



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 269-2017

**FERRY ROAD AND RIVERBEND COMBINED SEWER RELIEF CONTRACT 5 EAST
STAGE 2**

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	4
Form G1: Bid Bond and Agreement to Bond	16
Form G2: Irrevocable Standby Letter of Credit and Undertaking	18

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	4
B10. Prices	4
B11. Disclosure	4
B12. Qualification	5
B13. Bid Security	6
B14. Opening of Bids and Release of Information	6
B15. Irrevocable Bid	7
B16. Withdrawal of Bids	7
B17. Evaluation of Bids	7
B18. Award of Contract	8

PART C - GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

General

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

Submissions

D8. Authority to Carry on Business	2
D9. Safe Work Plan	3
D10. Insurance	3
D11. Performance Security	3
D12. Subcontractor List	4
D13. Detailed Work Schedule	4

Schedule of Work

D14. Commencement	4
D15. Working Days	5
D16. Springtime Working Conditions	5
D17. Critical Stages	5
D18. Substantial Performance	5
D19. Total Performance	6
D20. Liquidated Damages	6
D21. Scheduled Maintenance	6

Control of Work

D22. Job Meetings	7
D23. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	7
D24. The Workplace Safety and Health Act (Manitoba) – Qualifications	7
D25. Environmental Protection Plan	7
D26. Traffic control and maintenance of Access	13
D27. Travel Routes, Restrictions and Contractor Parking	14
D28. Pedestrian Safety	15
D29. Water Used on City of Winnipeg Projects	15
D30. Confined Space Entry	15

Measurement and Payment

D31. Payment	15
--------------	----

Warranty

D32. Warranty	15
Form H1: Performance Bond	17
Form H2: Irrevocable Standby Letter of Credit	19
Form J: Subcontractor List	21

PART E - SPECIFICATIONS

General

E1. Applicable Specifications and Drawings	1
E2. Soils Investigation Report	1

General Requirements

E3. Office Facilities	1
E4. Site Fencing	2
E5. Protection of Existing Trees	2
E6. Tree Removal	3
E7. Refuse and Recycling Collection	4
E8. Exploration of Existing Utilities and Services	4
E9. Maintain Existing Sewer Flows, Flow Control, Diversions and Bypass Pumping	4
E10. Sewer Construction	5
E11. Excavation, Bedding and Backfill	5
E12. Trenchless Excavation	6
E13. Trenchless Excavation Obstructions	7
E14. Street Conditions and Permanent Pavement Restoration	7
E15. Temporary Surface Restorations	8
E16. Private Driveway, Sidewalk and Walkway Renewals	9
E17. Boulevard Restoration following Gas Main Relocation	10
E18. Existing Drainage Inlet Cleaning and Inspection	10
E19. Deflection Testing of PVC Sewers	10
E20. Video Inspection of Sewers	10
E21. Catch Basin Reconnections and Renewals	11
E22. Repairs to Existing Sewer or Water Services	11
E23. Board Insulation	12
E24. Boulevard and Yard Trees	13
E25. Provisional Items	18

PART F - SECURITY CLEARANCE

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

Appendix A – Test Hole Logs

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

- B1.1 FERRY ROAD AND RIVERBEND COMBINED SEWER RELIEF CONTRACT 5 EAST STAGE
2

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, April 12, 2017.
- 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 D3.1.
- 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.
- B6.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B6.2.2 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.
- B6.3 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 (4) 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 B17.
- 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 B17.1(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 12 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) N/A

B12. QUALIFICATION

B12.1 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.

B12.2 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>

B12.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);
- (d) upon request of the Contract Administrator, obtain Security Clearances in accordance with PART F - Security Clearance ;

B12.4 Further to B12.3(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/>).

B12.5 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.

B12.6 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.

B13. BID SECURITY

B13.1 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.

B13.1.1 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.

B13.1.2 All signatures on bid securities shall be original.

B13.1.3 The Bidder shall sign the Bid Bond.

B13.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.

B13.2 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.

B13.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B13.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B13.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

B13.3 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.

B14. OPENING OF BIDS AND RELEASE OF INFORMATION

B14.1 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.

B14.1.1 Bidders or their representatives may attend.

B14.1.2 Bids determined by the Manager of Materials, or his/her designate, to not include the bid security specified in B13 will not be read out.

- B14.2 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/>
- B14.3 After award of Contract, the name(s) of the successful Bidder(s) 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/>
- B14.4 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. IRREVOCABLE BID

- B15.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B15.2 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.

B16. WITHDRAWAL OF BIDS

- B16.1 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.
- B16.1.1 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.
- B16.1.2 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 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B16.1.3 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 12 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B16.1.3(b), declare the Bid withdrawn.
- B16.2 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 B15.2 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.

B17. EVALUATION OF BIDS

- B17.1 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 B12 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B7.

B17.2 Further to B17.1(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.

B17.3 Further to B17.1(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.

B17.4 Further to B17.1(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.

B17.4.1 Further to B17.1(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.

B18. AWARD OF CONTRACT

B18.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B18.2 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.

B18.2.1 Without limiting the generality of B18.2, 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.

B18.3 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 B17.

B18.3.1 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 the construction of land drainage sewers and wastewater sewers.

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

- (a) Construction of land drainage sewers ranging in size from 300mm to 750mm diameter, by trenchless and open cut methods
- (b) Renewal of a section of wastewater sewer and services, and abandonment of an existing combined sewer.
- (c) Installation of new connections to existing catch basin and catch basin leads to new Land Drainage Sewer, abandonment of existing catch basin leads to combined sewers, and replacement of deteriorated catch basins.
- (d) Surface restoration and related works.

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is Tetra Tech, represented by:

Gord Steiss C.E.T.
Project Coordinator

Telephone No. 204 954-6800
Email gord.steiss@tetrattech.com

D3.2 At the pre-construction meeting, Mr. Steiss will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D3.3 Bids Submissions must be submitted to the address in B8.8

D4. CONTRACTOR'S SUPERVISOR

D4.1 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.

D5. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

D5.1 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.

D5.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D5.3 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.

D5.4 A Contractor who violates any provision of D5 may be determined to be in breach of Contract.

D6. NOTICES

D6.1 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.

D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3, D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the facsimile number identified in D3.1.

D6.3 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 facsimile number:

The City of Winnipeg
Chief Financial Officer

Facsimile No.: 204 949-1174

D6.4 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

D6.5 Bids Submissions must be submitted to the address in B8.8

D7. FURNISHING OF DOCUMENTS

D7.1 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

D8. AUTHORITY TO CARRY ON BUSINESS

D8.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D9. SAFE WORK PLAN

- D9.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D9.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Safety/default.stm>

D10. INSURANCE

- D10.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability, broad form property damage cover and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
 - (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence.
 - (c) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.
- D10.2 Deductibles shall be borne by the Contractor.
- D10.3 The Contractor shall provide the City Solicitor with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D10.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D11. PERFORMANCE SECURITY

- D11.1 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.
- D11.1.1 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.

D11.2 If the bid security provided in his/her Bid was not a certified cheque or draft pursuant to B13.1(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.

D12. SUBCONTRACTOR LIST

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

D13. DETAILED WORK SCHEDULE

D13.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D13.2 The detailed work schedule shall consist of the following:

- (a) a critical path method (C.P.M.) schedule for the Work; and
 - (b) a Gantt chart for the Work based on the C.P.M. schedule;
- all acceptable to the Contract Administrator.

D13.3 Further to D13.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:

- (a) Commencement Date.
- (b) Installation of Land Drainage Sewers on a street by street basis.
- (c) Surface restoration.
- (d) Substantial Performance.
- (e) Total Performance.

D13.4 Further to D13.2(b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

D13.5 The Contractor shall update the construction schedule prior to each bi-weekly construction site meeting for review and discussion at the meetings.

SCHEDULE OF WORK

D14. COMMENCEMENT

D14.1 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.

D14.2 The Contractor shall not commence any Work on the Site until:

- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D8;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D9;
 - (iv) evidence of the insurance specified in D10;
 - (v) the performance security specified in D11; and

- (vi) the Subcontractor list specified in D12.
- (vii) the detail work schedule specified in D13
- (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.

D14.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.

D15. WORKING DAYS

D15.1 Further to C1.1(gg), the Contract Administrator's determination of whether or not atmospheric and Site conditions are such that a Working Day is deemed to have elapsed may be based at one time on one type of work while at another time a Working Day may be based on another type of work. When more than one type of major work is involved, the quantity of equipment that must be able to work in order to meet the requirements of a Working Day may vary considerably from that specified in the General Conditions.

D15.2 In the event that incidental work is behind schedule which, in the opinion of the Contract Administrator, should have been or could have been carried out by the Contractor in conjunction with or immediately following work of a major type, the City hereby reserves the right to charge Working Days on the incidental work until such time as it is up to schedule.

D15.3 When the major type of work involves restoration of the site to the condition it was prior to rainfall, Working Days shall not be charged.

D15.4 The Contract Administrator will furnish the Contractor with a bi-weekly record for each major type of work and Working Days charged. This record will be provided at regular site meetings.

D16. SPRINGTIME WORKING CONDITIONS

D16.1 Further to D15.1, the operation of machinery for the construction of sewers on existing streets in fair or poor condition during the spring thaw and drying period has the potential to cause considerable damage to these streets. If the Work has commenced and is underway, but in the opinion of the Contract Administrator the working conditions are detrimental to pavements or other infrastructure, the works shall be temporarily stopped and deferred to a later time of year.

D16.2 No Working Days will be charged during the temporary work stoppage period.

D16.3 No demobilization, remobilization or standby equipment costs may be charged due to the temporary work stoppage period.

D16.4 The Contract Administrator will monitor the working conditions during the temporary stoppage and provide notice to the Contractor that site conditions are suitable to resume work. The Contractor shall resume work within seven (7) days of receipt of notice, after which time Working Days shall be charged.

D17. CRITICAL STAGES

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

- (a) Installation of sewers and restoration of pavement and boulevards on Winston Road completed before September 4, 2017.

D18. SUBSTANTIAL PERFORMANCE

D18.1 The Contractor shall achieve Substantial Performance within sixty fifty (60) consecutive Working Days of the commencement of the Work as specified in D14 or by September 29, 2017.

D18.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D18.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D19. TOTAL PERFORMANCE

D19.1 The Contractor shall achieve Total Performance within eighty (75) consecutive Working Days of the commencement of the Work as specified in D14 or by October 27, 2017.

D19.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D19.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D20. LIQUIDATED DAMAGES

D20.1 If the Contractor fails to achieve Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the day fixed herein, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the day fixed herein for same during which such failure continues

- (a) Critical Stages (Winston Road) – two thousand dollars (\$2,000.00);
- (b) Substantial Performance – two thousand dollars (\$2,000.00);
- (c) Total Performance – one thousand dollars (\$1,000.00).

D20.2 The amount specified for liquidated damages in D20.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Critical Stages, Substantial Performance or Total Performance by the day fixed herein for same.

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

D21. SCHEDULED MAINTENANCE

D21.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

- (a) Sodding as specified in CW 3510;
- (b) Tree Planting as specified in E22;
- (c) Further to D16 restoration works that cannot be completed due to working conditions all restoration to be completed by June 1, 2018. as specified in D19,

D21.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

CONTROL OF WORK

D22. JOB MEETINGS

- D22.1 Regular bi-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.
- D22.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

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

- D23.1 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).

D24. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

- D24.1 Further to B12.4, 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 B12.4.

D25. ENVIRONMENTAL PROTECTION PLAN

- D25.1 The Contractor shall plan and implement the Work of this Contract strictly in accordance with the requirements of the Environmental Protection Plan as herein specified.
- D25.2 The Contractor is advised that at least the following Acts, Regulations, and By-laws apply to the Work:
- (a) Federal
 - (i) Canadian Environmental Assessment Act (CEAA), 1992 c.37;
 - (ii) Canadian Environmental Protection Act (CEPA) c.16;
 - (iii) Fisheries Act, 1985 c.F-14;
 - (iv) Transportation of Dangerous Goods Act and Regulations, c.34;
 - (v) Transportation Association of Canada's Transportation Association of Canada National Guide to Erosion and Sediment Control on Roadway Projects, 2005;
 - (vi) Navigable Waters Protection Act; and
 - (vii) Any other applicable Acts, Regulations, and By-laws.
 - (b) Provincial
 - (i) The Dangerous Goods Handling and Transportation Act, D12;
 - (ii) The Endangered Species Act, c.E111;
 - (iii) The Environment Act, c.E125;
 - (iv) The Fire Prevention Act, c.F80;
 - (v) The Heritage Resources Act, c.H39.1;
 - (vi) The Noxious Weeds Act, c.N110;
 - (vii) The Nuisance Act, c.N120;
 - (viii) The Pesticides Regulation, M.R. 94/88R
 - (ix) The Public Health Act, c.P210;

- (x) The Water Protection Act, c.W65;
 - (xi) The Workplace Safety and Health Act W210;
 - (xii) Current applicable Associated Regulations;
 - (xiii) The Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat, Manitoba National Resources, 1996.; and
 - (xiv) Any other applicable Acts, Regulations, and By-laws.
- (c) Municipal
- (i) The City of Winnipeg Neighbourhood Liveability By-law No. 1/2008;
 - (ii) The City of Winnipeg By-law No. 1573/77 and all amendments up to and including 7670/2000;
 - (iii) City of Winnipeg Best Management Practices for Activities In and Around the City's Waterways and Watercourses, City of Winnipeg 2005;
 - (iv) The City of Winnipeg Motor Vehicle Noise Policies and Guidelines;
 - (v) The City of Winnipeg By-law No. 2480/79 and all amendments up to and including 7976/2000; and
 - (vi) Any other applicable Acts, Regulations, and By-laws.

D25.3 The Contractor is advised that the following environmental protection measures apply to the Work.

- (a) Materials Handling and Storage
- (i) Storage on construction materials shall be confined to the defined laydown areas as shown on the Contract Drawings or at a location approved by the Contract Administrator.
 - (ii) Construction materials shall not be deposited or stored on or near watercourses unless written acceptance from the Contract Administrator is received in advance.
 - (iii) Construction materials and debris shall be tied down or secured if severe weather and high wind velocities are forecasted. Work shall be suspended during extreme high wind conditions.
 - (iv) Construction materials and debris shall be prevented from entering watercourses. In the event that materials and/or debris inadvertently enter the land drainage system, the Contractor will be required to remove the material to an appropriate landfill or storage facility and restore the watercourse to its original condition.
- (b) Fuel Handling and Storage
- (i) The Contractor shall obtain all necessary permits from Manitoba Conservation and Water Stewardship 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) In accordance with Section 2.5 (Construction: General Guidelines) of the Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat, (DFO and DNR, 1996), the Contractor shall ensure that any temporary fuel storage areas established for construction of the project are contained by an impermeable dike and are located a minimum distance of 100 metres away from the high water line of the Red River. Dikes shall be designed, constructed, and maintained to retain not less than 100% of the capacity of the total number of containers or 110% of the largest container, whichever is greatest. The dikes shall be constructed of clay or similar impervious material. If this type of material is not available, the dike shall be constructed of locally available material and lined with high density polyethylene

- (HDPE). Furthermore, the fuel storage area(s) shall be secured by a barrier such as a high fence and gate to prevent vandalism.
- (v) The Contractor shall ensure that all fuel storage containers are inspected daily for leaks and spillage.
 - (vi) Products transferred from the fuel storage area(s) to specific Work Sites shall not exceed the daily usage requirement.
 - (vii) 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.
 - (viii) Washing, refuelling, and servicing of machinery and storage of fuel and other materials for the machinery shall take place at least 100 metres from a watercourse to prevent deleterious substances from entering the water.
 - (ix) 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.
 - (x) A sufficient supply of materials, such as absorbent material and plastic oil booms, to clean up minor spills shall be stored nearby on Site. The Contractor shall ensure that additional material can be made available on short notice.
 - (xi) Machinery shall arrive on Site in a clean condition and shall be maintained to be free to fluid leaks.
 - (xii) A sufficient supply of materials, such as absorbent material and plastic oil booms, to clean up minor spills shall be stored nearby on Site. The Contractor shall ensure that additional material can be made available upon short notice. Additionally, appropriate staff on Site shall be trained for proper handling of deleterious liquids (i.e. fuelling) and trained in preventing and cleaning up minor spills.
- (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) The Contractor shall, during and at the completion of construction, clean-up the construction area and 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 require special disposal methods (refer to Section 30.5D).
 - (iv) On Site volumes of sewage and/or septage will be removed on a weekly basis.
 - (v) The Contractor shall ensure sewage, septage, and other liquid wastes generated on Site are handled and disposed of by a certified disposal contractor.
 - (vi) Indiscriminate dumping, littering, or abandonment shall not take place.
 - (vii) No on-Site burning of waste is permitted.
 - (viii) Waste storage areas shall not be located so as to block natural drainage.
 - (ix) Runoff from a waste storage area shall not be allowed to cause siltation of a watercourse.
 - (x) 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.
 - (xi) 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 waste 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 107 metres away from the edge of the water line for normal summer water levels and be diked.
 - (x) Dangerous goods/hazardous waste storage areas shall not be located so as to block natural drainage.
 - (xi) Runoff from a dangerous goods/hazardous waste storage areas 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 Environment, immediately after occurrence of the environmental accident, by calling the 24-hour emergency phone number (204) 945-4888.
 - (iii) The Contractor shall designate a qualified supervisor as the on-Site emergency response coordinator for the project. The emergency response coordinator 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 coordinator:
 - (i) Notify emergency-response coordinator of the accident:
 - ◆ Identify exact location and time of accident;
 - ◆ Indicate injuries, if any;
 - ◆ Request assistance as required by magnitude of accident (Manitoba Environment 24-hour Spill Response Line (204) 945-4888, Police, Fire Department, Ambulance, company backup).
 - (ii) Attend to public safety:
 - ◆ Stop traffic, roadblock/cordon off the immediate danger area;
 - ◆ Eliminate ignition sources;
 - ◆ Initiate evacuation procedures if necessary;
 - (iii) 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; and
 - ◆ Proximity to waterways, sewers, and manholes.

- (iv) 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;
 - ◆ Dyke spill material with dry, inert absorbent 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; and
 - ◆ Resume any effective action to contain, clean up, or stop the flow of the spilled product.
- (v) The emergency response coordinator shall ensure that all environmental accidents involving contaminants shall be documented and reported to Manitoba Environment 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.
- (v) The on-site emergency response coordinator shall contact The Canadian Coast Guard, Selkirk (204) 785-6030, if the spill material reaches and is on or in the Red or Assiniboine Rivers.

**TABLE 1
 SPILLS THAT MUST BE REPORTED TO THE
 MANITOBA CONSERVATION AS ENVIRONMENTAL ACCIDENTS**

Classification	Hazard	Reportable quantity/level
1	Explosives	All
2.1	Compressed Gas (Flammable)	100 L*
2.2	Compressed Gas	100 L*
2.3	Compressed Gas (Toxic)	All
2.4	Compressed Gas (Corrosive)	All
3	Flammable Liquids	100 L
4	Flammable Solids	1 Kg
5.1 PG** I & II	Oxidizer	1 kg or 1 L
PG** III	Oxidizer	50 kg or 50 L
5.2	Organic Peroxide	1 kg or 1 L
6.1 PG** I & II	Acute Toxic	1 kg or 1 L
PG** III	Acute Toxic	5 kg or 5 L
6.2	Infectious	All
7	Radioactive	Any discharge or radiation level exceeding 10 mSv/h at the package surface and 200 uSv/h at 1 m from the package surface
8	Corrosive	5 kg or 5 L
9.1	Miscellaneous (except PCB mixtures)	50 kg
9.2	PCB Mixtures	500 g
9.3	Aquatic Toxic	1 kg or 1 L
9.4	Wastes (chronic toxic)	5 kg or 5 L
* Container capacity (refers to container water capacity)		
** PG = Packing Group(s)		

Source: Environmental Accident Reporting Regulation M.R. 439/87

- (f) Noise and Vibration
 - (i) Noise-generating activities shall be limited to the hours indicated in the City of Winnipeg Noise Bylaw, and the Province of Manitoba Environment Act Licence, unless otherwise accepted in advance by the Contract Administrator.
 - (ii) The Contractor shall be responsible for scheduling Work to avoid potential noise problems and/or employ noise reduction measures to reduce noise to acceptable limits. The Contractor shall also demonstrate to the Contract Administrator that Works to be performed during the night-time period, on Sundays, and Holidays as stated in the Licence shall not exceed the approved limit.
 - (iii) The Contractor shall locate stationary noise generating equipment (i.e. generators) away from sensitive receptors and wildlife areas.
- (g) Dust and Emissions
 - (i) Dust control practices implemented by the Contractor during construction shall include regular street cleaning and dampening of construction access roads and Work areas with water or approved chemicals at an adequate frequency to prevent the creation of dust.
 - (ii) The Contractor shall minimize construction equipment idling times and turn off machinery, when feasible.
 - (iii) Dust control practices implemented by the Contractor during construction will include regular street cleaning and dampening of construction access roads and Work areas with water or approved chemicals at an adequate frequency to prevent the creation of dust.
 - (iv) Only water or chemicals approved by the Contract Administrator shall be used for dust control. The use of waste petroleum or petroleum by-products is not permitted.
 - (v) The Contractor shall ensure that trucks which are used to haul excavated material and backfill material to and from the Work Site utilize tarpaulin covers during transport to prevent material from falling onto the street and creating dust.
 - (vi) Stockpiled soils shall be covered with tarpaulin covers to prevent the creation of dust.
- (h) Erosion Control
 - (i) The Contractor shall develop a sediment control plan prior to beginning construction to the satisfaction of the Contract Administrator.
 - (ii) Exposure of soils shall be kept to a minimum practical amount, acceptable to the Contract Administrator. The cover of trees and undergrowth shall be preserved to the maximum extent possible.
 - (iii) Sediment control fencing, or other such erosion control structures, shall be employed wherever construction activity increases the potential for runoff to carry sediment into a drainage channel or other watercourse. The Contractor shall inspect all such structures daily during heavy construction activity in the areas of the structures and after a heavy rainfall to ensure their continued integrity.
 - (iv) All areas disturbed during construction shall be landscaped and revegetated with native and/or introduced plant species in order to restore and enhance the Site and to protect against soil erosion unless otherwise indicated.
 - (v) The disturbed surface shall be revegetated so as to create a dense root system in order to defend against soil erosion on the right-of-way and any other disturbed areas susceptible to erosion.
 - (vi) The loss of topsoil and the creation of excessive dust by wind during construction shall be prevented by the addition of temporary cover crop, water, or tackifier, if conditions so warrant.
- (i) Runoff Control

- (i) Measures shall be undertaken to ensure that runoff containing suspended soil particles is minimized from entering the land drainage system to the extent possible, to the satisfaction of the Contract Administrator.
- (ii) Areas that are heavily disturbed and vulnerable to erosion or gulying will be diked to redirect surface runoff around the area prior to spring runoff.
- (iii) Construction activities on erodible slopes shall be avoided during spring runoff and heavy rain fall events.
- (iv) Soil and fill shall not be stockpiled on immediate watercourse bank areas.
- (j) Vegetation
 - (i) Vegetation shall not be disturbed without written permission from the Contract Administrator.
 - (ii) The Contractor shall protect plants or trees which may be at risk of accidental damage. Such measures may include protective fencing or signage and shall be approved in advance by the Contract Administrator.
 - (iii) The Contractor will limit the removal of trees and snags (standing dead trees), surface disturbance, and vegetation clearing.
 - (iv) Herbicides and pesticides shall not be used adjacent to any surface watercourses.
 - (v) Trees or shrubs shall not be felled into watercourses.
 - (vi) 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.
 - (vii) Trees damaged during construction activities shall be examined by bonded tree care professionals; viable trees damaged during construction activities shall be pruned according to good practise by bonded tree care professionals.
 - (viii) Damaged trees which are not viable shall be replaced at the expense of the Contractor.
- (k) Landscaping
 - (i) Construction waste (excluding common construction gravel, sand etc.) shall be removed to a minimum depth of 600 mm below final grade in all areas that are to be backfilled with suitable material and revegetated in accordance with Standard City Practice.
 - (ii) The Contractor shall adhere to the landscaping plan for maintenance of initial stage and development stages of the plant community.
- (l) Construction Traffic
 - (i) Workforce parking shall be limited to the areas designated for such as detailed in the Contract Documents, or as otherwise may be directed by the Contract Administrator.
 - (ii) The Contractor shall adhere to the Standard Provisions of the Standard Construction Specifications, and of the Manual of Temporary Traffic Control in Work Areas on City Streets of The City of Winnipeg, Works & Operations Division.
 - (iii) The Contractor's laydown area, construction Site and access road shall be fenced and gated to secure the Site and materials and to discourage pedestrian entrance to construction area and to control any potential hazard to the public, particularly children.
 - (iv) For circumstances where the Contract Administrator has accepted Site access of special equipment or material, the Contractor shall provide adequate flagmen for traffic control in the vicinity of any public buildings.

D26. TRAFFIC CONTROL AND MAINTENANCE OF ACCESS

D26.1 Further to clauses 3.6 and 3.7 of CW 1130:

- (a) Where directed, the Contractor shall construct and maintain temporary asphalt ramps to alleviate vertical pavement obstructions such as manholes and planning drop-offs to the satisfaction of the Contract Administrator. Payment shall be in accordance with CW 3410.
- (b) In accordance with the Manual of Temporary Traffic Control in Work Areas on City Streets, the Contractor ("Agency" in the manual) shall make arrangements with the Traffic Services Branch of the City of Winnipeg to place all temporary regulatory signs. The Contractor shall bear all costs associated with the placement of temporary traffic control devices by the Traffic Services Branch of the City of Winnipeg in connection with the works undertaken by the Contractor.

D26.2 Further to Section 3.7 of CW 1130 of the Site Requirements the Contractor shall be responsible to redirect and maintain traffic with appropriate signing in accordance with The City of Winnipeg "Manual of Temporary Traffic Control in Work Areas on City Streets" at all times during construction as follows:

- (a) Residential Streets including Assiniboine Avenue, Bourkevale Drive, Cavell Drive, Winston Road, Parkside Drive:
 - (i) Maintain one lane of traffic with streets signed as "Road Closed – Local Traffic Only".
 - (ii) Maintain access for School Bus traffic to the Ecole Assiniboine - Winston Drive school bus loop between the hours of 07:30 and 16:30.
 - (iii) Maintain access to the Ecole Assiniboine parking lot on Parkside Drive at all times.
- (b) Other Residential Streets and back lanes:
 - (i) Maintain full access;
- (c) Intersecting streets, private approach and lane access shall be maintained at all times.

D26.3 The Contractor shall be responsible for all signage including but not limited to lane diversions, lane divisions, and general construction barricades, except for that signage identified in the Manual of Temporary Traffic Control in Work Areas on City Streets as being the responsibility of the Public Works Department, Traffic Services Branch. The Contractor will provide the City and Contract Administrator a suitable Traffic Accommodation Strategy covering all the details for traffic management (cones and signage etc.) in each street at least seven (7) business days prior to commencement of any lane closures.

D26.4 Further to Section 3.6 of CW 1130, the Contractor shall maintain safe pedestrian crossing at intersections at all times. If possible, only one pedestrian crossing at an intersection is to be blocked by construction at any one time. If more than one pedestrian crossing is blocked by construction at an intersection at the same time the Contractor shall provide flag persons to safely escort pedestrians across the intersection. The Contractor shall leave pedestrian crossing locations safe and free of equipment that may hamper pedestrians when no construction activities are being performed at a particular crossing location

D26.5 If the Contractor is unable to maintain an existing access to a residence or business, 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 Contract Administrator, prior to disruption of access.

D26.6 Pedestrian and emergency vehicle access must be maintained at all times.

D27. TRAVEL ROUTES, RESTRICTIONS AND CONTRACTOR PARKING

D27.1 Further to CW 1130 clause 3.5, equipment and truck travel routes are limited to the following streets:

- (a) Portage Avenue;
- (b) Winston Drive;
- (c) Ferry Road;

(d) Assiniboine Avenue between Ferry Road and Winston Drive.

D27.2 Equipment and trucks many not travel on:

- (a) Back lanes;
- (b) Residential streets west of Bourkevale Drive.

D27.3 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.

D27.4 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.

D28. PEDESTRIAN SAFETY

D28.1 Further to Section 3.6 of CW 1130 of the Site Requirements, the Contractor shall maintain safe pedestrian crossing at intersections at all times. If possible, only one pedestrian crossing at an intersection is to be blocked by construction at any one time. If more than one pedestrian crossing is blocked by construction at an intersection at the same time the Contractor shall provide flag persons to safely escort pedestrians across the intersection. The Contractor shall leave pedestrian crossing locations safe and free of equipment that may hamper pedestrians when no construction activities are being performed at a particular crossing location.

D29. WATER USED ON CITY OF WINNIPEG PROJECTS

D29.1 Charges incurred for the permits and water meters shall be paid for by the Contractor when taken out. The Contractor shall forward the invoice to the Contract Administrator for reimbursement. The billing for water usage sent to the Contractor shall be forwarded to the Contract Administrator for payment. The Bid Opportunity number shall be noted on each permit.

D30. CONFINED SPACE ENTRY

D30.1 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).

D30.2 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

D31. PAYMENT

D31.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D32. WARRANTY

D32.1 Notwithstanding C13.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if:

- (a) a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.

D32.1.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See D11)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____.)

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

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

BID OPPORTUNITY NO. 269-2017

FERRY ROAD AND RIVERBEND COMBINED SEWER RELIEF CONTRACT 5 EAST STAGE 2

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 D11)**

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 269-2017

FERRY ROAD AND RIVERBEND COMBINED SEWER RELIEF CONTRACT 5 EAST STAGE 2

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/matmgt/Spec/Default.stm>
- E1.2.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.2.3 Further to C2.4(d), Specifications included in the 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>City Drawing No.</u>	<u>Drawing Name/Title</u>
	LD-8165	Cover Sheet
C0526	LD-8166	Assiniboine Avenue – Bourkevale Dr. to 38m East of Cavell Dr.
C0527	LD-8167	Assiniboine Avenue – 38m East of Cavell Dr. to Parkside Dr.
C0528	LD-8168	Bourkevale Drive – Assiniboine Ave. to 90m North of Assiniboine Ave.
C0529	LD-8169	Bourkevale Drive - 90m North of Assiniboine Ave. to Sta 3+00
C0530	LD-8170	Bourkevale Drive– Sta 3+00 to Public Lane
C0531	LD-8171	Cavell Drive - Assiniboine Ave. to 105m North of Assiniboine Ave.
C0532	LD-8172	Cavell Drive - 105m North of Assiniboine Ave. to Sta 3+35
C0533	LD-8173	Cavell Drive – Sta 3+35 to Portage Ave.
C0534	LD-8174	Winston Road - Assiniboine Ave. to 100m North of Assiniboine Ave.
C0535	LD-8175	Winston Road - 100m North of Assiniboine Ave. to Parkside Dr. North Leg

E2. SOILS INVESTIGATION REPORT

- E2.1 Further to C3.1
- E2.1.1 Test Hole logs compiled during the design process are provided in Appendix A.
- E2.1.2 Geotechnical Information is provided to supplement the Contractors evaluation of the Site conditions within the Work area. The information is considered accurate at the locations indicated and at the time of the investigation. However, considerable variations in soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally.
- E2.1.3 Bidders are responsible for any interpretation they place on the supplied information and may undertake additional soils investigations at the worksite as they feel necessary to satisfy themselves. Any test borings made by the Bidder shall be done in accordance with the requirements of the appropriate authority of the City of Winnipeg. Bidders shall notify the Contract Administrator prior to starting any soil boring operation.

GENERAL REQUIREMENTS

E3. OFFICE FACILITIES

- E3.1 The Contractor shall supply office facilities meeting the following requirements:
- E3.1.1 The field office shall be conveniently located near the Site of the Work.

- E3.1.2 The building shall have a minimum floor area of 20 square metres, with window area of 3 square metres and a door entrance with suitable lock satisfactory to the Contract Administrator.
- E3.1.3 The Building shall be suitable for all-weather use. It shall be capable of maintaining a temperature range between 16°C and 25°C.
- E3.1.4 The building shall be supplied with fluorescent lights and electrical wall outlets, add satisfactory to the Consultant.
- E3.1.5 The building shall be supplied with a high speed internet connection.
- E3.1.6 The building shall be furnished with one desk, one meeting table, one drafting table, one filing cabinet and six chairs, all satisfactory to the Contract Administrator.
- E3.1.7 One holding type toilet shall be provided for the exclusive use of the Contract Administrator.
- E3.1.8 The field office shall be cleaned weekly immediately prior to the Job Site Meetings to the satisfaction of the Contract Administrator.
- E3.1.9 The provision of the field office with the aforementioned furnishings and equipment shall also include maintenance and removal of the field office, operating costs and any service installation costs.

E4. SITE FENCING

- E4.1 Temporary 1.8 m high chain link fencing or alternative as approved by the Contract Administrator shall be installed at all laydown areas, open excavations, trench cages, cans and shafts for the project duration.
- E4.2 The Contractor shall be responsible for installation, maintenance of the fences in proper working condition and removal following completion of the works.
- E4.3 No measurement for payment shall be made for this work.

E5. PROTECTION OF EXISTING TREES

- E5.1 The Contractor shall take the following precautionary steps to avoid damage from his construction activities to existing boulevard trees within and adjacent to the limits of construction:
 - E5.1.1 All trees will have a 2.0m radius protective zone calculated from the circumference at the base of the trunk which will remain free of digging, trenching, grade changes, stock piling of materials, parking or vehicles or equipment, or other activities that could cause soil compaction throughout the duration of the Contract. Protective snow fencing complete with installation hardware demarking the protection zone is required.
 - E5.1.2 In addition to fencing, mature tree trunks shall be strapped with 25 x 150 x 2400 (1" x 6" x 8') wood planks to protect against bark damage. Smaller trees shall be similarly protected using appropriately sized wood planks.
 - E5.1.3 Operation of equipment within the drip line of trees shall be kept to the minimum required to perform the work. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the drip lines of trees. The drip line of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches
 - E5.1.4 Construction operations shall be conducted so that they do not cause flooding or sediment deposition on areas where trees are located.
 - E5.1.5 Work on Site shall be carried out in such a manner so as to minimize damage to existing tree branches.

- E5.1.6 Repair, replace and maintain tree protection material during construction of the Work.
- E5.1.7 Remove snow fencing and strapping material without harming trees as soon as the construction and restoration work is complete.
- E5.2 Obtain approval from the Contract Administrator to excavate within 2.0 meters of a tree.
- E5.3 Excavations shall be carried out in such a manner so as to minimize damage to existing root systems. Roots over 50mm in diameter which must be cut to facilitate an excavation shall be neatly pruned prior to excavation and coated with an appropriate wound dressing to prevent infection. Prune exposed roots with equipment such as trenchers, chain saws, root cutters or other methods acceptable to the Contract Administrator in a manner that will leave a neat, clean root end. Keep exposed roots in excavations and trenches moist or shaded.
- E5.4 Take precautions to ensure tree limbs overhanging the Site are not damaged by construction equipment. Consult the Forestry Branch on pruning of overhanging or damaged limbs and branches and other unanticipated problems with trees during construction of the Works.
- E5.5 All damage to existing trees caused by the Contractor's activities shall be repaired as required by the Contract Administrator and the Forestry Branch. Damages must be repaired by an individual with a Manitoba Arborist license or by the Forestry Branch.
- E5.6 American elm trees are 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.
- E5.7 The Forestry Branch will remove and replace any trees deemed to have died or that are dying due to damage from carelessness during construction. Removal and replacement costs will be determined by size and market price. The market price will be a comparable transplantable tree of the same or different species or may be the appraised value of the existing tree, as determined by an evaluation procedure presently used by Forestry Branch in conjunction with City Claims Branch. The evaluation procedure is in accordance with current International Society of Arboriculture evaluation procedure.
- E5.8 Measurement and Payment
- E5.8.1 Protection of existing trees, repair of trees and pruning of damaged limbs will not be measured for payment and will be included with Underground or Surface Works. Removal and replacement of existing trees by the Forestry Branch deemed to have died or that are dying due to damage from carelessness during construction will be at the contractor's cost and will be invoiced or deducted from any payments owing.

E6. TREE REMOVAL

- E6.1 This Specification shall cover the removal of living or dead trees designated for removal by the Contract Administrator.
- E6.2 Construction Methods
- E6.2.1 Before commencement of any work, the Contractor shall consult with the Contract Administrator as to which trees and/ or shrubs shall be removed. All other trees and shrubs shall be protected against damage from all construction activity in accordance with E5.
- E6.2.2 Trees to be removed are to be felled so as to land within the limits of the works. The Contractor shall take all precautions to prevent damage to traffic, structures, pole lines, adjacent property and to trees and shrubs designated to be saved, and he shall be liable for any damages occurring in the performance of this work.
- E6.2.3 The Contractor shall cut down all trees and shrubs designated for removal and grub out all stumps and roots.

E6.2.4 The Contractor shall load and haul all trees, stumps, roots, logs, brush, rubbish and all other surface litter from the site and dispose of these materials at dumps located by the Contractor and approved by the Contract Administrator.

E6.3 Measurement and Payment

E6.3.1 Measurement for payment for tree removal shall be based on the Diameter measured 600 mm above the ground level for trees with single trunks. On trees with double or multiple trunks, the trunk diameter will be measured 600 mm above the trunk junction. Removal of live trees or standing deadfall will be paid for at the Contract Unit Price (Provisional Items) for "Tree Removal" differentiated by trunk diameter, measured as specified herein, which price shall be payment in full for removing and disposing all tree materials and for completing all operations herein described and all other items incidental to the work included in this Specification.

E7. REFUSE AND RECYCLING COLLECTION

E7.1 While access to refuse and/or recycling collection vehicles is restricted, on collection day(s) the Contractor shall move all of the affected property owners refuse and/or recycling materials to a nearby common area, prior to an established time, in accordance with to permit the normal collection vehicles to collect the materials. Immediately following collection, the Contractor shall return receptacles to the addresses marked on the receptacles.

E7.2 The Refuse and Recycling Collection Schedule is as follows:

- (a) Assiniboine Avenue, Bourkevale Drive, Cavell Drive, Winston Road and Parkside Drive:
 - (i) Collection Day: Monday A
 - (ii) Collection Time: 07:00 – 18:00
 - (iii) Collection Location: Back lane where available, front street for south side of Assiniboine Avenue and east side of Parkside Drive east leg.

E8. EXPLORATION OF EXISTING UTILITIES AND SERVICES

E8.1 Prior to construction, the Contractor shall verify the elevations of buried utilities including but not limited to sewers, watermains, large diameter fire service watermains, gas mains, power and telecommunications ducts and conduits, traffic signal conduits, street lighting and other communication cables at proposed crossing locations in accordance with CW 1120 Clause 3.3.

E8.2 Exploration of buried infrastructure should be undertaken a minimum of 5 business days prior to any construction to determine if an alternate vertical or horizontal alignment of the proposed sewer may be beneficial to minimize conflicts with the existing utilities or services.

E8.3 The Contractor shall arrange for all required utility locations, safety watches and other required notifications.

E8.4 The Contractor shall provide the Contract Administrator with a minimum of 24 hours advanced notice prior to conducting utility exposures.

E8.5 Measurement and Payment

E8.5.1 Exploration of utility locations and elevations will be incidental to the Contract.

E9. MAINTAIN EXISTING SEWER FLOWS, FLOW CONTROL, DIVERSIONS AND BYPASS PUMPING

E9.1 Maintaining Existing Sewer Flows, Flow Control, Diversions and Bypass Pumping required to complete the Works in the Contract shall be incidental to the Contract in accordance with CW 2130 Clause 4.16.

E10. SEWER CONSTRUCTION

- E10.1 Pipe Classes indicated on drawings represent long term design conditions and loading. The Contractor shall verify that the pipe class, strength, reinforcing and joint design are suitable for his proposed installation methods and procedures. Design of any pipe to suit installation methods is the responsibility of the Contractor.
- E10.2 Pipe Sizes indicated on drawings are based on the most efficient hydraulic design. Details of any requested pipe size revisions shall be submitted to the Contract Administrator for review, hydraulic analysis and approval. The Contract Administrator will consider other sizes for construction provided that:
- (a) There is no increase in cost to the City.
 - (b) There is no reduction in the level of service provided by the sewer system.
 - (c) There is no change to the Contract duration.
- E10.3 Pipe material for 450mm to 600mm diameter to be City of Winnipeg approved products for underground use. Both Polyvinyl Chloride SDR35 or Reinforced Concrete to ASTM C76 with strength class type indicated on drawings are acceptable. Note that PVC sewers will be required to undergo a repeat sewer inspection with mandrel testing at the end of the warranty period.
- E10.4 Sewers indicated for open trench construction are based on the available test hole information. More information will be discovered during the excavation of the trench, and if conditions appear to be favourable for trenchless installation then this method would be accepted provided:
- (a) There is no increase in overall cost to the City.
 - (b) There is no change to the Contract duration.

E11. EXCAVATION, BEDDING AND BACKFILL

- E11.1 Disposal of Unsuitable or Surplus Excavated Material
- E11.1.1 If the Contractor has not arranged for an approved disposal site, the City shall provide an optional disposal site for all surplus clean clay from the construction site. The material is not to include any refuse, concrete, metals, wood, organics, construction waste or any other deleterious materials. Any surplus soil material not meeting these requirements shall not be considered clean clay and shall not be permitted.
- E11.1.2 The disposal location provided by the City will be at the Brady Road Landfill Site. The Contract Administrator will make arrangements with Ed Rowinski (204-794-4590) at the landfill site for the disposal of the surplus soil material.
- E11.1.3 There will be no tipping fees charged at the landfill sites to the Contractor for the disposal of surplus soil material meeting the requirements of clean clay as specified.
- E11.1.4 Surplus material not meeting the requirements of clean clay may be disposed of at the Brady Road Landfill Site although tipping fees will be charged.
- E11.1.5 There shall be no measurement of surplus soil material disposed of at any disposal site. No additional payment will be made for disposal of surplus soil materials. It shall be considered incidental to the cost of the Work.
- E11.2 Foundation and Bedding
- E11.2.1 Class A Bedding shall be used in all shafts with concrete pipe with Type 3 material for remainder of initial backfill.
- E11.2.2 Class B Bedding with Type 3 material shall be used in all shafts with PVC piping.
- E11.2.3 Class B Bedding with Sand material shall be used in all pipe installations in an Open Trench.

E11.3 Backfilling and Surface Restoration

E11.3.1 Initial backfilling of all excavations shall be carried out by the following methods:

- (a) Class 3 backfill shall be used at all shafts for Trenchless installations.
- (b) Class 3 backfill shall be used at Open Trenches. Class 2 backfill would also be acceptable but shall be undertaken at no additional cost or as indicated in E15. Class 2 and/or 3 backfill shall be placed and compacted in lifts not exceeding 600 mm.
- (c) The Contractor shall have personnel available for immediate repairs of settlement at shaft locations from the start of construction until final restoration is complete.

E11.3.2 Final surface restoration shall be as follows:

- (a) The excavation shall be jetted and tamped twice, as per CW 2030.
- (b) After the second jetting operation is completed, the excavation is to be subcut to 1.5 m below final surface elevation and re-compacted in 300 mm lifts to the subgrade level using vibratory compaction methods in accordance with CW 2030 Class 2 Backfill.
- (c) Pavement shall be completed in accordance with CW 3310 or CW 3410, depending on type of existing pavement surface.
- (d) Boulevard restoration shall be completed in accordance with CW 3510.

E11.3.3 Further to CW 2130:

- (a) Trenchless Installations and Catch Basin connections: All costs associated with backfilling and surface restorations shall be incidental to the Work.
- (b) Open Trench Installation: Backfilling of trenches shall be incidental to the Work, but final surface restoration including the construction of Partial Slab Patches, Curb, Sidewalk and boulevard topsoil and sod will be paid for at the Contract Unit Prices for these items of work.

E12. TRENCHLESS EXCAVATION

E12.1 Further to Clause 3.4.1 of CW 2130, all sewers to be installed by trenchless methods except as explicitly noted on the Drawings. Where necessary tie-ins to existing sewers may be done using open cut methods.

E12.2 Selection of excavation equipment for installation of sewers by trenchless methods shall be the responsibility of the Contractor and shall be made based on expected soil conditions as detailed on the test hole logs. Trenchless sewer installation may be by any suitable methods including horizontal earth coring, pipe jacking, horizontal directional drilling or by tunnel boring that will meet the design objective and not conflict with Traffic Management.

E12.3 The Contractor shall make allowances in the choice of equipment to account for reasonable and minor deviations in ground conditions and shall have contingency plans for the removal of boulders and other minor changes in ground conditions.

E12.4 Methods for dealing with and paying for Trenchless Excavation Obstructions are described in E13.

E12.4.1 The notice shall provide details of the change in subsurface soil conditions or obstructions encountered, any proposed construction procedure revision that the Contractor intends to undertake, as well as any other relevant supporting information.

E12.4.2 The Contract Administrator shall review the notice as expeditiously as possible to assess whether the change in conditions and revised construction procedures amount to a Change in Work.

E13. TRENCHLESS EXCAVATION OBSTRUCTIONS

E13.1 Contingency plans for removal of the obstructions encountered in trenchless excavations must be approved by the Contract Administrator as follows:

- E13.1.1 Drill or excavate a shaft at the location of the obstruction, drilling, splitting or breaking the obstruction into smaller components if required, and removal of the obstruction.
- E13.1.2 Remove the obstruction through the jacking head or core hole following drilling, splitting or breaking the obstruction into smaller components as required.
- E13.1.3 Other removal methods

E13.2 Where the Contract Administrator deems that the obstruction encountered represents a Change in Work, it shall be valued in accordance with C7.4 (c) and the following supplemental requirements:

- E13.2.1 The first four (4) hours of handling obstructions for each occurrence shall be the responsibility of the Contractor.
- E13.2.2 Equipment rates for equipment required in support of the obstruction removal shall be compensated at the MHCA rental rates. Equipment not listed in the MHCA rate schedule shall have their rates established by the Contractor prior to the commencement of Work in accordance with the procedure documented in the MHCA rental guide for establishing equipment rental rates and shall be subject to the approval of the Contract Administrator.
- E13.2.3 Standby equipment that cannot reasonably be deployed elsewhere during the duration of the obstruction removal shall be compensated at 50% of its established rate as noted in E13.2.2 above.
- E13.2.4 Labour rates and material costs associated with obstruction removal shall be compensated as per C:7.4 (c) and C7.4.1 with the provision that any removal and replacement of pavements shall be compensated at the Contract Unit Price for such Work.

E13.3 Measurement and Payment

E13.3.1 An Allowance has been provided in the Contract Unit Prices (Provisional Items) to cover costs associated with removal of trenchless excavation obstructions.

E14. STREET CONDITIONS AND PERMANENT PAVEMENT RESTORATION

E14.1 The Contractor shall follow the City of Winnipeg Street By-law No. 1481/77 and current revision of the City of Winnipeg "Street Cuts Manual" found at <http://winnipeg.ca/publicworks/permitsApprovals/pdf/Street-Cuts-Manual-2016.pdf> and for all pavement restoration unless otherwise shown on the drawing or specifications or as directed by the Contract Administrator.

E14.2 The street material and condition within the project work area are classified as follows:

Street	Pavement Type	Condition
Assiniboine Ave. – Bourkevale to Winston	Concrete	Fair
Assiniboine Ave. – Winston to Parkside	Asphalt over Concrete	Poor
Parkside Dr. – near Assiniboine	Asphalt over Concrete	Good
Bourkevale Dr.	Concrete	Good
Cavell Dr.	Concrete	Fair
Winston Rd.	Concrete	Fair

- E14.3 Permanent pavement restoration shall be in accordance with the City of Winnipeg Street Cuts Manual (2016) pp. 17 & 18 "Pavement Restoration Guidelines".
- E14.4 Notwithstanding the restoration requirements identified in E14.3 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.
- (a) 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.
- E14.5 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 time.
- E14.6 Measurement and Payment
- E14.6.1 Pavement restoration for trenchless sewer installation shall be incidental to the works.
- E14.6.2 Pavement restoration for open cut sewer installation areas indicated on the drawings will be at the Contract Unit Price per square meter for "Full Slab Replacement (Open Cut Areas) - 150mm Concrete Pavement".
- E14.6.3 Curb replacement in conjunction with pavement restoration for open cut sewer installation as indicated on the drawings will be at the Contract Unit Price per lineal meter for "Concrete Curb Installation (Open Cut Areas)" by each time of curb being replaced.
- E14.6.4 Additional pavement spot repairs to repair damage from the Geotechnical Investigation program will be undertaken at the Contract Unit Price (Provisional Items) per square meter for "Partial Slab Patches - 150mm Concrete Pavement".

E15. TEMPORARY SURFACE RESTORATIONS

- E15.1 Further to clause 3.3 of CW 1130, where permanent surface restorations cannot be made due to cold weather or other reasons, the Contractor shall temporarily restore surfaces in accordance with current revision of the City of Winnipeg "Street Cuts Manual" found at <http://winnipeg.ca/publicworks/permitsApprovals/pdf/Street-Cuts-Manual-2016.pdf> and summarized as follows:
- E15.1.1 Backfill and level boulevards and grassed areas to match existing surface elevations and reduce to potential for trip hazards,
- E15.1.2 Cap excavations in low volume approaches and back lanes with 300 mm of compacted crushed granular material and topped with either 75 mm of hot mix asphalt or 150 mm of non-reinforced concrete meeting the requirements of CW 3310 Clause 6.6 "Concrete for Temporary Restoration of Utility Pavement Cuts" to match the existing pavement grade.
- E15.1.3 Cap excavations on Local Streets, Regional streets and high volume approaches in accordance with the "Street Cuts Manual" Sacrificial concrete pavement constructed of 600 mm of Cement Stabilized Backfill to CW 2160 and a 150 mm of non-reinforced concrete meeting the requirements of CW 3310 Clause 6.6 "Concrete for Temporary Restoration of Utility Pavement Cuts".
- E15.1.4 Cap excavations in sidewalk pavement with 100 mm of compacted crushed granular material and 50 mm of cold mix asphalt to match the existing sidewalk grade.
- E15.1.5 Insulate temporary concrete where required during 24 hr curing period,
- E15.1.6 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.
- E15.1.7 Remove all temporary pavements prior to permanent restorations.
- E15.2 Backfill under temporary surface restorations to be as follows:

- E15.2.1 Use Class 2 back fill in excavation under temporary street pavements and sidewalks where Class 3 backfill cannot be jetted and flooded due to cold weather.
- E15.2.2 Class 2 backfill may be compacted in 500 mm lifts where backhoe operated pneumatic plate compactors are used.
- E15.2.3 Jet and flood Class 2, Class 3 and Class 5 backfilled excavations in spring when ground is not frozen prior to permanent restoration.
- E15.2.4 Any Sacrificial Concrete Pavement, Cement Stabilized Backfill, or temporary cold mix asphalt shall be completely removed and the remaining backfill shall be flooded, tamped and topped up prior to performing permanent pavement restorations in accordance with E19.
- E15.3 All temporary pavement restorations must be completed and continuously maintained until final surface restoration can be completed.
- E15.4 Further to CW 3310, all concrete used for temporary pavement restoration shall have a minimum compressive strength of 20 MPa 24 hours after placement.
- E15.5 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. All costs associated with the maintenance or reconstruction of temporary pavement incurred by the City shall be deducted from future payments to the Contractor.
- E15.6 Measurement and Payment
 - E15.6.1 Temporary surface restorations as described above except for sacrificial concrete pavements shall be incidental to the cost of sewer construction.
 - E15.6.2 No extra payment will be made for the installation of Class 2 backfill under temporary street pavements or sidewalks.
 - E15.6.3 Sacrificial concrete pavement shall be measured on an area basis and paid for at the Contract Unit Price (Provisional Items) per square meter for "150mm Sacrificial Concrete Pavement".
 - E15.6.4 Cement Stabilized Backfill used as underlay for Sacrificial Concrete Pavement shall be measured on a volume basis and paid for at the Contract Unit Price (Provisional Items) per cubic meter for "Cement Stabilized Backfill".

E16. PRIVATE DRIVEWAY, SIDEWALK AND WALKWAY RENEWALS

- E16.1 Removal and replacement of concrete driveways in accordance with CW 3234 and CW 3310. Concrete slab renewals for driveways shall be measured on an area basis and paid for at the Contract Unit Price (Provisional Items) for "Partial Slab Patches – 150mm Reinforced Concrete Pavement".
- E16.2 Removal and replacement of concrete sidewalk or private walkway approaches in accordance with CW 3110 and CW 3325. Miscellaneous concrete slab renewals for sidewalk shall be measured on an area basis and paid for at the Contract Unit Price (Provisional Items) for "Replacement of Existing Private Sidewalks - Cast in Place Concrete".
- E16.3 Removal and replacement of paving stone or concrete sidewalk block walkways in accordance with CW 3333 shall be measured on an area basis and paid for at the Contract Unit Price (Provisional Items) for "Replacement of Existing Private Sidewalks – Interlocking Paving Stone" or "Replacement of Existing Private Sidewalks – Sidewalk Blocks".

E17. BOULEVARD RESTORATION FOLLOWING GAS MAIN RELOCATION

E17.1 Restoration of the Winston Road Boulevard following construction in accordance with CW 3510 to repair damage due to sewer construction and gas main relocation by others shall be measured on an area basis and paid for at the Contract Unit Price for "Topsoil and Sodding".

E18. EXISTING DRAINAGE INLET CLEANING AND INSPECTION

E18.1 Existing Catch Basins and Catch Pits as identified herein shall be cleaned prior to inspection in accordance with CW 2140.

E18.2 Existing Catch Basins and Catch Pits to be connected to the new land drainage sewer system shall be cleaned prior to visual inspection in order to determine if the units need to be replaced or rehabilitated. This work should be performed on a street by street basis, and must be completed before replacement units are ordered.

E18.3 If a Catch Basin or Catch Pit must be cleaned in order to assess its condition, the cleaning will be paid for even if the unit is found to be deteriorated and requires replacement.

E18.4 Measurement and Payment

E18.4.1 This work shall be measured on a unit basis for each Catch Basin or Curb and Gutter Inlet cleaned and paid for at the Contract Unit Price for "Catch Basin / Catch Pit Cleaning".

E19. DEFLECTION TESTING OF PVC SEWERS

E19.1 This specification amends Clause 3.22 of CW 2130 regarding the waiting time for deflection testing of PVC sewers following pipe installation.

E19.2 Deflection testing of PVC mainline sewers shall be undertaken as follows:

E19.2.1 Initial deflection testing for PVC mainline sewers shall not be performed sooner than 30 days following the installation of pipe and backfilling of shafts.

E19.2.2 Repeat deflection testing of PVC mainline sewers shall be performed at the end of the warranty period.

E19.3 Deflection testing is not required for catch basin leads.

E19.4 Measurement and Payment

E19.4.1 Measurement and payment for initial and repeat deflection testing will not be measured and paid separately, but will be paid for as part of sewer inspection.

E20. VIDEO INSPECTION OF SEWERS

E20.1 Sewer and manhole inspection in accordance with CW 2145 will be conducted as follows:

E20.1.1 New mainline land drainage sewers

E20.1.2 Existing mainline combined sewers where catch basin leads have been abandoned in accordance with CW 2145.

E20.1.3 New catch basin leads of 15 m length or longer, or as directed by the Contract Administrator based on complicated configuration or from a private catch basin.

E20.1.4 Extended catch basin leads that result in a total lead length of 15 m or longer.

E20.2 Measurement and payment

E20.2.1 Measurement and payment for sewer and manhole inspection including defect coding will be in accordance with CW 2145 at the Contract Unit Price for "Sewer Inspection" for each nominal diameter of sewer inspected.

- E20.2.2 Cleaning of existing sewers and manholes will be required as part of inspection, and this will be measured and paid for in accordance with CW 2140 at the Contract Unit Price for "Sewer Cleaning" for each nominal diameter of sewer cleaned.

E21. CATCH BASIN RECONNECTIONS AND RENEWALS

- E21.1 The design objective of the project is provide combined sewer relief through the installation of new land drainage sewers, and disconnection of catch basins and drainage inlets from the combined sewer system. The drawings and Form B quantities indicate a reasonable scenario where about half of the catch basins and curb and gutter inlets are to be replaced. However, if existing catch basins and curb and gutter inlets are in good shape and generally compliant with current City of Winnipeg standards, or require only minor upgrading such as replacement of a damaged frame or cover, or replacement of a missing debris hood, then the existing catch basin or curb and gutter inlet will be repaired as necessary and reconnected to the new land drainage sewer system.
- E21.2 The condition assessment of existing catch basins and curb and gutter inlets will occur following the commencement of construction. Since the reconnection of catch basins is not typically done until after the mainline pipe and manholes have been installed, the Contractor is advised not to pre-order catch basins for this project until this assessment has been completed.
- E21.3 Measurement and Payment
- E21.3.1 Reconnections of existing catch basins to the new land drainage sewer and miscellaneous repairs such as the replacement of broken riser rings and replacement of damaged frames and covers will be measured and paid for at the Contract Unit Prices (Provisional Items) for these various items.

E22. REPAIRS TO EXISTING SEWER OR WATER SERVICES

- E22.1 Repair or replacement of existing sewer or water services that conflict with the proposed sewer installation may be necessary. To minimize the potential for damaging existing services, shafts should be located near service locations such that the service locations can be found by exploratory digging. The Contractor shall attempt to adjust the water service pipe without cutting into the pipe to reroute it around the new sewer.
- E22.2 The Contract Administrator must be notified immediately if a sewer or water service is damaged by the work, so that the home or building owner may be contacted and arrangements made for the provision of temporary servicing.
- E22.3 The regrading or repair of existing 100 mm or 150 mm sewer services shall be done in accordance with CW 2130 and CW 2110.
- E22.4 The repair of damaged water service pipes shall be undertaken in accordance with CW 2110. The repair shall comply with the standard City of Winnipeg practice of allowing only one union or per service, and fully renewing the remainder of the service to the main or to the curb stop (whichever is shorter). Existing corporation stops, curb stops and boxes may be reused if in good condition and if compatible with the service pipe.
- E22.5 Relocation of existing water services encountered but not damaged by construction shall be incidental to the construction of sewers.
- E22.6 The Contract Administrator must be notified if any of the water service piping encountered is not copper. If lead water services are encountered, these should be fully renewed with minimum 19 mm copper water services, including new saddle and corporation stop at the main, new curb stop and box. Connect new copper water service to existing lead service with a suitable flange copper to lead adapter.
- E22.7 Measurement and Payment

- E22.7.1 Regrading and repair of existing 100 mm or 150 mm sewer services impacted by land drainage construction shall be measured in accordance with CW 2110. Regrading and repair of sewer services up to 1.5m long will be measured and paid for on a unit basis at the Contract Unit Price (Provisional Items) for “Regrading of Existing Sewer Service – Up to 1.5 m long”.
- E22.7.2 Regrading and repair of sewer services longer than 1.5m will be measured on a lineal meter basis for the total length of replacement and paid for at the Contract Unit Price (Provisional Items) for “Regrading of Existing Sewer Service – Longer than 1.5 m”.
- E22.7.3 Renewal of 150 mm sewer services to connect to new wastewater sewers shall be measured on a lineal meter basis for the total length of replacement and paid for at the Contract Unit Price for “Sewer Services” and include all couplings, tees and saddles required to complete the installation
- E22.7.4 Connection of the existing sewer service to the new sewer service where the service is being relocated to new wastewater sewers shall be measured on a unit basis for each service reconnected and paid for at the Contract Unit Price for “Connect Existing Sewer Service to New Sewer”
- E22.7.5 Replacement of water services including connections shall be measured and paid for on a lineal meter basis for size classification of 19 mm, 25 mm, 38 mm and 50 mm.
- E22.7.6 Supply and installation of new corporation stops including saddles shall be measured and paid on a unit basis for the same size classifications identified for water service piping.
- E22.7.7 Supply and installation of new curb stops and boxes shall be measured and paid on a unit basis for the same size classifications identified for water service piping.
- E22.7.8 Connecting to existing water services will be included in the installation of water service piping.

E23. BOARD INSULATION

E23.1 Description

- E23.1.1 This specification shall cover the installation of board insulation for watermain freezing prevention, in addition to CW 2110 clause 3.12 and SD-018.

E23.2 Materials

- E23.2.1 Moisture resistant closed cell extruded polystyrene insulation board designed for direct burial underground.

- (a) Total insulation thickness as specified on drawings.
- (b) Minimum compressive strength 410 kPa (60 psi) to ASTM D1621.

- E23.2.2 Adhesive (for polystyrene insulation): to CGSB 71-GP-24.

- (a) Type: One part Polyurethane.
- (b) VOC emission: 0.

E23.3 Construction Methods

- E23.3.1 Supply and install rigid insulation at locations identified on the Drawings or where directed by the Contract Administrator. Construct as noted on Detail Drawings.

- E23.3.2 Insulation to be installed in an inverted U fashion in accordance with SD-018 as follows:

- (a) Maintain a minimum width of 1200 mm for horizontal insulation.
- (b) Minimum of 300 mm well packed specified fill between top of the pipe and bottom of horizontal insulation.

- (c) Vertical insulation on either side must extend a minimum of 150 mm below bottom of pipe. Hand pack specified fill material on either side of vertical insulation sections to ensure no warping or misalignment of vertical insulation sections.
- (d) Apply horizontal section after Contract Administrator has inspected and approved installation of vertical insulation legs.

E23.3.3 Horizontal insulation under roadway excavation or below the bottom of catch basin barrels overcrossing watermain or water service pipes in accordance with SD-018 and installed as follows:

- (a) Place and compact the bedding material to provide a minimum 300 mm cover over the pipe.
- (b) Place two layers of insulation to attain a thickness of 100 mm for the full trench width. Stagger joints.
- (c) Place 150 mm of sand over the insulation and a minimum of 200 mm hand placed and compacted backfill prior to final backfill or installation of catch basin.

E23.3.4 Manhole or Catch basin sidewall insulation

- (a) Install insulation board on exterior of manhole or catch basin structures with adhesive, extending to depth indicated below finished grade as indicated on drawings.

E23.3.5 Governed by the compaction equipment to be used, ensure that there is adequate cover on the insulation to prevent damage during compaction or subsequent construction operations.

E23.4 Measurement and Payment

- (a) Pipe or pipe trench insulation installed in an inverted U configuration or in a wide horizontal configuration will be measured on an area basis based on the plan view area in square metres. The vertical sides of inverted U insulation will not be measured. Construction of insulation will be paid for at the Provisional Contract Unit Price for "Board Insulation".
- (b) Manhole or catch basin sidewall insulation will be measured on an area basis for each manhole or catch basin insulated based on the plan view extent of the insulation around the manhole or catch basin barrel multiplied by the insulation depth. Construction of manhole or catch basin sidewall insulation will be paid for at the Provisional Contract Unit Price for "Board Insulation".

E24. BOULEVARD AND YARD TREES

E24.1 Description

E24.1.1 General

- (a) This specification covers the supply and installation of nursery-grown trees and shrubs plantings in areas to be determined by the Contract Administrator, including preparation, digging, transport and planting, and maintenance.

E24.1.2 Nomenclature

- (a) Nomenclature of specified nursery stock shall conform to the International Code of Nomenclature for Cultivated Plants and shall be in accordance with the approved scientific names given in the latest edition of Standardized Plant Names. The names of varieties not named therein are generally in conformity with the names accepted in the nursery trade.

E24.1.3 Source Quality Control

- (a) All nursery stock supplied shall be nursery grown and of species and sizes as indicated on the Drawings. Nursery stock shall be No. 1 Grade material in accordance with the current edition of Landscape Canada's (CNTA) "Guide Specifications for Nursery Stock".

- (b) Any nursery stock dug from native stands, wood lots, orchards, or neglected nurseries, which have not received proper cultural maintenance, shall be designated as "collected plants". Obtain permission of the Contract Administrator to use collected plants.
- (c) The Contractor shall notify Contract Administrator of source of plant material at least seven (7) days in advance of shipment.
- (d) Acceptance of plant material at source does not prevent rejection of same plant material on site prior to or after planting operations.
- (e) Imported plant material must be accompanied with necessary permits and import licenses. Conform to federal and provincial regulations.

E24.1.4 Shipment and Pre-Planting Care

- (a) Coordinate shipping of plants and excavation of holes to ensure minimum time lapse between digging and planting.
- (b) Tie branches of trees and shrubs securely and protect plant material against abrasion, exposure and extreme temperature change during transit. Avoid binding of planting stock with rope or wire, which would damage bark, break branches or destroy natural shape of plant. Give full support to root balls, especially of large trees, during lifting.
- (c) Cover plant foliage with tarpaulin, and protect bare roots by means of dampened straw, peat, saw dust or other acceptable material to prevent loss of moisture during transit and storage.
- (d) Remove broken and damaged roots with sharp pruning shears. Make clean cut and cover cuts over 50 mm diameter with wound dressing.
- (e) Keep roots moist and protect from sun and wind. Heel-in trees and shrubs that cannot be planted immediately in shaded areas; water well.

E24.1.5 Replacement

- (a) During the first year following completion of planting operations, remove from site any plants that have died or failed to grow satisfactorily, as determined by the Contract Administrator. As an example, plant material installed in 2017 that has failed to grow satisfactorily and has not been replaced by October 31, 2017, would be required to be replaced in the spring of 2018.

E24.2 Materials

E24.2.1 Water

- (a) Water shall be potable and free of minerals that may be detrimental to plant growth.

E24.2.2 Fertilizer

- (a) Fertilizer shall be slow release organic. Fertilizer shall contain N-P-K in ratio as recommended by soil test results from an approved agricultural soil testing laboratory.

E24.2.3 Root Ball Burlap

- (a) Root ball burlap shall be 150 g Hessian burlap.

E24.2.4 Anti-desiccant

- (a) Anti-desiccant shall be wax-like emulsion to provide film over plant surfaces reducing evaporation but permeable enough to permit transpiration.

E24.2.5 Wound Dressing

- (a) Wound dressing shall be horticultural accepted non-toxic, non-hardening emulsion.

E24.2.6 Plant Material

- (a) All plant material specified for this project shall be containerized and/or ball and burlap nursery stock. All plants shall be from the Winnipeg area.

- (b) Comply with latest edition of the “Guide Specification for Nursery Stock”, produced by Landscape Canada (CNTA), referring to quality, size and development of nursery grown plant material and root balls.
- (c) Nursery stock shall be No. 1 grade trees, shrubs and vines.
- (d) All plant material shall be measured when branches are in their natural position. Height and spread dimensions specified in the Plant List in this specification, refer to the main body of the plant, and not from branch tip to root base or from branch tip to branch tip. Where trees are measured by calliper (cal.), reference is made to the diameter of the trunk measured at 300 mm above ground as the tree stands properly planted in the nursery.
- (e) Material sources are to be approved by Contract Administrator prior to ordering. The Contractor shall provide all of the necessary nursery certificates to ensure that the plant species comply with this specification.
- (f) All trees shall have one, only, sturdy, reasonably straight and vertical trunk, and a well-balanced crown with fully developed leader, unless designated “multi-stem”. All evergreens shall be symmetrically grown and branched from ground level, up.
- (g) Use trees and shrubs with structurally sound, strong fibrous root systems, and free of disease, insects, defects or injuries, including rodent damage, sun scald, frost cracks, abrasions or scars to the bark. Plants must have been root pruned regularly, but not later than one growing season prior to arrival on site.
- (h) All parts of the plants shall be moist and show live, green cambium tissue when cut. (i) At least one (1) plant of each variety supplied shall bear a tag showing both the botanical and common name of the plant.

E24.2.7

Additional Plant Material Qualifications:

- (a) Imported Plant Material
 - (i) Plant material obtained from areas with milder climatic conditions from those of site acceptable only when moved to site prior to the breaking of buds in their original location and heeled-in in a protected area or placed in cold storage until conditions suitable for planting. Obtain Contract Administrator’s approval to use imported plant material.
- (b) Cold Storage
 - (i) Approval required for plant material that has been held in cold storage.
- (c) Container-Grown Stock
 - (i) Acceptable if containers large enough for root development. Trees and shrubs must have grown in container for minimum of one growing season but not longer than two. Root system must be able to hold soil when removed from container. Plants that have become root bound are not acceptable. Container stock must have been fertilized with slow releasing fertilizer.
- (d) Balled and Burlapped Plant Material
 - (i) Deciduous trees in excess of 3 m height must have been dug with large firm ball. Root balls must include 75% of fibrous and feeder root system. This excludes use of native trees grown in light sandy or rocky soil. Secure root balls with burlap, heavy twine and rope. For large trees: wrap ball in double layer of burlap and drum lace with minimum 10 mm diameter rope. Protect root balls against sudden changes in temperature and exposure to heavy rainfall.
- (e) Tree Spade Dug Material
 - (i) Obtain approval of the Contract Administrator for digging plant material with mechanized digging equipment, hydraulic spade or clam-shell type. This type of digging is typically not acceptable for boulevard tree plantings. Dig root balls to satisfy Landscape Canada (CNTA) standards. Lift root ball from hole, place in wire basket designed for purpose, line with burlap. Tie basket to ball with heavy rope. Take care not to injure trunk of tree with wire basket ties or rope.

- (f) Substitutions
 - (i) Substitutions to plant material as indicated on the Plant List will not be permitted unless written approval has been obtained as to type, variety and size prior to award of Contract. Plant substitutions must be of similar species and of equal size to those originally specified.

E24.2.8 Plant List

- (a) Trees to be compliant with City of Winnipeg Parks and Open Spaces the latest revision of "Acceptable Tree Species for Boulevards" available at http://www.winnipeg.ca/publicworks/parksOpenSpace/UrbanForestry/PDF/Acceptable_Tree_Species_for_Boulevard.pdf
- (b) Deciduous Trees (Balled and Burlapped or Container)
 - (i) *Acer negundo* (Manitoba Maple) / 60-70mm caliper.
 - (ii) *Celtis occidentalis* 'Delta' (Delta Hackberry) / 50-60mm caliper.
 - (iii) *Tilia cordata* (Littleleaf Linden) / 60-70mm calliper.
 - (iv) *Ulmus davidiana japonica* 'Discovery' (Discovery Elm) / 60-70mm calliper.
- (c) Evergreen Trees (Balled and Burlapped) – for replacement yard trees only
 - (i) *Picea alba* 'densata' (Black Hills Spruce) – 1.5m

E24.3 Construction Methods

E24.3.1 Workmanship

- (a) The Contract Administrator shall stake out location of trees prior to excavating.
- (b) The Contractor shall obtain clearances from all utilities, with respect to underground lines located in the areas to be excavated, prior to commencing planting operations.
- (c) The Contractor shall apply anti-desiccant in accordance with material manufacturer's instructions.
- (d) The Contractor shall coordinate planting operations; keep the site clean and planting holes drained, and immediately remove soil or debris spilled onto pavement.

E24.3.2 Planting Time

- (a) The Contractor shall plant deciduous plant material during dormant period before buds have broken. Plant material noted for spring planting only must be planted in dormant stage.
- (b) Plant material imported from region with warmer climatic conditions may only be planted in early spring.
- (c) When permission has been obtained to plant deciduous plant material after buds have broken, spray plants with anti-desiccant to slow down transpiration prior to transplanting.
- (d) When permission has been obtained, trees, shrubs and ground covers growing in containers may be planted throughout growing season.
- (e) Plant only under conditions that are conducive to health and physical conditions of plants.
- (f) The Contractor shall advise the Contract Administrator about the planting schedule at least three (3) days prior to planting operations.

E24.3.3 Excavations

- (a) Trees: excavate to depth such that the top of the root ball is even with existing grade, with a surface width of two times the diameter of the root ball. Backfill around trees with planting soil mixture.
- (b) The sides of all tree pits shall be scarified to the depth of one shovel blade.

- (c) Provide drainage for planting holes in heavy soil if natural drainage does not exist. Have method approved by Contract Administrator.
- (d) Protect the bottoms of excavations against freezing.
- (e) Remove water that enters excavations prior to planting. Ensure source of water is not ground water.

E24.3.4 Planting

- (a) Trees shall be placed on undisturbed soil and to a depth equal to that at which they were originally growing at the nursery.
- (b) For shrubs, loosen bottom of planting hole to depth of 150 to 200 mm. Cover bottom of each excavation with minimum of 150 mm of planting soil mixture.
- (c) Plant trees and shrubs vertically, with roots placed straight out in hole. Orient plant material to give best appearance in relation to structures, roads and walkways.
- (d) Place plant material to depth equal to depth they were originally growing in nursery or in locations collected.
- (e) Ball and burlap root balls: loosen burlap and cut away minimum top 1/3 without disturbing root ball. Do not pull burlap or rope from under root ball. With container stock, remove entire container without disturbing root ball. Non-biodegradable wrappings must be removed.
- (f) Tree spade excavated materials:
 - (i) Tree spade planting shall be permitted only by approval of the Contract Administrator.
 - (ii) Dig tree pit with same mechanical equipment as used to dig plant material. Ensure hole dug is upright as possible. Place in hole a mixture of 40 L of planting soil and fertilizer mixed with water to soupy consistency. This will be forced up sides of ball as root ball is placed in hole.
 - (iii) Loosen bottom of planting hole to depth of 150 to 200 mm. Cover bottom of each excavation with minimum 150 mm topsoil mixture.
- (g) Tamp planting soil mixture around root system in layers of 150 mm eliminating air voids. Frozen or saturated planting soil is unacceptable. When 2/3 of planting soil has been placed, fill hole with water. After water has been completely penetrated into soil, complete backfilling.
- (h) Excavate 200 mm depth an additional 600 mm beyond planting pits around the perimeter of all tree planting pits, and fill with planting soil mixture.
- (i) Construct 100 mm deep saucers around the outer edge of planting pits to assist with maintenance watering.
- (j) When planting is completed apply slow release organic fertilizer at minimum rate of 12 kg/100 m for shrub beds or 50 g/mm of calliper for trees, or as recommended by the soil analysis. Mix fertilizer thoroughly with top layer of planting soil and water in well.

E24.3.5 Pruning

- (a) Prune trees, shrubs and groundcover after planting, as indicated. Postpone pruning of those trees where heavy bleeding may occur, until in full leaf. Employ clean sharp tools and make cuts flush with main branch, smooth and sloping as to prevent accumulation of water. Remove projecting stumps on trunks or main branches. Remove dead and injured branches and branches that rub causing damage to bark. Trim trees and shrubs without changing their natural shape. Do not damage lead branches or remove smaller twigs along main branches.

E24.3.6 Standards

- (a) All roots shall be cleanly cut; split roots are not acceptable.

- (b) Branches and trunks shall be tied and protected; broken or abraded branches or trunks are not acceptable.
- (c) Planting shall be protected from drying conditions; desiccated material not acceptable.
- (d) All plants shall be free of insects and disease: galls, blight and other manifestations of insect infestation or disease not acceptable.

E24.3.7 Wood Chip Mulch

- (a) Wood chip mulch shall extend under all tree limbs, but shall not be installed within 150 mm of the tree trunk.
- (b) The saucers of all trees not planted in beds shall be covered with a 100 mm depth of wood chip mulch.

E24.3.8 Maintenance

- (a) Watering
 - (i) Plant material shall be watered once a week for first four weeks following installation, and once every second week, thereafter. Ensure adequate moisture in root zone at freeze-up.
- (b) Weeding
 - (i) Keep mulched shrub beds and tree saucers weed-free by manually removing weeds during the maintenance period.
- (c) Insects and Diseases
 - (i) Spray plants to combat pests and diseases. Use organic chemical insecticides approved by Agriculture Canada.
- (d) Adjustments
 - (i) Make adjustments requested by the Contract Administrator, including straightening trees, tightening guy wires and removing tree stakes.
- (e) Maintenance Period
 - (i) Maintain plant material for a period of two years following acceptance to start maintenance period of planting operations, as determined by the Contract Administrator.

E24.4 Measurement and Payment

E24.4.1 Trees and Shrubs

- (a) Supply and installation of trees and shrubs will be measured on a unit price basis for each tree and shrub listed on the Plant List and paid for at the Contract Unit Price for each species and size shown on the Plant List. The number of trees and shrubs to be paid for will be the total number of trees and shrubs installed in accordance with this specification and accepted by the Contract Administrator, as computed by the Contract Administrator.

E24.4.2 Supply and installation of fertilizer for plant material will be included in payment for the plant material.

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;
 - (c) communicating with residents and homeowners in person or by telephone;
- F1.1.1 Each Individual shall be required to obtain a Criminal Record Search Certificate 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#online>
- 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#online>
- (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.