of permanent surface restorations upon the Work item being undertaken.

E20.2 General

- (a) The Contractor will follow the City’s Street By-law No. 1481/77 and Street Cuts Manual (2018) for all pavement restoration unless otherwise shown on the drawing or specifications or as directed by the Contract Administrator.
- (b) The Street Classification and Surface Type within the project work area are classified as follows:

Street Name	Segment	Pavement Type	Condition
Taylor Ave EB	Guelph St to Harrow St	Asphalt over Concrete	Fair
Taylor Ave EB	Harrow St to Stafford St	Asphalt over Concrete	Poor
Harrow St	Jackson Ave to Taylor Ave	Asphalt over Concrete	Fair
Harrow St	Taylor Ave to Harrow St E	Asphalt over Concrete	Good
NOTE: values were obtained from the City of Winnipeg Street Conditions Map available at http://winnipeg.ca/publicworks/maps/streetconditions.asp and may not reflect existing conditions.			

- (c) All street segments within the work area impacted by the Work as determined by the Contract Administrator shall be maintained and restored with the following additional requirements.
 - (i) Review and record the condition of each street segment with the Contract Administrator and a City Representative from Public Works prior to the initiation of Work.
 - (ii) Review and record the condition of each street segment with the Contract Administrator and a City Representative from Public Works prior to surface restoration. The surface restoration required for each street segment will be agreed upon at this review meeting.
 - (iii) Pavement Restoration Guidelines can be found in the City of Winnipeg Street Cuts Manual.

E20.3 Methods

- (a) The Contractor shall permanently restore all existing surface areas disturbed by construction activities including but not limited to areas disturbed by; construction equipment, placement of equipment trailers and where construction materials were stockpiled, shall be restored as follows:
 - (i) Boulevards, ditches and grassed areas - sodding using imported topsoil in accordance with CW 3510. The Contractor shall restore all areas disturbed during construction to existing condition or better, using topsoil and sod at its own cost.

- (ii) Asphalt surfaces – match existing base course and asphalt thickness or a minimum of 150 mm of base course and 75 mm of Type 1A Asphaltic Concrete, whichever is greater, in accordance with CW 3410.
- (iii) Miscellaneous concrete slabs, including sidewalk - in accordance with CW 3235
- (iv) Interlocking stones – in accordance with CW 3330.
- (v) Concrete curb and gutter – in accordance with CW 3240.
- (vi) Trees - requiring replacement due to construction activities (as directed by the Contract Administrator) shall be installed in accordance with CW 3510 and as per E21. The Contractor will not be reimbursed under a separate pay item for replacing trees damaged by construction activities. The work will be considered incidental to Site Development and Restoration.
- (vii) Topsoil - All Topsoil Work shall be performed in accordance with CW 3510. Topsoil Work shall include all existing grassed areas disturbed by the Contractor during construction. The Contractor shall restore all areas disturbed during construction to existing condition or better, using topsoil and sod at its own cost.

E20.4 Measurement and Payment

- (a) This specification amends CW 2130 such that:
 - (i) All costs associated with Permanent Restoration as described herein are incidental to Site Development and Restoration.

E21. TREE PLANTING

E21.1 Description

- (a) This Specification shall cover the installation of new trees to replace trees removed as a direct requirement of the Work shown on the Drawings. Trees removed as part of the development of a Contractor's laydown area will not be covered under this specification and are to be considered part of E6 Site Development and Restoration.
- (b) The work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead labour, materials, and all other things necessary for and incidental to the satisfactory performance and completion of all work as hereinafter specified.
- (c) The Contractor shall be responsible for the supply, safe storage and handling of all materials set forth in this Specification.

E21.2 Materials

- (a) Trees
 - (i) Trees shall consist of native species approximately 75 mm in diameter. The number and species of trees to be planted will be based on the number and species of trees removed during construction and will be determined by the Contract Administrator.
- (b) Tree species specific to the Site include:
 - (i) Manitoba Maples
 - (ii) Green Ash
 - (iii) American Elm
 - (iv) Basswood
 - (v) Cottonwood

E21.3 Construction Methods

- (a) Trees
 - (i) The trees shall be planted in the general vicinity of where trees were removed prior to the commencement of works or as directed by the Contract Administrator.
- (b) Quality Control

(i) Inspection

(a) All workmanship and all materials furnished and supplied under this Specification are subject to close and systematic inspection by the Contract Administrator including all operations from the selection of materials through the final acceptance of the specified work. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection of approval that may have been previously given.

(ii) Access

(a) The Contract Administrator shall be afforded full access for the inspection of materials at the site to determine whether the material is being selected and placed in accordance with this Specification.

E21.4 Measurement and Payment

(a) Replacement of trees removed as a direct impact of the Work shown on the Drawings will be paid at the Contract unit price of "Tree Planting" for each tree planted in accordance with this Specification.

E22. FULL DEPTH PARTIAL SLAB PATCHES

E22.1 General

(a) Construct full depth partial slab patches in accordance with CW 3230.

E22.2 Measurement and Payment

(a) Full depth partial slab patches shall be measured on an area basis and paid for at the Contract Unit price per square meter for "Partial Slab Patches" for each type of pavement.

(b) No differentiation will be made for class of patch.

(c) No separate measurement or payment will be made for Drilled Dowels or Tie Bars, the cost for which shall be included in the prices for "Partial Slab Patches".

E23. HIGH FLOW THROUGH CONSTRUCTION SITE CLEAN UP

E23.1 Description

(a) This specification covers work required to clean and restore the Site in order to resume work following a high flow event that surpasses the specified bypass flow control and floods the excavation.

(b) The occurrence of a high flow event that requires clean-up to resume work shall be determined by the Contract Administrator.

E23.2 Measurement and Payment

(a) High Flow Through Construction Site Clean Up shall be measured on an unit price basis and paid for at the Contract Unit price for "High Flow Through Construction Site Clean Up" for each occurrence.

E24. CHANGE IN CONTRACT CONDITIONS

E24.1 Description

(a) This specification covers changes identified to the scope of work including changes in geotechnical and geological conditions and the location of existing underground infrastructure as shown on the drawings.

(b) The basis for the geotechnical and geologic conditions are described in the GBR and GDR as defined in Section E2.

(c) If the excavation should encounter an obstruction or if existing underground infrastructure is such that it prevents the construction of the 1950 sewer modification, the Contractor

shall notify the Contract Administrator immediately. The Contractor shall correct the condition, and remove, clear, or otherwise make it possible to complete the construction of the 1950 sewer modifications.

- (d) Upon written notification by the Contract Administrator, the Contractor shall immediately proceed with correcting the conditions to allow for the construction of the 1950 sewer modifications by approved methods, as submitted by the Contractor and approved by the Contract Administrator.

E24.2 Measurement and Payment

- (a) Where a Contractor has made a claim in accordance with C7 which has been accepted by the Contract Administrator and City, the Contractor will be compensated in accordance with C7 from the allowance under the Contract unit price "Change in Contract Conditions"

E25. PROVISIONAL ITEMS

E25.1 The Provisional Items listed on Form B: Prices are part of the Contract.

E25.2 The Contractor shall not perform Work included in the Provisional Items without prior authorization from the Contract Administrator. All Work included in the Provisional Items will be carried out within the construction areas shown on the Drawings.

E25.3 Notwithstanding GC:7, the City reserves the right to diminish all or any portion of the items of work listed in the Provisional Items and no claim shall be made for damages on the grounds of loss of anticipated profit or for any other reason.

PART F - SECURITY CLEARANCE

F1. SECURITY CLEARANCE

- F1.1 Each individual proposed to perform the following portions of the Work:
- (a) any Work on private property;
 - (b) any Work within City facilities other than:
 - (i) an underground structure such as a manhole;
 - (ii) in areas and at times normally open to the public;
- F1.1.1 Each Individual shall be required to obtain a Police Information Check from the police service having jurisdiction at his/her place of residence. Or
- (a) BackCheck, forms to be completed can be found on the website at: <http://www.backcheck.net/> ; or
 - (b) Commissionaires (Manitoba Division), forms to be completed can be found on the website at: <https://www.commissionaires.ca/en/manitoba/home> .
- F1.2 The following is a link to information for obtaining the Police Information Check from the City of Winnipeg Police Service. <http://winnipeg.ca/police/pr/PIC.stm>
- F1.2.1 The Police Information Check shall include a Vulnerable Sector Screening. This can be obtained by following the link below <http://winnipeg.ca/police/pr/PIC.stm>
- (a) Individuals will need to state in the form, that they may be working in City of Winnipeg pools, libraries and community centres;
- F1.2.2 The original Police Information Check (Form P-612) will be provided by the Winnipeg Police Service to the individual applicant. The original has a validation sticker from the Winnipeg Police Service in the top right hand corner. The applicant shall:
- (a) Provide the original Police Information Check (Form P-612) to the Contract Administrator.
- F1.3 Prior to the award of Contact, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Police Information Check obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform such Work.
- F1.4 Any individual for whom a Police Information Check is not provided, or for whom a Police Information Check indicates any convictions or pending charges related to property offences or crimes against another person will not be permitted to perform any Work specified in F1.1.
- F1.5 Any Police Information Check obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- F1.6 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated Police Information Check. Any individual who fails to provide a satisfactory Police Information Check as a result of a repeated Police Information Check will not be permitted to continue to perform any Work specified in F1.1.