



**THE CITY OF WINNIPEG**

# **TENDER**

**TENDER NO. 771-2019**

**CITY OF WINNIPEG, 2018 PARKING AND STREET ENHANCEMENTS PROGRAM**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 City of Winnipeg, 2018 Parking and Street Enhancements Program

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, August 16, 2019.

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

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

### **B3. ENQUIRIES**

B3.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

B3.2 If the Bidder finds errors, discrepancies or omissions in the Tender, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B3.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Tender will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Tender will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B3.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

### **B4. CONFIDENTIALITY**

B4.1 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.

B4.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Tender to the media or any member of the public without the prior written authorization of the Contract Administrator.

### **B5. ADDENDA**

B5.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Tender, or clarifying the meaning or intent of any provision therein.

- B5.2 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.
- B5.3 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B5.4 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.5 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.
- B5.6 Notwithstanding B3, enquiries related to an Addendum may be directed to the Contract Administrator indicated in D3.

**B6. SUBSTITUTES**

- B6.1 The Work is based on the Plant, Materials and methods specified in the Tender.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 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.
- B6.5 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.
- B6.6 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.
- B6.6.1 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.

- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B6.8 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.
- B6.9 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.

**B7. BID COMPONENTS**

- B7.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
  - (b) Form B: Prices, hard copy;
  - (c) Form G1: Bid Bond and Agreement to Bond.
- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.3 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.
- B7.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Tender number and the Bidder's name and address.
- B7.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Tender number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.
- B7.4.2 A hard copy of Form B: Prices must be submitted with the Bid. If there is any discrepancy between the Adobe PDF version of Form B: Prices and the Microsoft Excel version of Form B: Prices, the PDF version shall take precedence.
- B7.5 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Tender document, including the General Conditions, will be evaluated in accordance with B17.1(a).
- B7.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.8 Bids shall be submitted to:
- The City of Winnipeg
  - Corporate Finance Department
  - Materials Management Division
  - 185 King Street, Main Floor
  - Winnipeg MB R3B 1J1

**B8. BID**

- B8.1 The Bidder shall complete Form A: Bid, making all required entries.

B8.2 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.

B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.

B8.3 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.

B8.4 Paragraph 13 of Form A: Bid shall be signed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;
- (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, shall 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.

B8.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B8.5 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.

## **B9. PRICES**

B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B9.1.1 For the convenience of Bidders, and pursuant to B7.4.2 and B17.4.2, an electronic spreadsheet Form B: Prices in Microsoft Excel (.xls) format is available along with the Adobe PDF documents for this Tender on the Bid Opportunities page at the Materials Management Division website at <http://www.winnipeg.ca/matmgt/>

B9.2 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.

B9.3 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.

B9.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

## **B10. DISCLOSURE**

B10.1 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.

B10.2 The Persons are:

(a) N/A

**B11. CONFLICT OF INTEREST AND GOOD FAITH**

B11.1 Bidders, by responding to this Tender, declare that no Conflict of Interest currently exists, or is reasonably expected to exist in the future.

B11.2 Conflict of Interest means any situation or circumstance where a Bidder or employee of the Bidder proposed for the Work has:

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

that could or would be seen to:

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

B11.3 In connection with its Bid, each entity identified in B11.2 shall:

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

B11.4 Without limiting B11.3, the City may, in its sole discretion, waive any and all perceived, potential or actual Conflicts of Interest. The City's waiver may be based upon such terms and conditions as the City, in its sole discretion, requires to satisfy itself that the Conflict of Interest has been appropriately avoided or mitigated, including requiring the Bidder to put into place such policies, procedures, measures and other safeguards as may be required by and be acceptable to the City, in its sole discretion, to avoid or mitigate the impact of such Conflict of Interest.

B11.5 Without limiting B11.3, and in addition to all contractual or other rights or rights at law or in equity or legislation that may be available to the City, the City may, in its sole discretion:

- (a) disqualify a Bidder that fails to disclose a perceived, potential or actual Conflict of Interest of the Bidder or any of its employees proposed for the Work;

- (b) require the removal or replacement of any employees proposed for the Work that has a perceived, actual or potential Conflict of Interest that the City, in its sole discretion, determines cannot be avoided or mitigated;
- (c) disqualify a Bidder or employees proposed for the Work that fails to comply with any requirements prescribed by the City pursuant to B11.4 to avoid or mitigate a Conflict of Interest; and
- (d) disqualify a Bidder if the Bidder, or one of its employees proposed for the Work, has a perceived, potential or actual Conflict of Interest that, in the City's sole discretion, cannot be avoided or mitigated, or otherwise resolved.

B11.6 The final determination of whether a perceived, potential or actual Conflict of Interest exists shall be made by the City, in its sole discretion.

## **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 <https://winnipeg.ca/finance/findata/matmgt/listing/debar.pdf>

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);

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™) in the form of:

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

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 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).

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

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 Tender.

### **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), their address(es) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>
- 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).
- B14.4.1 To the extent permitted, the City shall treat as confidential information, those aspects of a Bid Submission identified by the Bidder as such in accordance with and by reference to Part 2, Section 17 or Section 18 or Section 26 of The Freedom of Information and Protection of Privacy Act (Manitoba), as amended.

## **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 contract securities have been furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

## **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 13 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 13 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 Tender, or acceptable deviation therefrom (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 B6.
- 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 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.
- B17.4.2 The electronic Form B: Prices and the formulas imbedded in that spreadsheet are only provided for the convenience of Bidders. The City makes no representations or warranties as to the correctness of the imbedded formulas. It is the Bidder's responsibility to ensure the extensions of the unit prices and the sum of Total Bid Price performed as a function of the formulas within the electronic Form B: Prices are correct.
- ## **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 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 If funding for the Work is provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada, Bidders are advised that the terms of D27 shall immediately take effect upon confirmation of such funding, regardless of when funding is confirmed.
- B18.4 Where an award of Contract is made by the City, the award shall be made to the qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B17.
- B18.4.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

## PART C - GENERAL CONDITIONS

### C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Construction* (Revision 2019-01-15) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](http://www.winnipeg.ca/matmgt/gen_cond.stm)
- C0.2 A reference in the Tender to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

## **PART D - SUPPLEMENTAL CONDITIONS**

### **GENERAL**

#### **D1. GENERAL CONDITIONS**

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

#### **D2. SCOPE OF WORK**

D2.1 The Work to be done under the Contract shall consist of:

- (a) Pavement Widening, Curb and Sidewalk Extensions, and Associated Works
  - (i) Hargrave Street – Notre Dame Avenue to McDermot Avenue
  - (ii) Hargrave Street – Bannatyne Avenue to William Avenue
  - (iii) Rupert Avenue – King Street to Main Street
- (b) Asphalt Bike Pathway Construction
  - (i) Hargrave Street – Notre Dame Avenue to McDermot Avenue

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

- (a) Pavement Widening, Curb and Sidewalk Extensions, and Associated Works
  - (i) Plane asphalt
  - (ii) Remove catchpits/catchbasins and install new drainage infrastructure
  - (iii) Concrete slab and partial slab repair
  - (iv) Construction of tree wells (Rupert Avenue Only)
  - (v) Concrete sidewalk renewal and new construction (modified barrier, ramp)
  - (vi) Concrete curb and gutter removal
  - (vii) Concrete curb and gutter construction (hand-formed)
  - (viii) Installation of precast adjustable bike lane curbs and end units
  - (ix) Installation of trees, precast tree vault panels, and tree grates (Rupert Ave. only)
  - (x) Paving stone supply, installation and grading (sidewalk)
  - (xi) Adjustment of valves and frames
  - (xii) Placement of asphalt Type 1A
  - (xiii) Application of green Tactile Paint Treatment
- (b) Asphalt Bike Pathway Construction
  - (i) Excavation
  - (ii) Place Geotextile
  - (iii) Placement and compaction of base and sub-base material
  - (iv) Placement of asphalt pavement Type 1A
  - (v) Boulevard restoration

#### **D3. CONTRACT ADMINISTRATOR**

D3.1 The Contract Administrator is AECOM Canada Ltd., represented by:

Thomas Findlay  
Transportation Engineer

Telephone No. 204 928-8438 Email Address [Thomas.findlay@aecom.com](mailto:Thomas.findlay@aecom.com)

D3.2 At the pre-construction meeting, Thomas Findlay 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 B7.

**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.

D4.2 At least two (2) business days prior to the commencement of any Work on the site, the Contractor shall provide the Contract Administrator with a phone number where the supervisor identified in D4.1 or an alternate can be contacted twenty-four (24) hours a day to respond to an emergency.

**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 identified in D3.

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:

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

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 not be submitted to this facsimile number. Bids must be submitted in accordance with B7.**

## **D7. FURNISHING OF DOCUMENTS**

D7.1 Upon award of the Contract, the Contractor will be provided with five (5) complete sets of the Tender. If the Contractor requires additional sets of the Tender, 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 shall 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 the 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. CONTRACT SECURITY**

- D11.1 The Contractor shall provide and maintain the performance bond and the labour and material payment bond until the expiration of the warranty period in the form of:
- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; and
  - (b) a labour and material payment bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H2: Labour and Material Payment Bond), in an amount equal to fifty percent (50%) of the Contract Price.
- D11.2 The Contractor shall provide the City Solicitor with the required performance and labour and material payment bonds within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D11.3 The Contractor shall, as soon as practicable after entering into a contract with a Subcontractor:
- (a) give the Subcontractor written notice of the existence of the labour and material payment bond in D11.1(b); and
  - (b) post a notice of the bond and/or a copy of that bond in a conspicuous location at the Site of the Work.

## **D12. SUBCONTRACTOR LIST**

- D12.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at or prior to a pre-construction meeting, or 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 C4.1 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 the General Conditions 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) The commencement date;

- (b) Substantial Performance; and
- (c) 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.

## **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 twenty-four (24) hour emergency response phone number specified in D4.2.
  - (iv) the Safe Work Plan specified in D9;
  - (v) evidence of the insurance specified in D10;
  - (vi) the contract security specified in D11;
  - (vii) the subcontractor list specified in D12; and
  - (viii) the detailed 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.

D14.4 The City intends to award this Contract by August 27, 2019.

D14.4.1 If the actual date of award is later than the intended date, the dates specified for Substantial Performance and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

### **D15. WORKING DAYS**

D15.1 Further to C1.1(II);

D15.1.1 The Contract Administrator will determine daily if a Working Day has elapsed and will record his/her assessment. On a weekly basis the Contract Administrator will provide the Contractor with a record of the Working Days assessed for the preceding week. The Contractor shall sign each report signifying that he/she agrees with the Contract Administrator's determination of the Working Days assessed for the report period.

D15.1.2 Work done to restore the Site to a condition suitable for Work, shall not be considered "work" as defined in the definition of a Working Day.

### **D16. RESTRICTED WORK HOURS**

D16.1 Further to clause 3.10 of CW 1130, the Contractor shall require written permission forty-eight (48) hours in advance from the Contract Administrator for any work to be performed between 2000 hours and 0700 hours, or on Saturdays, Sundays, Statutory Holidays and or Civic Holidays.

**D17. WORK BY OTHERS**

- D17.1 Work by others on or near the Site will include but not necessarily be limited to:
- (a) Manitoba Hydro – Street Light installation on Adelaide Street; and
  - (b) City of Winnipeg – Traffic Service Department – miscellaneous sign removal and installation and line painting;
  - (c) City of Winnipeg – Geomatics Branch – various works on survey monuments.
  - (d) Manitoba Hydro Underground Power – adjustment of manhole(s) frames and covers as required.

**D18. SUBSTANTIAL PERFORMANCE**

- D18.1 The Contractor shall achieve Substantial Performance within Twenty (20) consecutive Working Days of the commencement of the Work as specified in D14.
- 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 re-inspected.
- 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 Twenty-five (25) consecutive Working Days of the commencement of the Work as specified in D14.
- 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 re-inspected.
- D19.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

**D20. LIQUIDATED DAMAGES**

- D20.1 If the Contractor fails to achieve Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:
- (a) Substantial Performance – Five Thousand dollars (\$5,000);
  - (b) Total Performance – One Thousand Five Hundred dollars (\$1,500).
- D20.2 The amounts specified for liquidated damages in D20.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance or Total Performance by the days 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) Reflective crack maintenance as specified in CW3250-R7
  - (b) General Maintenance of Plant Material as specified in E15;
  - (c) Sod & Seed Maintenance as specified in CW 3510.
- 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 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.

## **MEASUREMENT AND PAYMENT**

### **D25. PAYMENT**

- D25.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

## **WARRANTY**

### **D26. WARRANTY**

- D26.1 Notwithstanding C13.2, the warranty period shall begin on the date of Substantial Performance and shall expire one (1) year thereafter unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

## THIRD PARTY AGREEMENTS

### D27. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

- D27.1 In the event that funding for the Work of the Contract is provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada, the following terms and conditions shall apply, as required by the applicable funding agreements.
- D27.2 Further to D27.1, in the event that the obligations in D27 apply, actual costs legitimately incurred by the Contractor as a direct result of these obligations ("Funding Costs") shall be determined by the actual cost to the Contractor and not by the valuation method(s) outlined in C7.4. In all other respects Funding Costs will be processed in accordance with Changes in Work under C7.
- D27.3 For the purposes of D27:
- (a) **"Government of Canada"** includes the authorized officials, auditors, and representatives of the Government of Canada; and
  - (b) **"Government of Manitoba"** includes the authorized officials, auditors, and representatives of the Government of Manitoba.
- D27.4 Modified Insurance Requirements
- D27.4.1 If not already required under the insurance requirements identified in D10, the Contractor will be required to provide wrap-up liability insurance in an amount of no less than two million dollars (\$2,000,000) inclusive per occurrence. Such policy will be written in the joint names of the City, Contractor, Consultants and all sub-contractors and sub-consultants and include twelve (12) months completed operations. The Government of Manitoba and its Ministers, officers, employees, and agents shall be added as additional insureds.
- D27.4.2 If not already required under the insurance requirements identified in D10, the Contractor will be required to provide builders' risk insurance (including boiler and machinery insurance, as applicable) providing all risks coverage at full replacement cost, or such lower level of insurance that the City may identify on a case-by-case basis, such as an installation floater.
- D27.4.3 The Contractor shall obtain and maintain third party liability insurance with minimum coverage of two million dollars (\$2,000,000.00) per occurrence on all licensed vehicles operated at the Site. In the event that this requirement conflicts with another licensed vehicle insurance requirement in this Contract, then the requirement that provides the higher level of insurance shall apply.
- D27.4.4 Further to D10.3, insurers shall provide satisfactory Certificates of Insurance to the Government of Manitoba prior to commencement of Work as written evidence of the insurance required. The Certificates of Insurance must provide for a minimum of thirty (30) days' prior written notice to the Government of Manitoba in case of insurance cancellation.
- D27.4.5 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.
- D27.5 Indemnification By Contractor
- D27.5.1 In addition to the indemnity obligations outlined in C17 of the General Conditions for Construction, the Contractor agrees to indemnify and save harmless the Government of Canada and the Government of Manitoba and each of their respective Ministers, officers, servants, employees, and agents from and against all claims and demands, losses, costs, damages, actions, suit or other proceedings brought or pursued in any manner in respect of any matter caused by the Contractor or arising from this Contract or the Work, or from the goods or services provided or required to be provided by the Contractor, except those resulting from the negligence of any of the Government of Canada's or the Government of Manitoba's Ministers, officers, servants, employees, or agents, as the case may be.

## D27.6 Records Retention and Audits

D27.6.1 The Contractor shall maintain and preserve accurate and complete records in respect of this Contract and the Work, including all accounting records, financial documents, copies of contracts with other parties and other records relating to this Contract and the Work during the term of the Contract and for at least six (6) years after Total Performance. Those records bearing original signatures or professional seals or stamps must be preserved in paper form; other records may be retained in electronic form.

D27.6.2 In addition to the record keeping and inspection obligations outlined in C6 of the General Conditions for Construction, the Contractor shall keep available for inspection and audit at all reasonable times while this Contract is in effect and until at least six (6) years after Total Performance, all records, documents, and contracts referred to in D27.6.1 for inspection, copying and audit by the City of Winnipeg, the Government of Manitoba and/or the Government of Canada and their respective representatives and auditors, and to produce them on demand; to provide reasonable facilities for such inspections, copying and audits, to provide copies of and extracts from such records, documents, or contracts upon request by the City of Winnipeg, the Government of Manitoba, and/or the Government of Canada and their respective representatives and auditors, and to promptly provide such other information and explanations as may be reasonably requested by the City of Winnipeg, the Government of Manitoba, and/or the Government of Canada from time-to-time.

## D27.7 Other Obligations

D27.7.1 The Contractor consents to the City providing a copy of the Contract to the Government of Manitoba and/or the Government of Canada upon request from either entity.

D27.7.2 If the Lobbyists Registration Act (Manitoba) applies to the Contractor, the Contractor represents and warrants that it has filed a return and is registered and in full compliance with the obligations of that Act, and covenants that it will continue to comply for the duration of this Contract.

D27.7.3 The Contractor shall comply with all applicable legislation and standards, whether federal, provincial, or municipal, including (without limitation) labour, environmental, and human rights laws, in the course of providing the Work.

D27.7.4 The Contractor shall properly account for the Work provided under this Contract and payment received in this respect, prepared in accordance with generally accepted accounting principles in effect in Canada, including those principles and standards approved or recommended from time-to-time by the Chartered Professional Accountants of Canada or the Public Sector Accounting Board, as applicable, applied on a consistent basis.

**FORM H1: PERFORMANCE BOND**  
(See D11)

KNOW ALL MEN BY THESE PRESENTS THAT

\_\_\_\_\_ ,  
(hereinafter called the "Principal"), and

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

\_\_\_\_\_ dollars (\$\_\_\_\_\_)

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

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

TENDER NO. 771-2019

City of Winnipeg, 2018 Parking and Street Enhancements Program  
which is by reference made part hereof and is hereinafter referred to as the "Contract".

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

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

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

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

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

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

**SIGNED AND SEALED**  
in the presence of:

\_\_\_\_\_  
(Witness as to Principal if no seal)

\_\_\_\_\_  
(Name of Principal)

Per: \_\_\_\_\_ (Seal)

Per: \_\_\_\_\_

\_\_\_\_\_  
(Name of Surety)

By: \_\_\_\_\_ (Seal)  
(Attorney-in-Fact)

**FORM H2: LABOUR AND MATERIAL PAYMENT BOND**  
(See D11)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

\_\_\_\_\_ dollars (\$\_\_\_\_\_)

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

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

TENDER NO. 771-2019

City of Winnipeg, 2018 Parking and Street Enhancements Program

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

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

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

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

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

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

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_ .

SIGNED AND SEALED  
in the presence of:

\_\_\_\_\_  
(Witness as to Principal if no seal)

\_\_\_\_\_  
(Name of Principal)

Per: \_\_\_\_\_ (Seal)

Per: \_\_\_\_\_

\_\_\_\_\_  
(Name of Surety)

By: \_\_\_\_\_ (Seal)  
(Attorney-in-Fact)

**FORM J: SUBCONTRACTOR LIST**  
(See D12)

City of Winnipeg, 2018 Parking and Street Enhancements Program

Portion of the Work	Name	Address
<u>SURFACE WORKS:</u>		
<i>Supply of Materials:</i>		
Concrete		
Asphalt		
Base Course & Sub-Base		
Sod		
Geotextile Fabrics		
<i>Installation/Placement:</i>		
Concrete		
Asphalt		
Base Course & Sub-base		
Joint Sealing		
<u>UNDERGROUND WORKS:</u>		
<i>Supply of Materials:</i>		
Sewer Service/Drainage Pipe		
Subdrain		
Frames and Covers		
Catchbasins & Catchpits		
Tree Vault Covers		
Tree Vault Frames & Grates		
<i>Installation/Placement:</i>		
Catchbasins & Catchpits		
<u>OTHERS:</u>		
Tree Installation		

## PART E - SPECIFICATIONS

### GENERAL

#### E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Specifications shall apply to the Work.
- E1.2 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Spec/Default.stm>
- E1.2.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.2.3 Further to C2.4(d), Specifications included in the Tender shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.3 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B6. In every instance where a brand name or design specification is used, the City will also consider approved equals and/or approved alternatives in accordance with B6.

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
CT-00	Cover Sheet and Location Plan	A1
CT-01	Hargrave Street – Notre Dame Avenue to McDermot Avenue	A1
CT-02	Hargrave Street – Bannatyne Avenue to William Avenue	A1
CT-03	Rupert Avenue – King Street to Main Street	A1
CT-04	Hargrave Street – Pavement Marking Plan	A1
CT-05	Arthur Street, Albert Street & Rupert Street – Pavement Marking Plan	A1

#### E2. PROTECTION OF EXISTING TREES

- E2.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing boulevard trees within the limits of the construction area:
- The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.
  - Trees identified to be at risk by the Contract Administrator are to be strapped with 25 x 100 x 2400mm wood planks, or suitably protected as approved by the Contract Administrator.
  - Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches), with the outcome read in feet, from the closest edge of the trunk. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.
  - Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the work required. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
  - Work on-site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.

- E2.2 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the City Forester or his/her designate.
- E2.3 No separate measurement or payment will be made for the protection of trees.
- E2.4 Except as required in clause E2.1(c) and E2.1(e), Elm trees shall not be pruned at any time between April 1 and July 31.

### **E3. TRAFFIC CONTROL**

- E3.1 Further to clauses 3.6, 3.7 and 3.8 of CW 1130:
- (a) Where directed by the Contract Administrator, the Contractor shall construct and maintain temporary asphalt ramps to alleviate vertical pavement obstructions such as manholes and planing drop-offs to the satisfaction of the Contract Administrator. Payment shall be in accordance with CW3410.
  - (b) In accordance with the Manual of Temporary Traffic Control on City Streets (MTTC), the Contractor ("Construction Agency" in the manual) shall be responsible for placing, maintaining and removing the appropriate temporary traffic control devices as specified by the MTTC or by the Traffic Management Branch of the City of Winnipeg Public Works Department. The Contractor shall bear all costs associated with the placement of temporary traffic control devices by their own forces or subcontractor.
- E3.2 Notwithstanding E3.1, in accordance with the MTTC, the Contract Administrator shall make arrangements with the **Traffic Services Branch of the City of Winnipeg** to place, maintain, and remove all **regulatory signs** and traffic control devices authorized and/or required by the Traffic Management Branch in the following situations:
- (a) Parking restrictions,
  - (b) Stopping restrictions,
  - (c) Turn restrictions,
  - (d) Diamond lane removal,
  - (e) Full or directional closures on a Regional Street,
  - (f) Traffic routed across a median,
  - (g) Full or directional closure of a non-regional street where there is a requirement for regulatory signs (turn restrictions, bus stop relocations, etc.) to implement the closure.
  - (h) Approved Designated Construction Zones with a temporary posted speed limit reduction. Traffic Services will be responsible for placing all of the advance signs and 'Construction Ends' (TC-4) signs. The Contractor is still responsible for all other temporary traffic control including but not limited to barricades, barrels and tall cones.
- E3.2.1 An exception to E3.2 is the 'KEEP RIGHT/KEEP LEFT' sign (RB-25 / RB-25L) which shall be supplied, installed, and maintained by the Contractor at their own expense.
- E3.2.2 Further to E3.2, where the Contract Administrator has determined that the services of the Traffic Services Branch are required, the City shall bear the 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.

### **E4. TRAFFIC MANAGEMENT**

- E4.1 Further to clause 3.7 of CW 1130:
- (a) Single lane closures on intersecting and/or adjoining Regional Streets shall only be permitted during non-peak periods when required for construction activities when approved by the Traffic Management Branch. Storage/parking of materials, equipment or vehicles is

not permitted on Regional Streets at any time unless approved by the Contract Administrator, in consultation with the Traffic Management Branch.

- E4.1.1 Maintain a minimum of one lane of traffic Northbound on Hargrave Street during their respective construction times, including during paving and milling operations. When no work is being performed on site, non-essential lane closures will not be permitted.
- E4.1.2 Maintain a minimum of one lane of traffic Westbound on Rupert Street during their respective construction times, including during paving and milling operations. When no work is being performed on site, non-essential lane closures will not be permitted.
- E4.1.3 Intersecting local street, median opening and private approach access shall be maintained at all times unless joint/slab repairs or planing/paving operations require temporary closure. Temporary closures are to be staggered such that consecutive intersections are not closed at the same time. Traffic on intersecting regional/collector streets (list streets) shall be maintained at all times as stated in unless planing/paving operations require temporary complete closures. Temporary complete closures shall be no longer than 10 minutes during asphalt planing/paving operations and shall be completed during off peak hours.
- E4.1.4 Flag persons may be necessary to maintain the flow of traffic during certain work operations.
- E4.1.5 Should the Contractor be unable to maintain pedestrian or vehicular access to a residence or business, he/she shall review the planned disruption with the business or residence and the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 24 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.
- E4.1.6 Pedestrian access must be maintained on both sides at all times. One pedestrian crossing in each direction must be maintained at all times.
- E4.1.7 Ambulance/emergency vehicle access must be maintained at all times.

## **E5. REFUSE AND RECYCLING COLLECTION**

- E5.1 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 E5.2 to permit the normal collection vehicles to collect the materials. Immediately following recycling collection the Contractor shall return recycling receptacles to the addresses marked on the receptacles.

### **E5.2 Collection Schedule:**

#### **Hargrave Street from Notre Dame to William.**

*Collection Day(s):* **Thursday**  
*Collection Time:* **7:00 am – 6:30 pm**  
*Common Collection Area:* **Maintain backlane access**

#### **Rupert Avenue from King Street to Main Street.**

*Collection Day(s):* **Thursday**  
*Collection Time:* **7:00 am – 6:30 pm**  
*Common Collection Area:* **Maintain backlane access**

- E5.3 No measurement or payment will be made for the work associated with this specification.

## **E6. PEDESTRIAN SAFETY**

- E6.1 During the project, a temporary snow fence shall be installed along the edge of excavation. The Contractor shall be responsible for maintaining the snow fence in a proper working condition. No measurement for payment shall be made for this work.

## **E7. WATER OBTAINED FROM THE CITY**

- E7.1 Further to clause 3.7 of CW 1120, the Contractor shall pay for all costs, including sewer charges, associated with obtaining water from the City in accordance with the Waterworks and Sewer By-laws.

## **E8. SURFACE RESTORATIONS**

- E8.1 Further to clause 3.3 of CW 1130, when Total Performance is not achieved in the year the Contract is commenced, the Contractor shall temporarily repair any Work commenced and not completed to the satisfaction of the Contract Administrator. The Contractor shall maintain the temporary repairs in a safe condition as determined by the Contract Administrator until permanent repairs are completed. The Contractor shall bear all costs associated with temporary repairs and their maintenance.

## **E9. INFRASTRUCTURE SIGNS**

- E9.1 The Contractor shall obtain infrastructure signs from the Traffic Services Sign Shop at 421 Osborne Street. The Contractor shall mount each sign securely to a rigid backing material approved by the Contract Administrator. The Contractor shall fasten each sign to a suitable support and erect and maintain one sign at each street as directed by the Contract Administrator. When the Contract Administrator considers the Work on the street complete, the Contractor shall remove and dispose of the signs and supports. No measurement for payment will be made for performing all operations herein described and all other items incidental to the work described

## **E10. HYDRO EXCAVATION**

### **DESCRIPTION**

- E10.1 General
- E10.1.1 This specification shall cover the removal of earthen material immediately adjacent to underground utilities infrastructure such as gas lines, gas services and areaways by means of high pressure water spray, and the recovery of evacuated material by vacuum type means or equivalent method as approved by the Contract Administrator.
- E10.1.2 This specification shall also cover Hydro excavation around existing trees in tree pit applications for the work under E17 Tree Vaults.
- E10.2 Equipment
- E10.2.1 Hydro excavation unit shall be capable of maintaining a minimum working pressure of 10,000 psi, at a rate of flow of 10 to 12 gallons per minute. Unit should be adjustable, so as to provide adequate pressure to remove earthen material identified by the Contract Administrator.
- E10.2.2 Spray head shall be equipped with a rotating type nozzle, in order to provide a wider path of cut.

### **CONSTRUCTION METHODS**

- E10.3 Hydro-Removal of Earthen Material

- E10.3.1 Earthen material adjacent to utility entity shall be sprayed with high pressure water so as to remove all such material identified by the Contract Administrator.
- E10.3.2 Earthen material adjacent to tree roots for tree well construction shall be sprayed with controlled pressure water so as to not cause damage to the tree. The contractor must make arrangements to have personnel for City Forestry present during Hydro Excavation for tree well construction.
- E10.4 Recovery of Excavated Material
- E10.4.1 The recovery of excavated material shall be done using vacuum type method, or other type method as approved by the Contract Administrator.
- E10.4.2 The recovery of material shall follow immediately behind the excavation, to avoid excavated areas from filling with excavated material.
- E10.4.3 The use of mechanical sweepers will not be allowed.
- E10.4.4 Dispose of material in accordance with Section 3.4 of CW 1130.
- E10.5 Backfill of Hydro Excavated Hole
- E10.5.1 The Contractor shall be responsible for the backfill of the hydro excavated hole upon the completion of the Work described herein, to the approval of the Contract Administrator.

#### MEASUREMENT AND PAYMENT

- E10.6 Hydro Excavation
- E10.6.1 Hydro Excavation of earthen material will be measured on an hourly basis and paid for at the Contract Unit Price per hour for "Hydro Excavation". The hours to be paid for will be the total number of hours of Hydro Excavation in accordance with this specification, accepted and measured by the Contract Administrator. Travel to and from the Site will not be accounted for in the payment of this item.

### **E11. CATCH BASIN FLOW RESTRICTORS**

#### DESCRIPTION

- E11.1 General
- E11.1.1 The work included in this specification includes the supply and installation of PVC flow restrictors in new catch basins.

#### REFERENCED SPECIFICATIONS

- E11.2 City of Winnipeg Standard Construction Specifications
- E11.2.1 CW 2130 – Gravity Sewers
- E11.2.2 CW 2160 – Concrete Underground Structure and Works

#### MATERIALS

- E11.3 Flow restrictors
- E11.3.1 PVC SDR35 piping in accordance with City of Winnipeg Standard No. AT-4.2.2.10: Extruded Polyvinyl Chloride (PVC) Connection Sewer Pipe in Diameters 150 mm (6") and 200 mm (8").
- E11.4 Grout
- E11.4.1 Grout in accordance with CW 2160 – Concrete Underground Structure and Works

#### CONSTRUCTION METHODS

## E11.5 Installation

- E11.5.1 Cut sewer piping of the specified diameter to 300 mm in length square to the pipe. The restrictor pipe shall not include the pipe bell.
- E11.5.2 File each cut end smooth.
- E11.5.3 Coat inside of the catch basin lead and outside of the restrictor pipe with an approved cementing agent and coat with sand prior to grouting.
- E11.5.4 Insert the restrictor pipe into the catch basin pipe and grout in place, maintaining the restrictor pipe centered in the catch basin lead. Grout on the outlet end of the restrictor pipe shall be square to the pipe.

### MEASUREMENT AND PAYMENT

## E11.6 Catch Basin Flow Restrictors

- E11.6.1 Supply and installation of Catch Basin Flow Restrictors will be measured on a unit basis and paid for at the Contract Unit Price for " Catch Basin Flow Restrictors", for each catch basin flow restrictor acceptably installed, which price shall be payment in full for supplying all materials and for completing all operations herein described and all other items incidental to the work included in this Specification.

## E12. SAWCUTTING

### DESCRIPTION

- E12.1 Further to CW 3240-R8, the Contractor will be required to sawcut the existing concrete sidewalk full depth as follows:
  - E12.1.1 At the back of sidewalk along the face of the existing buildings so as not to damage the face of the buildings during removal.
  - E12.1.2 The Contractor shall exercise extreme caution when sawcutting sidewalks to avoid damage to any underlying areaways.
  - E12.1.3 In the event of damage to any buildings by the Contractor, the Contractor shall immediately notify the Contract Administrator and make all repairs or replacements necessary, at his own expense, to the satisfaction of the Contract Administrator and the Owner of the building.

### MEASUREMENT AND PAYMENT

- E12.2 All costs in connection with the above sawcutting are incidental and shall be included in the Contract Unit Price for "Miscellaneous Concrete Slab Removal, i) 100 mm Sidewalk (includes paving stone)".

## E13. ADJUSTMENT OF MANITOBA HYDRO MANHOLE FRAMES/MTS MANHOLE FRAMES

### DESCRIPTION

## E13.1 General

- E13.1.1 This specification covers the adjustment of Manitoba Hydro manholes/MTS manhole frames which works include but are not limited to removing the existing frame, making any required changes to the structure to accommodate new frame installation, reinstalling the existing frame or installing a new frame and cover and constructing any required temporary asphalt ramps.
- E13.1.2 Pavement removal and replacement will be in accordance with Specifications CW 3100 and CW 3230.

- E13.1.3 The Contractor is to provide a minimum 48 hour notice to Manitoba Hydro/MTS and the Contract Administrator prior to undertaking any of the proposed works on the utility manholes.
- E13.1.4 The Contractor to make arrangements through Manitoba Hydro/MTS for watch personnel to be present during construction of the required works to the utility manholes.
- E13.1.5 Referenced Standard Construction Specifications
  - (a) CW 3110 – Sub-Grade, Sub-Base and Base Course Construction;
  - (b) CW 3230 – Full-Depth Patching of Existing Slabs and Joints.

#### MATERIALS

- E13.2 Manhole Frames, Covers and Riser Rings
  - E13.2.1 Utility manhole frames and covers shall be provided by Manitoba Hydro/MTS.

#### CONSTRUCTION METHODS

- E13.3 Removal of Existing Pavement
  - E13.3.1 Remove complete concrete slab surrounding utility manhole in accordance with Specification CW 3110.
  - E13.3.2 Removal procedures to be done in a manor not to damage utility manhole structure.
- E13.4 Removal of Manhole Frame and Cover
  - E13.4.1 Remove the required concrete embedding the frame and remove the frame and cover. Hydro Watch personnel to approve construction method prior to proceeding. The Contractor is to provide opportunity for Hydro/MTS to collect the old frame and cover if applicable, otherwise the old frame and covers are to be disposed of off-site as directed by the Contract Administrator.
- E13.5 Installation of New Frame and Cover
  - E13.5.1 Install new or existing frame and cover as specified herein and or on the drawings, if applicable. Existing frames identified as being in good condition are to be reused.
  - E13.5.2 The Contractor shall set the frame and cover to the proposed grade utilizing shims and a form inside the manhole frame to prevent concrete from spilling into the interior of the manhole and produce a neat finished surface inside the frame. The Contractor shall then pour concrete around the outside of the frame to secure it to the manhole.
- E13.6 Construct temporary asphalt ramp
  - E13.6.1 Where required for re-opening lane to traffic, construct temporary asphalt ramp to the grades as noted on the drawings and as directed by the Contract Administrator.

#### MEASUREMENT AND PAYMENT

- E13.7 Adjustment of Manitoba Hydro Manhole Frame/MTS Frame
  - E13.7.1 Adjustment of Hydro manhole/MTS manhole frames and covers will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Adjustment of Manitoba Hydro Frame and Cover" and "Adjustment of MTS Frame and Covers". The number of units to be paid for will be the total number of manhole frames c/w covers adjusted/installed in accordance with this specification, accepted and measured by the Contract Administrator.
- E13.8 Concrete Pavement removal and replacement will be measured and paid for in accordance with Specification CW 3230.

## **E14. GREEN BIKE LANE TREATMENT**

### DESCRIPTION

#### E14.1 General

- E14.1.1 This Specification covers all operations relating to the supply and installation of green bike lane treatment at cycling corridor conflict points, as noted on the drawings.
- E14.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labor, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.

### MATERIALS

#### E14.2 Green Bike Lane Treatment

- E14.2.1 The Green Bike Lane Treatment shall be Cycle Grip MMAX by Ennis-Flint color to be EF Bike Lane Green or equivalent, in accordance with B6 as approved by the Contract Administrator. A link to the manufacturer's specifications is provided: [www.ennisflintamericas.com/downloads/dl/file/id/83/product/945/product\\_data\\_sheet\\_cycle\\_gripmmax.pdf](http://www.ennisflintamericas.com/downloads/dl/file/id/83/product/945/product_data_sheet_cycle_gripmmax.pdf).

### SUBMITTALS

- E14.3 Prior to construction submit the following to the Contract Administrator
- E14.3.1 Material data sheets for the product proposed to be supplied and installed.

### CONSTRUCTION METHODS

#### E14.4 Surface Preparation

- E14.4.1 Surface Preparation to be in accordance with Manufacturer's instructions.

#### E14.5 Masking

- E14.5.1 Masking of the edges of all green bike lane treatment areas to be in accordance with Manufacturer's instructions.

#### E14.6 Paint Mixing

- E14.6.1 Mix paint in accordance with manufacturer's instructions.

#### E14.7 Installation of Green Bike Lane Treatment

- E14.7.1 Install Green Bike Lane Treatment in accordance with Manufacturer's instructions.
- E14.7.2 Any damage done to the Green Bike Lane Treatment prior to completion of each marking area shall be rectified at the Contractor's expense.

### MEASUREMENT AND PAYMENT

- E14.7.3 Supply and Installation of Green Bike Lane Treatment shall be measured on an area basis and will be paid for at the contract Unit Price per square metre for "Supply and Installation of Green Bike Lane Treatment" supplied and installed in accordance with this specification and accepted and measured by the Contract Administrator.

## **E15. REMOVAL OF EXISTING INTERLOCKING PAVING STONES**

### DESCRIPTION

#### E15.1 General

- E15.1.1 This specification shall supplement the City of Winnipeg Standard Construction Specification CW 3330 and shall cover all operations related to the removal and stockpiling of existing interlocking paving stones for reinstallation.

### CONSTRUCTION METHODS

- E15.2 Removal of existing interlocking paving stones (concrete pavers and clay pavers) for stockpiling shall include: removal of paving stones and base course material as required; disposal of base course material and unusable paving stones; and stockpiling of paving stones in an area approved by the Contract Administrator.

### MEASUREMENT AND PAYMENT

- E15.2.1 Removal and stockpiling of existing interlocking paving stones will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Removal and Stockpiling of Existing Paving Stones". The area to be paid will be the total number of square metres removed and stockpiled in accordance with this specification, accepted and measured by the Contract Administrator.

## **E16. INSTALLATION OF INTERLOCKING PAVING STONES**

### DESCRIPTION

#### E16.1 General

- E16.1.1 This Specification covers all operations relating to the installation stockpiled clay pavers and supply and installation of concrete pavers and clay pavers in formed blockouts, as indicated on the drawings.
- E16.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.
- E16.1.3 This specification shall supplement and amend the City of Winnipeg Standard Construction Specification CW 3330 "Installation of Interlocking Paving Stones".
- E16.1.4 Referenced Standard Construction Specifications.
- (a) CW 3330 – Installation of Interlocking Paving Stones.
  - (b) CW 3335 – Installation of Interlocking Paving Stones on a Lean Concrete Base.
- E16.1.5 Referenced Standard Detail
- (a) SD-240A – Interlocking Paving Stone Detail for Medians and Private Approaches.
  - (b) SD-240B – Interlocking Paving Stone Detail on Lean Concrete Base.

### SUBMITTALS

- E16.2 Prior to construction, submit the following to the Contract Administrator;
- E16.2.1 The Contractor shall supply clay paver samples to the Contract Administrator for approval prior to installation.

### MATERIALS

- E16.3 Interlocking Paving Stones.

- E16.3.1 Stockpiled pavers.  
(a) Clay pavers.
- E16.3.2 Clay interlocking paving stones (clay pavers) shall be 92 x 194 x 57mm to match existing pavers; Endicott Brick Pavers, or equal as approved by the Contract Administrator, in accordance with B6.  
(a) Supplied by Alsip Brick, (contact Ralph Kendall, phone 204-667-3330).

#### CONSTRUCTION METHODS

- E16.4 The Contractor to verify the exact dimensions of pavers prior to construction of blockouts in concrete sidewalk.
- E16.5 Install blockouts in concrete sidewalk and as specified on Drawings.
- E16.6 Install bedding sand to a minimum of 13mm as specified on the drawings and to CW3330 standard.
- E16.7 Installation of stockpiled stockpiled clay pavers.  
(a) Patterns and colours of stockpiled pavers to match existing patterns and colours in each location that the pavers are removed as indicated on the drawings. Review with Contract Administrator prior to formwork and installation.  
(b) Remove existing adjacent pavers as required to ensure that pavers do not require cutting to tie into adjoining interlocking paving stone pattern. Review with Contract Administrator prior to installation.

#### MEASUREMENT AND PAYMENT

- E16.8 Installation of Stockpiled Pavers
- E16.8.1 Installation of stockpiled stockpiled clay pavers will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Reinstallation of Stockpiled Pavers". The area to be paid will be the total number of square metres stockpiled and reinstalled in accordance with this specification, accepted and measured by the Contract Administrator.
- E16.9 Supply and Installation of Interlocking Paving Stones
- E16.9.1 The supply and installation of concrete pavers and clay pavers will be measured on an area basis and paid for at the Contract Unit Price per square metre as follows:  
(a) Clay Pavers
- E16.9.2 The area to be paid will be the total number of square metres supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator

### **E17. TREE VAULTS**

#### DESCRIPTION

- E17.1 This Specification covers the installation of cast-in-place concrete tree vaults with tree grates, precast concrete vault covers and related excavation, tree vault sub drainage, geotextile, planting medium, wood and granite mulch for all new tree installations and for existing trees indicated on the drawings.

#### SUBMITTALS

- E17.2 Prior to construction, submit the following to the Contract Administrator;
- E17.2.1 Shop drawing for vault covers to be stamped by an Engineer registered to practice in the Province of Manitoba.
- E17.2.2 Mulch samples to the Contract Administrator for approval prior to installation.

(a) A wood chip mulch sample. Minimum sample size to be 1 kg.

E17.3 Prior to installation, arrange for inspection and approval of the following materials by the Contract Administrator:

E17.3.1 One (1) precast concrete vault cover.

#### MATERIALS

E17.4 Granular drainage material in accordance with specification CW 3120 – Installation of Sub Drains.

E17.5 Drainage pipe: 150 mm dia. Perforated PVC pipe.

E17.6 Non-woven geotextile to CW 3120.

E17.7 Concrete materials and accessories in accordance with CW 3310 – Portland Cement Concrete Pavement Works.

E17.8 Reinforcing steel for tree vault curbing construction to be in accordance with CW 3310.

E17.9 Precast Concrete Vault Cover

E17.9.1 150 mm reinforced precast concrete vault cover, medium sandblast finish, to accommodate AASHTO HS-20 loading, including 4-19 mm plastic lift rings and 4-19 mm PVC pipe SCH 40 bottom, drilled thru.

E17.9.2 Available from Barkman Concrete Ltd. Ph. Anthony Militano at 204-667-3310, or equal as approved by the Contract Administrator, in accordance with B6.

E17.10 Tree Grates to be RAIN Heel-Proof Tree Grate, 1.5 x 1.5 m (5' x 5') SQUARE with 510mm (20") tree opening as manufactured by Iron Age Designs, or equal as approved by the Contract Administrator, in accordance with B6.

(a) Tree grate material to be cast iron and manufactured to 'Load Class C'. All tree grate castings shall be manufactured true to pattern and component parts, and shall fit together in a satisfactory manner.

(b) Finish: Grates are to be supplied in raw state.

E17.11 Tree Guards to be two piece ID M1 - 510mm (20") diameter x 1.5m (60") height as manufactured by Iron Age Designs, or equal as approved by the Contract Administrator, in accordance with B6. Finish being galvanized steel.

#### CONSTRUCTION METHODS

E17.12 The Contractor to ensure that all buried utilities and services are located and, if necessary, protected and exposed prior to any excavation in accordance to CW 1120.

E17.13 Obtain approval of the tree grate with frame mock-up from Contract Administrator prior to construction of tree vaults. Refer to Exterior Metal Fabrication Specification.

E17.14 Excavate tree vaults to the dimensions and depth shown on the Drawings. Hydro Excavating in the area of the existing underground utilities and existing trees. Ensure base of tree pit slopes to drain toward perforated drainage pipe (min 1.0% slope).

E17.15 Hydro-excavate around existing tree pit to extend it to the dimensions shown on the drawing in accordance with E10. The Contractor is to make arrangements for City of Winnipeg Forestry personnel to be on site during hydro-excavation to ensure exposure of tree roots is acceptable.

E17.16 Clear excavation of all construction debris, trash, rubble and any foreign material. Excavate and remove oil spills and other soil contamination sufficiently to remove the harmful material. Fill over excavations with approved fill and compact to the required subgrade compaction.

- E17.17 All excavated material shall be disposed of offsite in accordance with CW 1130.
- E17.18 Backfill between roadway base and tree vault edge with compacted granular where required.
- E17.19 Install 200 mm depth granular drainage material with drainage pipe in accordance with specification CW 3120, and as shown on the Drawings. Ensure pipe has minimum 25 mm cover of drainage course above and below. Tie drainage pipe into nearest catch basin (min 0.25% slope).
- E17.20 Construct cast-in-place concrete tree vault in accordance with the Drawings.
- E17.21 Cover drainage course and sides of tree vault with geotextile in accordance with specification CW 3120 and as shown on the Drawings.
- E17.22 Backfill with street tree planting medium compacting sufficiently to provide good soil consistency for tree planting and to minimize settlement.
- E17.23 Plant trees in locations as per the Drawings. Ensure the tree trunk is centred on opening of tree covers. After tree planting, ensure that the finished soil level is 75mm below finished grade of sidewalk at trees to accommodate black granite mulch and 25 mm below bottom edge of tree vault cover.
- E17.24 Install vault covers and tree grates on tree vault thickened edge. Remove debris from lip and/or grind down concrete as required to ensure vault covers do not wobble and are flush with adjacent surfaces.
- E17.25 Install tree guards on all NEW tree planting with tree grates as per manufacturers specifications.
- E17.26 In Locations where tree vaults are located over existing duct lines, maintain 0.3m of clearance between top of the duct line and bottom of the tree vault. If this cannot be maintained use a separation void form barrier between the tree vault and ducts.

#### MEASUREMENT AND PAYMENT

##### E17.27 Tree Vaults

- E17.27.1 Construction of Tree Vaults will be measured on an area basis and paid for at the Contract Unit Price per square meter for "Tree Vault" which price shall be payment in full for supply of all materials and performing all operations herein described and for all other items incidental to the Work included in this Specification. The area to be paid for shall be the total number of square meters constructed in accordance with this Specification acceptable to the Contract Administration, as computed from measurements made by the Contract Administrator.
- E17.27.2 No separate measurement or payment will be made for drainage course, drain lines, geotextile and rootbarrier. All work is incidental to tree vault construction.

##### E17.28 Tree Vault Covers

- E17.28.1 Tree vault covers will be measured and paid for on a unit basis at the Contract Unit Price under "Supply and Install Tree Vault Covers" for:
- (a) "Vault Cover 1.55 x 1.55",
  - (b) "Vault Cover 1.22 x 1.55",
- Which price shall be payment in full for supply of all materials and performing all operations herein described and for all other items incidental to the Work included in this Specification. The number to be paid for shall be the total number installed in accordance with this Specification acceptable to the Contract Administrator.

##### E17.29 Tree Grates

E17.29.1 Tree grates will be measured and paid for on a unit basis at the Contract Unit Price for "Supply and Install Tree Grate" for:

(a) "1.5 x 1.5"

Which price shall be payment in full for supply of all materials and performing all operations herein described and for all other items incidental to the Work included in this Specification. The number to be paid for shall be the total number installed in accordance with this Specification acceptable to the Contract Administrator.

E17.30 Tree Guards

E17.30.1 Tree guards will be measured and paid for on a unit basis at the Contract Unit Price for "Supply and Install Tree Guard" which price shall be payment in full for supply of all materials and performing all operations herein described and for all other items incidental to the Work included in this Specification. The number to be paid for shall be the total number installed in accordance with this Specification acceptable to the Contract Administrator.

E17.31 Hydro Excavation

E17.31.1 Hydro excavation will be measured and paid for in accordance with E10 Hydro Excavation.

## **E18. PLANTING MEDIUM & FINISHED GRADING**

### DESCRIPTION

E18.1 This Specification covers the supply and installation of planting medium in tree vaults.

### REFERENCES

E18.2 Agriculture and Agri-Food Canada

E18.2.1 The Canadian System of Soil Classification, Third Edition, 1998.

E18.3 Canadian Council of Ministers of the Environment (CCME) Guidelines.

E18.4 The City of Winnipeg Standard Construction Specifications CW 1130 and CW 3540.

### SUBMITTALS

E18.5 Submit 0.5kg sample of topsoil to National Testing Laboratory, or approved alternate, and indicate present use and intended use. Prepare and ship sample in accordance with Provincial regulations and testing laboratory requirements.

E18.6 Submit two (2) copies of soil analysis and recommendations for corrections to Contract Administrator.

### QUALITY ASSURANCE

E18.7 Testing of planting medium to be carried out and paid for by Contractor. Prepare and ship planting medium samples to approved laboratory in accordance with Provincial regulations and laboratory requirements, indicating intended use on each sample.

E18.8 Test planting medium for nutrients N, P, K, micronutrients, soluble salt content, pH value and OM (organic matter).

E18.9 Acceptance of planting medium is subject to an inspection of material and confirmation of test results. Do not commence soft landscaping work until Contract Administrator has accepted planting medium.

## DELIVERY, STORAGE AND HANDLING

- E18.10 Store materials in a dry area, protected from freezing, sedimentation and contamination.
- E18.11 Deliver and store fertilizer in waterproof bags labeled with weight, analysis and name of manufacturer.

## MATERIALS

### E18.12 Planting Medium Soil Mix

- E18.12.1 Planting Medium: In accordance with CW 3540 for topsoil except organic matter to be in the range of 5-10%.
- E18.12.2 Peatmoss: deliver from partially decomposed fibrous or cellular stems and leaves of species of sphagnum mosses. Elastic and homogeneous, brown in colour. Free of wood and deleterious material that could prohibit growth. Shredded particle minimum size: 5 mm.
- E18.12.3 Sand: hard fine silica sand, well washed and free of impurities, chemical or organic matter, coarse texture, and to the following gradation.

<u>Particle Size (mm)</u>	<u>% Passing through Screen</u>
2.0	100%
1.0	95 to 100%
0.5	80 to 100%
0.25	0 to 30%
0.15	0 to 8%
0.75	0 to 1%

- E18.12.4 Fertilizer: Synthetic start-up slow release fertilizer with a N-P-K analysis of 12-36-15 ratio at a rate of 4 kg per 100 sq.m. (8 pounds per 100 sq. ft).

## CONSTRUCTION METHODS

### E18.13 Excavation

- E18.13.1 Excavate tree vaults by hand unless otherwise directed by Contract Administrator. Dispose of all rock, clay soils and other deleterious materials off Site.
- (a) Protect bottom of excavations against freezing.
  - (b) Remove water that has entered the excavated tree pit prior to planting. Notify Contract Administrator if water source is groundwater.
  - (c) Verify and obtain approval by Contract Administrator of tree vaults with geotextile prior to compacted soil mound and planting medium placement
- E18.13.2 Planting Medium Placement
- (a) Place planting medium in uniform layers over approved, unfrozen sub-grade, to the depth indicated on the Drawings.
  - (b) Eliminate rough spots and low areas, Prepare a loose, friable bed, boot firm and level
- E18.13.3 Soil Amendments
- (a) Apply lime, sulphur, or other soil amendment at a rate determined and recommended from planting medium sample test.
  - (b) Mix soil amendment well into full depth topsoil prior to application of fertilizer
- E18.13.4 Finished Grading
- (a) Per CW3540.
  - (b) Fine grade entire soil area to elevations as indicated on the Drawings. Eliminate rough spots and low areas Leave surfaces smooth, uniform and firm against foot printing with a fine loose texture

## SURPLUS MATERIAL

E18.14 Dispose of unused planting medium off Site in accordance with CW1130.

## CLEANING

E18.15 Perform cleaning to remove accumulated environmental dirt from all paved surfaces of building faces. Remove surplus materials, rubbish, tools and equipment barriers

## MEASUREMENT AND PAYMENT

E18.16 Supply and installation of planting medium will be measured on a volume basis and paid for at the Contract Unit Price per cubic metre for "Supply and Install Planting Medium". The volume to be paid will be the total number of cubic metres installed in accordance with this specification, accepted and measured by the Contract Administrator

## E19. SITE AMENITIES

### DESCRIPTION

E19.1 General

E19.1.1 This Specification covers all operations relating to the supply and installation of bicycle racks and metal benches.

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

### SUBMITTALS

E19.2 Contractor shall submit shop drawing for review by Contract Administrator prior to purchase and installation.

### MATERIALS

E19.3 General

E19.3.1 The Contractor shall be responsible for the supply, safe storage, handling and installation of all materials set forth in this Specification. All materials supplied under this Specification shall be subject to inspection and acceptance by the Contract Administrator.

E19.4 Site Amenities and Accessories:

E19.4.1 Metal Bench

- (a) bench to be Victor Stanley Inc. Classic Series C-10 with center arm rest, black powder-coated, length 1.83 m (6 ft), as manufactured by Victor Stanley Inc. or equal as approved by the Contract Administrator, in accordance with B6.

Kevin Bettridge  
Ph: 1.888.788.7408

E19.4.2 Accessories

- (a) All mounting accessories to be stainless steel and tamper proof.

### CONSTRUCTION METHODS

E19.5 Bench

E19.5.1 Surface mount metal bench on concrete pad as indicated on the Construction Drawings. Follow manufacturer's instructions for surface mounting of bench.

## MEASUREMENT AND PAYMENT

### E19.6 Metal Bench

- E19.6.1 Metal benches will be measured on a unit basis and paid for at the Contract Unit Prices per each for "Supply and Install Metal Bench", which price shall be payment in full for supplying and installing all materials and for completing all operations herein described and all other items incidental to the work included in this Specification, accepted and measured by the Contract Administrator.

## E20. EXTERIOR METAL FABRICATION

### DESCRIPTION

#### E20.1 General

- E20.1.1 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion for the fabrication and installation of galvanized tree grate frames.

#### E20.2 References

- E20.2.1 American Society for Testing and Materials International, (ASTM)
- (a) ASTM A53/A53M-02, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
  - (b) ASTM A269-02, Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
  - (c) ASTM A307-02, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- E20.2.2 Canadian Standards Association, (CSA International)
- (a) CAN/CSA-G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel.
  - (b) CAN/CSA-G164-M93 (R1998), Hot Dip Galvanized or Irregularly Shaped Articles, or latest.
  - (c) CAN/CSA-S16.1-01, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
  - (d) CSA W59-1989, R2001, Welded Steel Construction, Metal Arc Welding, Imperial Version.

### MATERIALS

#### E20.3 Tree Grate Frame

- E20.3.1 Frame: 112 mm x 76 mm x 6 mm thk. Steel tube.
- E20.3.2 Lip: 9 mm thk. Steel flat bar.
- E20.3.3 Free Standing Support:
- (a) 112 mm x 112 mm x 6 mm thk. Steel tube; and
  - (b) 6 mm flat bar plate.
- E20.3.4 All components to be hot-dip galvanized following assembly.

#### E20.4 Accessories

- E20.4.1 Welding materials:
- (a) CSA W59.

- E20.4.2 Welding electrodes:  
(a) CSA W48 Series.

#### SUBMITTALS

- E20.5 Submit shop drawing for tree grate frame:
- E20.5.1 Shop drawing to clearly indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number and size of anchors, supports, reinforcement, details and accessories.
- E20.5.2 Indicate and list hardware and miscellaneous items.
- E20.5.3 Provide templates, patterns, fixing diagrams as required.
- E20.5.4 Indicate related, adjacent materials, and connections.
- E20.6 Submit mock-up of one tree grate with galvanized frame fully assembled for review and approval by the Contract Administrator.

#### DELIVERY, STORAGE AND HANDLING

- E20.7 Deliver materials to site, suitably packaged. Do not deliver materials long before they are required on site or cause any delays to scheduling.
- E20.8 Store materials in a dry location off the ground, and prevent damage.
- E20.9 Materials that have been damaged or deemed unfit for use during delivery or storage shall be immediately replaced at no cost.

#### SITE CONDITIONS

- E20.10 Make a careful examination of the site and structures and investigate all matters relating to the nature of the work to be undertaken, the means of access and egress, the rights and interests which may be interfered with during the construction of the Work.
- E20.11 Report any discrepancies or omissions to the Contract Administrator, who will issue written clarification. Oral interpretations or instructions are not acceptable.

#### CONSTRUCTION METHODS

- E20.12 Review and understand the tree grate dimensions and details.
- E20.13 Obtain approval of shop drawings and mock-up prior to fabrication.
- E20.14 Have a tree grate on hand prior to fabrication. Tree grate shall sit flush with top of frame lip. Know thickness of hot-dipped galvanization material to ensure that tree grate is flush with top of lip following galvanization.
- E20.15 Lip shall sit flush with adjacent surfaces. Adjust height of frame steel tube as required to make flush.
- E20.16 Fabricate work square, true, straight and accurate to required sizes, with joints closely fitted and properly secured.
- E20.17 Do welding work in accordance with CSA W59.
- E20.18 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.
- E20.19 De-grease and de-bur all sharp edges in the shop left behind after fabrication is complete, prior to galvanization.

E20.20 Hot-dip galvanize after fabrication. No touch-up, welding, drilling or grinding will be accepted after galvanization.

#### INSTALLATION

E20.21 Erect metal work square, plumb, straight and true, accurately fitted, with tight joints and intersections.

E20.22 Install tree grate frame on tree vault thickened edge. Remove debris from lip and/or grind down concrete as required to ensure tree grate frames do not wobble and are flush with adjacent surfaces.

#### ACCEPTANCE

E20.23 Work will be accepted only if it is erected true to the Drawings and conforms to the approved shop drawings and mock-up.

#### MEASUREMENT AND PAYMENT

E20.24 Tree grate frames

E20.24.1 Supply and installation of tree grate frames shall be measured on a unit basis and paid for at the Contract Unit Price for "Supply and Install of Tree Grate Frame" for:

(a) "1.5 x 1.5 Frame",

Which payment shall be considered compensation in full for the supply of all materials and the performing of all operations necessary to complete the Work as specified including any items incidental to the Work of this Specification.

### **E21. TREES**

#### DESCRIPTION

E21.1 General

E21.1.1 This specification covers all operations relating to the supply and installation of nursery-grown trees in areas indicated on the Drawings, including preparation, digging, transport and planting, and maintenance.

E21.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.

E21.2 Nomenclature

E21.2.1 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.

E21.3 Source Quality Control

E21.3.1 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".

E21.3.2 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". The use of "collected plants" will not be permitted unless approved by the Contract Administrator.

- E21.3.3 The Contractor shall notify Contract Administrator of source of plant material at least seven (7) days in advance of shipment.
- E21.3.4 Acceptance of plant material at source does not prevent rejection of same plant material on site prior to or after planting operations.
- E21.3.5 Imported plant material must be accompanied with necessary permits and import licenses. Conform to federal and provincial regulations.
- E21.4 Shipment and Pre-Planting Care
- E21.4.1 Coordinate shipping of plants and excavation of holes to ensure minimum time lapse between digging and planting.
- E21.4.2 Tie branches of trees 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.
- E21.4.3 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.
- E21.4.4 Remove broken and damaged roots with sharp pruning shears. Make clean cut and cover cuts over 50 mm diameter with wound dressing.
- E21.4.5 Keep roots moist and protect from sun and wind. Heel-in trees that cannot be planted immediately in shaded areas; water well.
- E21.5 Replacement
- E21.5.1 During the first two (2) years 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, 2018, would be required to be replaced in the spring of 2019.

## MATERIALS

- E21.6 General
- E21.6.1 The Contractor shall be responsible for the supply, safe storage and handling of all materials set forth in this Specification. All materials supplied under this Specification shall be subject to inspection and acceptance by the Contract Administrator.
- E21.7 Trees
- E21.7.1 Trees shall be two (2) American Elm – *Ulmus Americana* and three (3) Ivory Silk Japanese Tree Lilac – *Syringa reticulata* 'Ivory Silk'.
- E21.8 Water
- E21.8.1 Water shall be potable and free of minerals that may be detrimental to plant growth.
- E21.9 Fertilizer
- E21.9.1 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.
- E21.10 Trunk Protection and Tree Support
- E21.10.1 Tree protection shall be a 100 x 600 mm long section of plastic weeping tile material.
- E21.11 Root Ball Burlap
- E21.11.1 Root ball burlap shall be 150 g Hessian burlap.

#### E21.12 Anti-desiccant

- E21.12.1 Anti-desiccant shall be wax-like emulsion to provide film over plant surfaces reducing evaporation but permeable enough to permit transpiration.

#### E21.13 Plant Material

- E21.13.1 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 and the Oak-Aspen Forest Eco-region.
- E21.13.2 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.
- E21.13.3 Nursery stock shall be No. 1 grade trees, shrubs and vines.
- E21.13.4 All plant material shall be measured when branches are in their natural position. Height and spread dimensions specified in the Plant List on the Drawings 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.
- E21.13.5 All containerized whips and herbaceous plant material shall have a minimum of one full year's growth. Roots shall be healthy, reaching the sides of the containers, and developed such that the root ball can be kept intact during transplanting. Roots shall not encircle each other to the extent of inhibiting plant growth.
- E21.13.6 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.
- E21.13.7 Use trees, shrubs and groundcovers 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.
- E21.13.8 All parts of the plants shall be moist and show live, green cambium tissue when cut.
- E21.13.9 At least one (1) plant of each variety supplied shall bear a tag showing both the botanical and common name of the plant.

#### E21.14 Additional Plant Material Qualifications:

##### E21.14.1 Imported Plant Material

- (a) 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.

##### E21.14.2 Cold Storage

- (a) Approval required for plant material that has been held in cold storage.

##### E21.14.3 Container-Grown Stock

- (a) 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.

##### E21.14.4 Balled and Burlapped Plant Material

- (a) 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.

E21.14.5 Tree Spade Dug Material

- (a) 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.

E21.14.6 Substitutions

- (a) 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.

## CONSTRUCTION METHODS

E21.15 General

E21.15.1 Workmanship

- (a) The Contractor shall stake out location of trees as per the Drawings. Obtain Contract Administrator's approval 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.

E21.15.2 Planting Time

- (a) Trees growing in containers/ball and burlap may be planted throughout growing season.
- (b) Plant only under conditions that are conducive to health and physical conditions of plants.
- (c) The Contractor shall provide the Contract Administrator with a planting schedule at least two weeks prior to planting operations. Extending planting operations over long period using limited crew will not be accepted.

E21.15.3 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.
- (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.

E21.15.4 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) Plant trees vertically, with roots placed straight out in hole. Orient plant material to give best appearance in relation to structures, roads and walkways.
- (c) Place plant material to depth equal to depth they were originally growing in nursery or in locations collected.
- (d) 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.
- (e) 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.
- (f) 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.
- (g) Construct 75 mm deep saucers around the outer edge of planting pits to assist with maintenance watering.
- (h) 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.

#### E21.15.5 Pruning

- (a) Prune trees 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.

#### E21.15.6 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.

#### E21.16 Maintenance

##### E21.16.1 Watering

- (a) 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.

##### E21.16.2 Weeding

- (a) Keep tree saucers weed-free by manually removing weeds during the maintenance period.

##### E21.16.3 Insects and Diseases

- (a) Spray plants to combat pests and diseases. Use organic chemical insecticides approved by Agriculture Canada.

##### E21.16.4 Adjustments

- (a) Make adjustments requested by the Contract Administrator, including straightening trees, tightening guy wires and removing tree stakes.

E21.16.5 Maintenance Period

- (a) Maintain plant material for a period of two years following acceptance to start maintenance period of planting operations, as determined by the Contract Administrator.

## MEASUREMENT AND PAYMENT

### E21.17 Trees

- E21.17.1 Supply and installation of trees will be measured on a unit price basis for each tree listed in the "Plant Material List", which price shall be payment in full for supplying all materials and for completing all operations herein described and all other items incidental to the work included in this Specification, accepted and measured by the Contract Administrator.

### E21.18 Fertilizer

- E21.18.1 Supply and installation of fertilizer for plant material will be considered incidental to the Works of this Specification. No measurement and payment will be made for this Item of Work.

## **E22. LONG TERM SCHEDULED MAINTENANCE OF PLANT MATERIAL**

### DESCRIPTION

- E22.1 This specification covers all operations relating to the maintenance of plant material following acceptance of the Work by the Contract Administrator.

- E22.1.1 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.

### E22.2 MATERIALS

#### E22.3 General

- E22.3.1 The Contractor shall be responsible for the supply, safe storage and handling of all materials set forth in this Specification. All materials supplied under this Specification shall be subject to inspection and acceptance by the Contract Administrator.

- E22.4 The Contractor shall provide all necessary materials and equipment including: additional topsoil, soil ameliorates, mulches, fertilizers and pesticides, and pruning tools, water trucks, hoses, water metres and any other items necessary for the maintenance of the areas indicated in this specification.

### CONSTRUCTION METHODS

#### E22.5 Provision of Maintenance Personnel

- E22.5.1 The Contractor shall provide all necessary personnel for the ongoing maintenance operations.

#### E22.6 Capability of Personnel

- E22.6.1 Maintenance personnel should have at least one year of experience in arboriculture/maintenance and should be under the direction of a foreman, in all cases, with not less than five years of experience with similar maintenance operations.

- E22.6.2 The maintenance foreman shall be familiar with plant identification.

## E22.7 Maintenance Period

E22.7.1 Maintain plantings for a period of two (2) years from the completion of the Maintenance for Establishment period, as determined by the Contract Administrator. Note: Completion shall not occur after October 30, or before May 15 of any year.

## E22.8 Maintenance Schedule

E22.8.1 Provide the Contract Administrator a Schedule of Proposed Maintenance Activities for the two-year scheduled maintenance period, based on the requirements outlined herein. The scheduled maintenance period shall not commence until the schedule has been reviewed by the Contract Administrator.

## E22.9 Recording Maintenance Operations

E22.9.1 The Contractor shall provide a detailed maintenance log, including but not limited to the following: hours of labour undertaken, number of personnel employed and equipment used. The log will itemize watering, spraying and any other maintenance work. Contractor shall submit logs monthly at regularly scheduled meetings with the Contract Administrator. Maintenance log will be included in payment for the maintenance work

## E22.10 Traffic

E22.10.1 Do not conduct maintenance operations during peak traffic periods (Monday to Friday from 07:00 to 09:00 and from 15:30 to 17:30).

## E22.11 Maintenance of Trees

E22.11.1 Maintain trees as indicated in Trees Specification - maintenance clause.

### E22.11.2 Watering Trees

- (a) Newly planted trees require water to become established; however, watering too often can kill a plant. During the summer, if temperatures are fairly high and there has been no rainfall, water approximately once a week.
- (b) Contractor shall determine the need for watering by taking soil tests weekly with a one-inch auger. Take a test sample from both the planting soil and from the tree root balls by drilling to a minimum depth of 600 mm. The soil shall contain enough moisture to hold together when compressed in the hand, but shall not be muddy.
- (c) Testing shall be undertaken at a minimum of 10 sites per week at a minimum of 10m between sites. The installed plant material and bioengineering shall not be allowed to dry out to the detriment of the viability of the plant material. Contractor shall monitor and submit lots to the Contract Administrator monthly. Contractor shall water-in plant material works in late fall during the scheduled maintenance period.

### E22.11.3 Fertilizing, Pruning and Spraying Deciduous Trees

- (a) Because of the specialized nature of such operations, employ a qualified local arborist.

### E22.11.4 Pruning Deciduous Trees

- (a) Prune in accordance with Trees Specification - pruning clause by thinning out unnecessary limbs or portions of limbs and by cutting back the terminal growth. Cut with pruning shears and with handsaws for limb-wood. When cutting the terminal growth, make the cuts one-quarter inch above the bud or lead twig. Where an entire limb is removed, make the cuts flush with the main stem or trunk.

### E22.11.5 Cultivation

- (a) Cultivate only as required to reconstruct planting beds or tree saucers, or to remove significant weed growth.
- (b) Do not cultivate around plants with a shovel or spade. The tendency is to penetrate too deeply and cause root injury. Cultivate with a hoe or similar tool. When using a

hoe never penetrate soil more than 50 mm. Maintain natural elevation of the surrounding area when cultivating. Create a gentle saucer to contain water around the tree root zone.

- (c) Avoid pyramiding soil around the base of any plant as this causes water to drain away and will encourage undesirable top root growth.
- (d) The boundary between the adjacent sod and soil saucer should be crisp and well formed.
- (e) Restore wood chip mulch when cultivation completed.

E22.11.6 Spraying

- (a) Spray trees to control insect pests and diseases. Use horticultural compounds approved by Agriculture Canada, which are specific for the problem to be contained.

E22.11.7 Straightening

- (a) Straighten trees as required or as directed by the Contract Administrator.

E22.11.8 Mulching Wood Chip

- (a) Add wood chip mulch to planting areas as required to maintain an even fresh surface.

E22.11.9 Weeding

- (a) Hand weed and lightly rake a minimum of once per month, or as determined by the Contract Administrator, to remove competition for installed plant material/undesirable plant material. Dispose of undesirable material off-site.
- (b) The Contractor shall be responsible for any fines or weed control notices issued for the planting areas. All such notices shall be dealt with by the Contractor in a timely fashion. Copies of any fines and notices shall be provided to the Contract Administrator within five (5) working days of receipt by the Contractor.

E22.11.10 Dispose of waste material at a recognized solid waste disposal site.

**MEASUREMENT AND PAYMENT**

E22.12 General Maintenance of Trees

E22.12.1 Trees will be measured on a unit and paid for at the Contract Unit Price per annual for the "Items of Work" listed here below which price shall be payment in full for supplying all materials and for completing all operations herein described and all other items incidental to the work included in this Specification, accepted and measured by the Contract Administrator.

- (a) Items of Work
  - (i) General Maintenance of Plant Material
- (b) Two year general maintenance of trees including fertilizing, pruning, spraying for insects, disease control, cultivation, care of guy wires and turnbuckles, straightening, mulching and watering will be measured twice each season, typically in July and October, for a six month annual growing season from April 15 to October 15 each year.

**E23. PLANT MATERIAL WARRANTY**

**DESCRIPTION**

E23.1 General

E23.1.1 This Specification covers the provision of warranty for all plant material itemized on the Plant List:

- (a) Plant Material shall be under warranty for two full years.

E23.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.

E23.2 Timing

E23.2.1 Warranty shall commence upon acceptance of installed plant material.

E23.3 Warranty

E23.3.1 The Contractor hereby warrants that the plant material as itemized on the Plant Lists and on the Drawings will remain free of defects for the maintenance period indicated for each area of the Contract.

E23.4 End-of-Warranty Inspection

E23.4.1 Contract Administrator reserves the right to extend the Contractor's warranty responsibilities for an additional year, at the end of the designated warranty period for the appropriate area, if at that time plant material leaf development and growth are not sufficient to ensure future survival.

E23.5 Replacement

E23.5.1 During the warranty period, remove from site any plant material that has died or failed to grow satisfactorily, as determined by the Contract Administrator and replace with healthy plant material of the same species and size.

E23.5.2 Replace plant material in the following spring or fall as directed.

E23.5.3 Extend warranty on replacement plant material for an additional period until the end of the specified warranty period or for one full growing season, whichever is the longer period.

E23.5.4 Continue such replacement and warranty until plant material is acceptable.

E23.5.5 Trees determined by the Contract Administrator to have been damaged by vandalism shall be replaced and such replacement trees will be paid for at the Contract Unit Prices for the species indicated on the Drawings.

MEASUREMENT AND PAYMENT

E23.6 Warranties on Plant Material

E23.6.1 Warranties on plant material will be incidental to the "Plant Material." No measurement and payment will be made for these Items of Work.

**E24. SALT TOLERANT GRASS SEEDING**

DESCRIPTION

E24.1 Further to CW 3520 and CW 3540, this specification shall cover sub-grade preparation and the supply and placement of Salt Tolerant Grass Seed.

MATERIALS

E24.2 Salt Tolerant Grass Seed

E24.2.1 Salt Tolerant Grass Seed for regional and collector boulevards, medians and interchange areas shall be a mixture composed of:

- (a) Seventy percent (70%) Fults or Nuttals Alkaligrass (*Puccinellia* spp.), twenty percent (20%) Audubon or Aberdeen Creeping Red Fescue and ten percent (10%) Perennial Ryegrass.

## EQUIPMENT

- E24.3 Scarification equipment shall be suitable for the area being scarified, shall be capable of scarifying the sub-grade to the specified depth and shall be accepted by the Contract Administrator. For confined areas a toothed bucket may be acceptable. For larger areas tilling equipment may be required.

## CONSTRUCTION METHODS

- E24.4 Preparation of Existing Grade
- E24.4.1 Prior to placing topsoil, in areas to be seeded greater in width than 600 mm, prepare the existing sub-grade by scarifying to a minimum depth of 75 mm and to a maximum depth of 100 mm to the satisfaction of the Contract Administrator.
- E24.4.2 Scarification shall consist of breaking up and loosening the sub-grade. No scarification shall occur within the edge of a tree canopy (or drip line).
- E24.5 Salt Tolerant Grass Seeding
- E24.5.1 Salt Tolerant Grass Seed shall be sown at a rate of 2.2 kilograms per 100 square meters.

## MEASUREMENT AND PAYMENT

- E24.6 Supply, placement and maintenance of Salt Tolerant Grass Seed will be paid for at the Contract Unit Price per square metre for "Salt Tolerant Grass Seeding", measured as specified herein, which price shall be payment in full for supplying all materials and for completing all operations herein described and all other items incidental to the work included in this Specification. Payment for Salt Tolerant Grass Seeding shall be in accordance with the following:
- (a) Sixty five (65%) percent of quantity following supply and placement.
  - (b) Remaining thirty five (35%) percent of quantity following termination of the Maintenance Period.

## E25. TEMPORARY TRAFFIC CONTROL SIGNAGE

- E25.1 The Contractor shall supply all signage in accordance with the City of Winnipeg – Manual of Temporary Traffic Control on City Streets. Any regulatory signage not included in the City of Winnipeg – Manual of Temporary Traffic Control on City Streets shall be supplied by the City of Winnipeg Traffic Services.
- E25.2 The supply, erection, removal and disposal of the required signs shall be incidental to the traffic staging and no further measurement or payment shall be made.

## E26. CONSTRUCTION ADJACENT TO MANITOBA HYDRO INFRASTRUCTURE

- E26.1 Work may interfere with Manitoba Hydro's underground primary cable, underground subtransmission cable, underground ductlines, underground manholes, and underground street light cables.
- E26.2 Caution shall be taken near conductors, ductlines, and manholes. When performing work near conductors, ductlines, or manholes, please call the appropriate district office (refer to the District Coverage Map) for safety watch:
- City Centre: 204-360-7595
  - Fort Garry: 204-360-5818
  - St Boniface: 204-360-4495
- E26.3 If crossing over street light cables, a work order request is to be sent in to Darryl Stocki at dstocki@hydro.mb.ca for temporary overhead cable installation for the duration of construction.

- E26.4 A minimum horizontal separation of 1.0 m and a minimum vertical separation of 300mm must be maintained between any underground proposed infrastructure and Manitoba Hydro's infrastructure. CSA C22.3 7-15 (attached) shows the minimum burial depths required for Manitoba Hydro cables after work is completed. Any excavation within 1m of Manitoba Hydro plant should be done according to Manitoba Hydro and Work Place Safety and Health standards and practices.
- E26.5 For excavation near poles, the minimum amount of undisturbed earth to be left around all poles shall be 1m. The maximum slope angle of undisturbed earth shall be 26° or 2:1 until the desired depth is reached. The minimum separation for excavations deeper than 500mm without regional engineering involvement shall be 1.5m. Excavations to be backfilled and tamped to maintain slope.
- E26.6 Where scope of work includes Manitoba Hydro manholes, provide Manitoba Hydro with all final grades at our infrastructure. Consultants/contractors are responsible to supply Manitoba Hydro with a list of all the manholes in the scope of work they are contemplating. If any of the grades have to be lowered, it should be determined by the consultant if they can design the grades to accommodate manholes that are not able to be lowered. Designing and installing a new manhole roof takes up to six months. It would have to be determined at this time if the frame and cover could be lowered without replacing the roof. If manholes are to be raised, it would be in your best interest to design the grade to go up in 2" increments, as our steel riser rings come in 2" and not 3". If riser rings are used, new covers will have to be installed too, please provide enough time for Manitoba Hydro to order the appropriate materials
- E26.7 All construction operations within the vicinity of any electrical distribution are to take place in a manner so as to not damage or cause detriment to the integrity of the electrical distribution. Prior to the commencement of the above project, please visit [ClickBeforeYouDigMB.com](http://ClickBeforeYouDigMB.com) for locates of underground electrical distribution infrastructure and to obtain the necessary work clearance request forms. Construction operations are not to commence unless these conditions are adhered to.
- E26.8 Any damaged underground cable shall be replaced at contractor's cost.
- E26.9 This assessment is relative to the electrical distribution (66kV and below), other internal departments such as the gas department, communications, etc should be contacted directly for their assessment. Manitoba Hydro makes no representations or warranties in regard to the information contained within.

#### MEASUREMENT AND PAYMENT

- E26.10 No measurement and payment will be made for this work.

### **E27. SUPPLY AND INSTALLATION OF PRECAST ADJUSTABLE BIKE LANE CURBS**

#### DESCRIPTION

- E27.1 General
- E27.1.1 This Specification covers all operations relating to the pickup, delivery and installation of precast adjustable bike lane curbs.
- E27.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labor, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.

#### MATERIALS

- E27.2 Precast Adjustable Bike Lane Curbs with Drainage Channels
- E27.2.1 The precast adjustable bike lane curbs with drainage channels shall be picked up from the City of Winnipeg Archibald Yard located at 495 Archibald Street (16 units) and the City of

Winnipeg East Yard located at 960 Thomas Avenue (remainder of units required), and delivered to site for installation.

E27.3 Precast Adjustable Bike Lane Curb End Sections

E27.3.1 The precast adjustable bike lane curb end sections shall be picked up from the City of Winnipeg East Yard located at 960 Thomas Avenue (two units).

E27.4 15M Deformed Galvanized Rebar Dowels

E27.4.1 The 15M Deformed Galvanized Rebar Dowels shall be manufactured as per CW 3230 and in accordance with the requirements hereinafter specified.

(a) 450 mm in length.

E27.5 Neoprene Spacers

E27.5.1 The neoprene spacers shall be ¼ inch thick and shall be cut to match the shape of the precast adjustable bike lane curbs.

SUBMITTALS

E27.6 Prior to construction, submit the following to the Contract Administrator.

E27.6.1 The Contractor is to provide a sample of the neoprene spacers to the Contract Administrator for approval.

CONSTRUCTION METHODS

E27.7 Installation

E27.7.1 Installation of precast adjustable bike lane curbs with drainage channel and precast adjustable bike lane curb end sections to be completed using a flat bed truck with a crane arm following the process described below:

- (a) Place the precast adjustable bike lane curb with drainage channel or precast adjustable bike lane curb end section into final position as directed by the Contract Administrator.
- (b) Place the ¼ inch neoprene spacer between each precast adjustable bike lane curb.
- (c) Drill two pilot holes into pavement for 15M deformed galvanized rebar dowels.
- (d) Place next precast adjustable bike lane curb with drainage channel or precast adjustable bike lane curb end section (if applicable).
- (e) Install 15M deformed galvanized rebar dowels and hammer the dowels flush to the top of the unit.
- (f) Countersink the 15M deformed galvanized rebar dowels approximately 15mm below the top of the unit.
- (g) Place sealant at the top of the hole.

E27.7.2 The last precast adjustable bike lane curb with drainage channel or precast adjustable bike lane curb end section in each segment may not be at the exact location identified on the drawings. Contract Administrator to confirm location.

MEASUREMENT AND PAYMENT

E27.8 Supply and installation of precast adjustable bike lane curbs with drainage channel and precast adjustable bike lane curb end sections shall be measured on a unit basis and will be paid for at the contract Unit Price for the number of "Supply and Installation of Precast Adjustable Bike Lane Curbs with Drainage Channels" and "Supply and Installation of Precast Adjustable Bike Lane Curb End Sections" supplied and installed in accordance with this specification and accepted and measured by the Contract Administrator.

## **E28. REMOVAL OF EXISTING INTERLOCKING PAVING STONES**

### DESCRIPTION

#### E28.1 General

- E28.1.1 This specification shall supplement the City of Winnipeg Standard Construction Specification CW 3330 and shall cover all operations related to the removal of existing interlocking paving stones for reinstallation.

### CONSTRUCTION METHODS

- E28.2 Removal of existing interlocking paving stones (concrete pavers and clay pavers) shall include: removal of paving stones and base course material as required; disposal of base course material and paving stones.

### MEASUREMENT AND PAYMENT

- E28.2.1 Removal of existing interlocking paving stones will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Removal of Existing Interlocking Paving Stones". The area to be paid will be the total number of square metres removed and stockpiled in accordance with this specification, accepted and measured by the Contract Administrator.