



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 170-2018**

**2018 STREETS MAINTENANCE PROGRAM – ASPHALT OVERLAY, CONCRETE  
PAVEMENT PRESERVATIONS, PARTIAL DEPTH CONCRETE REPAIRS AND  
DIAMOND GRINDING**

**Note to Bidders: Please be aware of revisions to B14.4**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

- B1.1 2018 Streets Maintenance Program – Asphalt Overlay, Concrete Pavement Preservations, Partial Depth Concrete Repairs and Diamond Grinding

### **B2. SUBMISSION DEADLINE**

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, May 17, 2018.
- B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.
- B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

### **B3. SITE INVESTIGATION**

- B3.1 Further to C3.1, the Bidder may view the Site without making an appointment.
- B3.2 The Bidder is advised that access to the Rapid Transit Corridor is restricted to public vehicles but the site can be viewed from publicly accessible streets, sidewalks and trails.

### **B4. ENQUIRIES**

- B4.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.
- B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.
- B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.
- B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.
- B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

### **B5. CONFIDENTIALITY**

- B5.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:
- (a) was known to the Bidder before receipt hereof; or
  - (b) becomes publicly known other than through the Bidder; or
  - (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.
- B5.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Bid Opportunity to the media or any member of the public without the prior written authorization of the Contract Administrator.

## **B6. ADDENDA**

- B6.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.
- B6.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B6.3 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgmt/bidopp.asp>
- B6.4 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B6.5 The Bidder shall acknowledge receipt of each addendum in Paragraph 9 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

## **B7. SUBSTITUTES**

- B7.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B7.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B7.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B7.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
  - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
  - (c) identify any anticipated cost or time savings that may be associated with the substitute;
  - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
  - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B7.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B7.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.
- B7.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and

obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.

- B7.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B7.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B17.
- B7.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

## **B8. BID COMPONENTS**

- B8.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
  - (b) Form B: Prices, hard copy;
  - (c) Bid Security
    - (i) Form G1: Bid Bond and Agreement to Bond, or  
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or  
a certified cheque or draft;
- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely.
- B8.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B8.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.
- B8.4.2 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.
- B8.5 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.
- B8.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B17.1(a).
- B8.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B8.8 Bids shall be submitted to:
- The City of Winnipeg  
Corporate Finance Department  
Materials Management Division  
185 King Street, Main Floor  
Winnipeg MB R3B 1J1

## **B9. BID**

- B9.1 The Bidder shall complete Form A: Bid, making all required entries.
- B9.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;
  - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
  - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
  - (d) if the Bidder is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.
- B9.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B9.4 Paragraph 12 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;
  - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
  - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, 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.
- B9.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.
- B9.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

## **B10. PRICES**

- B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B10.1.1 For the convenience of Bidders, and pursuant to B8.4.2 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 Bid Opportunity on the Bid Opportunities page at the Materials Management Division website at <http://www.winnipeg.ca/matmgt/>
- B10.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B10.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

## **B11. DISCLOSURE**

B11.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B11.2 The Persons are:

- (a) N/A

## **B12. QUALIFICATION**

B12.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and
- (b) be financially capable of carrying out the terms of the Contract; and
- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

B12.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>

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

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

B12.4 Further to B12.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:

- (a) Written confirmation of a safety and health certification meeting SAFE Work Manitoba's SAFE Work Certified Standard (e.g., COR™ and SECOR™) or
  - (i) a copy of their valid Manitoba COR certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
  - (ii) a copy of their valid Manitoba SECOR™ certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Small Employer Certificate of Recognition Program (SECOR™) administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program or
- (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information



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

B12.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B12.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

### **B13. BID SECURITY**

B13.1 The Bidder shall provide bid security in the form of:

- (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or
- (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
- (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.

B13.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.

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

B13.1.3 The Bidder shall sign the Bid Bond.

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

B13.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

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

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

B13.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

### **B14. OPENING OF BIDS AND RELEASE OF INFORMATION**

B14.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.

B14.1.1 Bidders or their representatives may attend.

- B14.1.2 Bids determined by the Manager of Materials, or his/her designate, to not include the bid security specified in B13 will not be read out.
- B14.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>
- B14.3 After award of Contract, the name(s) of the successful Bidder(s), 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 10 of Form A: Bid.
- B15.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 10 of Form A: Bid.

## **B16. WITHDRAWAL OF BIDS**

- B16.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B16.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B16.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B16.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
  - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
  - (c) if the notice has been given by any one of the persons specified in B16.1.3(b), declare the Bid withdrawn.
- B16.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B15.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to

all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

## **B17. EVALUATION OF BIDS**

B17.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation 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 B7.

B17.2 Further to B17.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.

B17.3 Further to B17.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.

B17.4 Further to B17.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B17.4.1 Further to B17.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

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 responsible and qualified, and the Bids are determined to be responsive.

B18.2.1 Without limiting the generality of B18.2, the City will have no obligation to award a Contract where:

- (a) the prices exceed the available City funds for the Work;
- (b) the prices are materially in excess of the prices received for similar work in the past;
- (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
- (d) only one Bid is received; or
- (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B18.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B17.

**B18.3.1** Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

## PART C - GENERAL CONDITIONS

### C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Construction* (Revision 2006 12 15) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](http://www.winnipeg.ca/matmgt/gen_cond.stm)
- C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

## **PART D - SUPPLEMENTAL CONDITIONS**

### **GENERAL**

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

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

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

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

- (a) Asphalt Overlay
  - (i) River Avenue from Donald Street to Osborne Street.
- (b) Asphalt Mill and Fill
  - (i) Donald Street and River Avenue Intersection
- (c) Concrete Pavement Preservation
  - (i) Rapid Transit Corridor from Main Street to Jubilee Avenue;
  - (ii) Vaughan Street from Ellice Avenue to Portage Avenue;
  - (iii) E/B William Stephenson Way from Israel Asper Way to Provencher Bridge;
  - (iv) W/B Sterling Lyon Parkway from Victor Lewis Drive to Kenaston Boulevard; and
  - (v) Westbrook Street Intersections between William Stephenson Way to Pioneer Avenue.
- (d) Diamond Grinding
  - (i) Rapid Transit Corridor from Main Street to Jubilee Avenue;
  - (ii) E/B William Stephenson Way from Israel Asper Way to Provencher Bridge; and
  - (iii) W/B Sterling Lyon Parkway from Victor Lewis Drive to Kenaston Boulevard.
- (e) Sidewalk Renewal
  - (i) River Avenue from Donald Street to Osborne Street;
  - (ii) Vaughan Street from Ellice Avenue to Portage Avenue;
  - (iii) Westbrook Street Intersections between William Stephenson Way to Pioneer Avenue; and
  - (iv) Rapid Transit Corridor at Fort Rouge Station.

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

- (a) Asphalt Overlay (no concrete repairs in the Donald Street Intersection)
  - (i) Asphalt milling
    - Donald Street Intersection;
  - (ii) Milling and asphalt patching of existing joints;
  - (iii) Renewal of concrete slabs and joints with full depth concrete repairs;
  - (iv) Renewal of existing curbs and sidewalks as required;
  - (v) Placement of asphalt overlay (Average thickness 65mm);
  - (vi) Minor underground rehabilitation works as required;
  - (vii) Adjustment of existing manhole(s) and catch basin(s) as required; and
  - (viii) Boulevard restoration.
- (b) Concrete Pavement Preservation
  - (i) Renewal of existing concrete joints through partial depth joint repair methods;
  - (ii) Renewal of existing concrete slabs and joints with full depth concrete repairs;
  - (iii) Renewal of existing curbs as required;

- (iv) Replacement of existing coloured concrete pedestrian crossings;
    - Westbrook Street
    - William Stephenson Way
  - (v) Crack routing and sealing;
  - (vi) Adjustment of existing manhole(s) and catch basin(s) as required; and
  - (vii) Boulevard restorations.
- (c) Diamond Grinding
- (i) Initial IRI profiling of existing pavement;
  - (ii) Grinding of existing mainline concrete pavements;
  - (iii) Final profiling for acceptance; and
  - (iv) Joint sealing following the completion of diamond grinding.
- (d) Partial Depth Concrete Sidewalk and Detectable Tile Renewal (Fort Rouge Station)
- (i) Partial depth sidewalk renewal; and
  - (ii) Detectable tile renewal.
- (e) Sidewalk Renewal
- (i) Removal of existing trees;
  - (ii) 100mm concrete sidewalk with block-outs for paving stones;
  - (iii) 180mm concrete barrier curb renewal;
  - (iv) Installation of detectable warning tiles;
  - (v) Installation of interlocking paving stones; and
  - (vi) Supply and install tree grates.

### **D3. CONTRACT ADMINISTRATOR**

D3.1 The Contract Administrator is Stantec Consulting Ltd., represented by:

Dylan Mourant, C.E.T.

Transportation Project Manager

Telephone No. (204) 478-8969

Email Address [dylan.mourant@stantec.com](mailto:dylan.mourant@stantec.com)

D3.2 At the pre-construction meeting, Dylan Mourant, C.E.T. will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

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

### **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 D3.1.
- D6.3 Notwithstanding C21, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following:
- 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 B8.**

## **D7. FURNISHING OF DOCUMENTS**

- D7.1 Upon award of the Contract, the Contractor will be provided with five (5) complete sets of the Bid Opportunity. If the Contractor requires additional sets of the Bid Opportunity, they will be supplied to him/her at cost.

## **SUBMISSIONS**

### **D8. AUTHORITY TO CARRY ON BUSINESS**

- D8.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor



does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

#### **D9. SAFE WORK PLAN**

- D9.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D9.2 The Safe Work Plan 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 (\$5,000,000.00) 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. PERFORMANCE SECURITY**

- D11.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:
- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or
  - (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or

- (c) a certified cheque or draft payable to “The City of Winnipeg”, drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.

D11.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D11.2 If the bid security provided in his/her Bid was not a certified cheque or draft pursuant to B13.1(c), the Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site and in no event later than the date specified in the C4.1 for the return of the executed Contract.

## **D12. SUBCONTRACTOR LIST**

D12.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at 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 Gantt chart for the Work acceptable to the Contract Administrator.

D13.3 Further to D13.2(a), 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 performance security specified in D11;
  - (vii) the subcontractor list specified in D12;
  - (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 June 13, 2018

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. RESTRICTED WORK HOURS**

D15.1 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.

D15.2 The following work hour restrictions shall apply.

D15.2.1 Diamond Grinding on the Rapid Transit Corridor shall occur between 1800 to 0600 hours with the following exceptions.

- (a) Canada Day – No grinding permitted
- (b) Winnipeg Blue Bomber games – No grinding permitted
- (c) Diamond grinding occurring adjacent to the condominiums just east of the Harkness Station shall occur between 1800 to 2100 hours.

D15.2.2 Diamond Grinding on Sterling Lyon Parkway between Victor Lewis and Lorimer Boulevard shall occur between 0700 and 2000 hours and between Lorimer Boulevard and Kenaston between 1800 to 0600 hours.

D15.2.3 Diamond Grinding on William Stephenson Way will be restricted during Winnipeg Goldeyes games and Canada Day.

D15.2.4 Mill and Fill works on the River Avenue Intersection with Donald Street shall be completed during a single weekend between 1800 on Friday and 0700 hours the following Monday, excluding Canada Day.

#### **D16. WORK BY OTHERS**

D16.1 Work by others on or near the Site will include but not necessarily be limited to:

- (a) City of Winnipeg Traffic Services Department – Provide necessary regulatory signs and replacement of signs and paint lines. The Contractor is expected to cooperate with the City of Winnipeg.
- (b) City of Winnipeg Traffic Signals – Traffic signal loops may require decommissioning and reinstallation. The Contractor is expected to cooperate with the City of Winnipeg.
- (c) Manitoba Hydro – Manhole adjustments. The contractor is expected to coordinate with Manitoba Hydro for the adjustment of any hydro manholes or required riser rings.
- (d) Manitoba Hydro – Street Lights. The contractor is expected to cooperate with Manitoba Hydro for the relocation of street lights in the sidewalk along Vaughan Street between Ellice Avenue and Portage Avenue.
- (e) Bell MTS – Manhole adjustments. The contractor is expected to coordinate with Bell MTS for the adjustment of any utility manholes or required riser rings.
- (f) Winnipeg Transit – The Contractor will be required to coordinate with Winnipeg Transit to maintain service and minimize disruption during construction.
- (g) CP Railway – The Contractor is expected to cooperate with CP Railway for any proposed works within the CP right of way.

- (h) CN Railway – The Contractor is expected to cooperate with CP Railway for any proposed works within the CN right of way.

D16.2 The contractor will be required to coordinate all utility watches as required.

## D17. SEQUENCE OF WORK

D17.1 Further to C6.1, the proposed sequence of work shall be as follows and any modifications or alternatives must be approved by the Contract Administrator:

### D17.1.1 Rapid Transit Corridor

- (a) Work will be completed using staged work zones and traffic will be controlled using a combination of mobile, temporary traffic signals and signage. Construction phasing and staging shall be in accordance with the Rapid Transit Corridor Staging Drawing, or as approved by the Contract Administrator. *All concrete works must be completed prior to Labour Day, September 3, 2018.*

D17.1.2 River Avenue, River and Donald Street Intersection - Phasing and staging of the work may be modified with the approval of the Contract Administrator. One through lane and one parking lane will be maintained on River Avenue at all times. Work on the Donald Street Intersection shall be completed between 1800 on Friday and 0700 the following Monday and asphalt paving shall commence immediately following the completion of milling operations within the same hours. The work on the Donald Street Intersection is to be completed within a single weekend.

- (a) Phase 1 – River Avenue concrete works  
(b) Phase 2 – Asphalt Overlay on River Avenue  
(c) Phase 3 – Asphalt Planing and Asphalt Overlay – River Avenue and Donald Street Intersection

D17.1.3 Vaughan Street – all work in private and public approaches are to be staged in such a manner as to maintain access unless a complete closure has been approved by the Contract Administrator.

- (a) Stage 1 – Median lane concrete works  
(b) Stage 2 – West curb lane concrete and sidewalk works  
(c) Stage 3 – East curb lane concrete and sidewalk works

D17.1.4 E/B William Stephenson - At least one lane each direction shall be maintained on William Stephenson Way, Israel Asper Way and Waterfront Drive throughout construction.

- (a) Phase 1 – Concrete Works  
(b) Phase 2 – Diamond Grinding

### D17.1.5 W/B Sterling Lyon Parkway

- (a) Phase 1 – Concrete Works
- Concrete pavement renewals will be completed on mainline through lanes and auxiliary lanes.
- (b) Phase 2 – Diamond Grinding
- Diamond Grinding will be completed on existing mainline through lanes only.
  - Diamond Grinding operations will terminate within 15m of either side of a crossed rail line.

- (c) Working within Railway Rights of Way

The project limits include both CN and CP railway crossings. An *advance notice* of 4 weeks will be required for any work within the rail right of ways to allow time for the Contract Administrator to coordinate appropriate flagging and track control with the respective railways. Required approvals, flagging and track control *must* be in place prior to commencing any work within the rail right of ways. CN and CP procedures

and guidelines will be followed at all times while working within their respective right of ways.

- D17.2 Construction activity excluding Diamond Grinding is to be limited to three (3) work areas at a time. No construction shall commence on the subsequent work areas until all work is completed in one of the three work areas.
- D17.3 For the purposes of D17.2 William Stephenson Way from Isreal Asper Way to the Provencher Bridge and Westbrook Street between William Stephenson Way and Pioneer Avenue shall count as a single work area.
- D17.4 The Contractor will be required to grow the work zone for Diamond Grinding operations as the work progresses in order to maintain as much roadway to vehicular traffic as possible.
- D17.5 Placement of topsoil and grading of all boulevard and median areas shall be completed prior to commencing construction of asphalt overlays, including scratch courses.
- D17.6 The partial depth concrete repairs are to be commenced prior to full depth concrete repairs and at all times precede the full depth concrete repairs within the work area.
- D17.7 Where required, Diamond Grinding shall commence only when all concrete surface works have been completed in the work area, within the limits of a single phase or as directed by the Contract Administrator.
- D17.8 Access to all public and private approaches is to be maintained throughout construction in all project locations unless a closure has been approved by the Contract Administrator.

**D18. CRITICAL STAGES**

- D18.1 All concrete works on the Rapid Transit Corridor must be completed prior to Labour Day, September 3, 2018.

**D19. SUBSTANTIAL PERFORMANCE**

- D19.1 The Contractor shall achieve Substantial Performance by September 21, 2018.
- D19.1 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.
- D19.2 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.

**D20. TOTAL PERFORMANCE**

- D20.1 The Contractor shall achieve Total Performance by September 28, 2018.
- D20.2 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.
- D20.3 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.

## **D21. LIQUIDATED DAMAGES**

- D21.1 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) Critical Stage D.18.1 – Two Thousand dollars (\$2,000.00)
  - (b) Substantial Performance – Three Thousand dollars (\$3,000.00)
  - (c) Total Performance – One Thousand Five Hundred dollars (\$1,500.00)
- D21.2 The amounts specified for liquidated damages in D21.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve critical stages, Substantial Performance or Total Performance by the days fixed herein for same.
- D21.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

## **D22. SCHEDULED MAINTENANCE**

- D22.1 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 CW 3250-R7;
  - (b) Seeding as specified in CW 3520-R7;
- D22.2 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**

### **D23. JOB MEETINGS**

- D23.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.
- D23.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

### **D24. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)**

- D24.1 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).

### **D25. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS**

- D25.1 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**

### **D26. PAYMENT**

D26.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

## **WARRANTY**

### **D27. WARRANTY**

D27.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) years thereafter unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

D27.2 Notwithstanding C13.2 or D27.1, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if:

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

D27.2.1 In such case the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

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

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

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

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

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

BID OPPORTUNITY NO. 170-2018

2018 Streets Maintenance Program – Asphalt Overlay, Concrete Pavement Preservations, Partial Depth Concrete Repairs and Diamond Grinding  
which is by reference made part hereof and is hereinafter referred to as the "Contract".

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

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

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

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

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

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



SIGNED AND SEALED  
in the presence of:

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

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

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

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

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

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

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT  
(PERFORMANCE SECURITY)  
(See D11)**

\_\_\_\_\_  
(Date)

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

RE: PERFORMANCE SECURITY – BID OPPORTUNITY NO. 170-2018

2018 Streets Maintenance Program – Asphalt Overlay, Concrete Pavement Preservations, Partial  
Depth Concrete Repairs and Diamond Grinding

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

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

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

\_\_\_\_\_ Canadian dollars.

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

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

Partial drawings are permitted.

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

\_\_\_\_\_  
(Address)

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

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

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

\_\_\_\_\_  
(Date)

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

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

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

\_\_\_\_\_  
(Name of bank or financial institution)

Per: \_\_\_\_\_  
(Authorized Signing Officer)

Per: \_\_\_\_\_  
(Authorized Signing Officer)

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

2018 Streets Maintenance Program – Asphalt Overlay, Concrete Pavement Preservations, Partial Depth  
 Concrete Repairs and Diamond Grinding

<u>Portion of the Work</u>	<u>Name</u>	<u>Address</u>
<b>SURFACE WORKS:</b>		
Supply of Materials:		
Concrete		
Asphalt		
Base Course and Sub-Base		
Seed		
Interlocking Paving Stones		
Installation and Placement:		
Concrete		
Asphalt		
Base		
Interlocking Paving Stones		
Inlaid Longitudinal and Transverse Line Markings		
<b>UNDERGROUND WORKS:</b>		
Supply of Materials:		
Installation/Placement:		
<b>OTHERS:</b>		

## PART E - SPECIFICATIONS

### GENERAL

#### E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Specifications shall apply to the Work.
- E1.2 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Spec/Default.stm>
- E1.2.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.2.3 Further to C2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.3 The following are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
G001	Cover Page, Drawing Index and Site Location Map	A1
C101	River Avenue – STA 1+000 to STA 1+250	11x17
C102	River Avenue – STA 1+250 to STA 1+550	11x17
C103	River Avenue – STA 1+550 to STA 1+850	11x17
C104	Vaughan Street – STA 1+000 to STA 1+150	11x17
C105	Vaughan Street – STA 1+150 to STA 1+232	11x17
C106	Vaughan Street – Details	11x17
C107	William Stephenson Way – STA 1+000 to STA 1+300	11x17
C108	Sterling Lyon Parkway – STA 1+000 to STA 1+250	11x17
C109	Sterling Lyon Parkway – STA 1+250 to STA 1+550	11x17
C110	Sterling Lyon Parkway – STA 1+550 to STA 1+850	11x17
C111	Sterling Lyon Parkway – STA 1+850 to STA 2+100	11x17
C112	Sterling Lyon Parkway – STA 2+100 to STA 2+400	11x17
C113	Sterling Lyon Parkway – STA 2+400 to STA 2+690	11x17
C114	Sterling Lyon Parkway – STA 2+690 to STA 2+725	11x17
C115	Westbrook Street – STA 2+690 to STA 2+725	11x17
C116	Rapid Transit Corridor – STA 9+950 to STA 10+300	11x17
C117	Rapid Transit Corridor – STA 10+300 to STA 11+000	11x17
C118	Rapid Transit Corridor – STA 11+000 to STA 11+700	11x17
C119	Rapid Transit Corridor – STA 11+700 to STA 12+400	11x17
C120	Rapid Transit Corridor – STA 12+400 to STA 13+050	11x17
C121	Rapid Transit Corridor – STA 13+050 to STA 13+519	11x17
C122	Rapid Transit Corridor Staging – Jubilee Avenue to Main Street	11x17

#### 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:
- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.

- (b) 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.
- (c) 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.
- (d) 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.
- (e) 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.

- (i) The Rapid Transit Corridor will not be considered a Designated Construction Zone and the Contractor will be responsible for signage. A reduced speed limit through the work area to 50 km/hr is permitted.
- (i) The City of Winnipeg will provide the necessary signage for temporary Transit stops and the detour external of the Rapid Transit Corridor.

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.

E3.3 Mobile Temporary Traffic Signals will be provided and programmed by the Contract Administrator.

#### **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 in each direction during construction, 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 As an exception to E4.1.1, Transit Traffic on the Rapid Transit Corridor between the Harkness Station and Main Street will be detoured to avoid the work zone during construction in this location.

- (a) The detour will be in place for a maximum of five calendar days to facilitate concrete repairs. Temporary bus-stop locations will be set-up by the City.

E4.1.3 As an exception to E4.1.1, two way traffic on the Rapid Transit Corridor, between the Harkness Station and Jubilee Avenue, will be maintained on a single lane past active work zones. This traffic will be controlled using a combination of signage and mobile, temporary traffic signals installed outside of either end of the work zone.

E4.1.4 Where turn lanes exist, an additional lane to accommodate the left turn storage lane shall be maintained at all times.

E4.1.5 Establishment of temporary median crossovers required for staging on Vaughan Street will be completed by Traffic Services.

E4.1.6 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 shall be maintained at all times 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.

E4.1.7 Flag persons will be necessary to maintain the flow of traffic during certain work operations.

E4.1.8 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.

E4.1.9 Pedestrian access must be maintained at all times.

E4.1.10 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:

### **River Avenue from Donald Street to Osborne Street.**

<i>Collection Day(s):</i>	<b>Monday</b>
<i>Collection Time:</i>	<b>7:00 am</b>
<i>Common Collection Area:</i>	<b>To be confirmed</b>

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 adjacent to all excavations to be left open overnight or between construction activities. 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.

E6.2 Safe and easy access to and egress from all Transit facilities must be maintained during construction.

## **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. PATCHING OF EXISTING PAVEMENT**

### **DESCRIPTION**

E9.1 General

E9.1.1 This specification covers patching of existing concrete pavement in preparation for an asphalt overlay.



- E9.1.2 Referenced Standard Construction Specifications
- (a) CW 3110 – Sub-Grade, Sub-Base and Base Course Construction.
  - (b) CW 3130 – Supply and Installation of Geotextile Fabrics.
  - (c) CW 3410 – Asphaltic Concrete Pavement Works.

#### MATERIALS

- E9.2 Crushed Sub-Base Material
- E9.2.1 Crushed Sub-base material will have a maximum aggregate size of 50 millimetre and be supplied in accordance with Section 2.1 of CW 3110.
- E9.3 Geotextile Fabric
- E9.3.1 Geotextile fabric will be supplied in accordance with Section 2 of CW 3130.
- E9.4 Asphalt Material
- E9.4.1 Asphalt material will be Type 1A and will be supplied in accordance with Sections 5 and 6 of CW 3410.

#### CONSTRUCTION METHODS

- E9.5 General
- E9.5.1 Remove existing concrete pavement to a minimum width of 1.5 metres at locations as shown on the Drawings or as directed by the Contract Administrator in accordance with Section 3.1 of Specification CW 3110.
- E9.5.2 Excavate to a depth of 350 millimetres below the top of the existing pavement.
- E9.5.3 Compact existing sub-grade to a minimum of 95% Standard Proctor Density.
- E9.5.4 Place separation/reinforcement geotextile fabric in accordance with Specification CW 3130.
- E9.5.5 Place and compact crushed sub-base material in accordance with CW 3110 to a 300 millimetres compacted depth. Compact to a minimum of 100% Standard Proctor Density.
- E9.5.6 Place and compact asphalt material to a 50 millimetres compacted depth matching the top of the existing concrete pavement. Compact to an average of 95% percent of the 75 Blow Marshall Density of the paving mixture with no individual test being less than 90% percent.
- E9.5.7 Each layer must be levelled and accepted by the Contract Administrator before the succeeding layer may be placed.
- E9.5.8 Additional excavation and placement of sub-base material beyond the identified pavement structure will be completed in accordance with CW 3110 as directed by the Contract Administrator.

#### MEASUREMENT AND PAYMENT

- E9.6 Pavement Patching
- E9.6.1 Pavement patching will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Pavement Patching". The area to be paid for will be the total number of square metres of pavement patched in accordance with this specification, accepted and measured by the Contract Administrator.

## **E10. SUPPLY AND INSTALLATION OF PAVEMENT REPAIR FABRIC**

### DESCRIPTION

#### E10.1 General

E10.1.1 This specification covers the supply and installation of pavement repair fabric.

#### E10.1.2 Referenced Standard Construction

(a) CW 3130 – Supply and Installation of Geotextile Fabrics.

### MATERIALS

#### E10.2 Storage and Handling

E10.2.1 Store and handle material in accordance with Section 2 of CW 3130.

#### E10.3 Pavement Repair Fabric

E10.3.1 Pavement repair fabric will be Glas Grid Road Reinforcement Mesh - Style 8501.

### CONSTRUCTION METHODS

#### E10.4 General

E10.4.1 Install pavement repair fabric at random locations as directed by the Contract Administrator.

E10.4.2 The extent of the placement limits and quantities required will be determined by the Contract Administrator and provided 48 hours prior to the placement of asphalt.

E10.4.3 Proceed with installation upon completion and acceptance of the asphalt levelling course.

E10.4.4 Install fabric in accordance with the manufacturer's specifications and recommendations.

E10.4.5 Only construction equipment required to place the final asphalt surface course will be allowed to travel on the exposed fabric.

E10.4.6 Replace damaged or improperly placed fabric.

E10.4.7 Ensure temperature of the asphalt material does not exceed the melting point of the fabric.

### MEASUREMENT AND PAYMENT

#### E10.5 Pavement Repair Fabric

E10.5.1 The supply and installation of the pavement repair fabric will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Pavement Repair Fabric". The area to be paid for will be the total number of square metres of pavement repair fabric supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

## **E11. PARTIAL DEPTH ASPHALT PATCHING OF EXISTING JOINTS**

### DESCRIPTION

#### E11.1 General

E11.1.1 This specification covers the Partial Depth Patching of existing concrete pavement joints.

#### E11.2 Referenced Standard Construction Specifications

(a) CW 3230 – Full-Depth Patching of Existing Slabs and Joints

(b) CW 3410 – Asphalt Concrete Pavement Works

## MATERIALS

### E11.3 Asphalt Materials

E11.3.1 Asphalt material will be Type 1A supplied in accordance with Sections 5 and 6 of CW 3410.

### E11.4 Tack Coat

E11.4.1 Tack Coat will be undiluted SS-1 emulsified asphalt.

## CONSTRUCTION METHODS

### E11.5 Planing of Joints

E11.5.1 Plane existing joints designated by the Contract Administrator to a minimum depth of 50 mm and a maximum of depth 90 mm to remove ravelled or deteriorated concrete. Width of joint to be planed will vary with depth.

E11.5.2 Should the depth of joint deterioration exceed the maximum indicated, as determined by the Contract Administrator, the entire joint shall be renewed and paid for in accordance with CW 3230 as a full depth joint repair. Planing completed shall be paid for in accordance with Section 14.7 of this specification

E11.5.3 Dispose of material in accordance with Section 3.4 of CW 1130.

### E11.6 Placement of Asphalt Material

E11.6.1 Prior to placement of asphalt material, the planed joint shall be swept or blow clean of any loose material.

E11.6.2 Apply Tack Coat uniformly on the entire surface of the planed joint. The application rate shall not exceed 0.23 litres per square metre. The planed joint shall be dry prior to applying the tack coat.

E11.6.3 Place and compact asphalt material in accordance with Section 9.3 of CW 3410 to the satisfaction of the Contract Administrator. The finished elevation of the patch shall be flush with surrounding pavement surface.

E11.6.4 Compact the asphalt material to an average 95% of the 75 blow Marshall Density of the paving mixture with no individual test being less than 90 %.

E11.6.5 Ensure that no traffic is allowed to travel over the patched area until the asphalt has cooled to atmospheric temperature.

## MEASUREMENT AND PAYMENT

### E11.7 Partial Depth Planing of Existing Joints

E11.7.1 Partial Depth Planing of Existing Joints will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Partial Depth Planing of Existing Joints". The area to be paid for will be the total number of square metres of joints planed in accordance with this specification, accepted and measured by the Contract Administrator.

### E11.8 Asphalt Patching of Partial Depth Joints

E11.9 Asphalt Patching of Partial Depth Joints will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Asphalt Patching of Partial Depth Joints". The area to be paid for will be the total number of square metres of joints patched in accordance with this specification, accepted, and measured by the Contract Administrator.

## **E12. SALT TOLERANT GRASS SEEDING**

### DESCRIPTION

- E12.1 Further to CW 3520 and CW3540, this specification shall cover sub-grade preparation and the supply and placement of Salt Tolerant Grass Seed.

### MATERIALS

- E12.2 Salt Tolerant Grass Seed

- E12.2.1 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

- E12.3 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

- E12.4 Preparation of Existing Grade

- E12.4.1 Prior to placing topsoil, in areas to be seeded greater in width than 600mm, prepare the existing sub-grade by scarifying to a minimum depth of 75mm and to a maximum depth of 100mm to the satisfaction of the Contract Administrator.

- E12.4.2 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).

- E12.5 Salt Tolerant Grass Seeding

- E12.5.1 Salt Tolerant Grass Seed shall be sown at a rate of 2.2 kilograms per 100 square meters.

### MEASUREMENT AND PAYMENT

- E12.6 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.

## **E13. TREE REMOVAL**

### DESCRIPTION

- E13.1 General

- E13.1.1 Further to CW 3010 and the City of Winnipeg "Tree Removal Guidelines", this specification shall cover the removal of trees as specified on the Drawings and as directed by the Contract Administrator.

## CONSTRUCTION METHODS

- E13.2 Remove trees in accordance with CW 3010.

## MEASUREMENT AND PAYMENT

- E13.3 Tree removal will be measured on a unit basis and will be paid for at the Contract Unit Price per unit for "Tree Removal," which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification and accepted by the Contract Administrator.

## **E14. DIAMOND GRINDING**

### DESCRIPTION

- E14.1 This specification covers Diamond Grinding of existing concrete pavements.

### EQUIPMENT

- E14.2 Grinding Machine

- E14.2.1 The grinding machine shall be self-propelled complete with a mounted grinding head with diamond blades capable of grinding a minimum of 1.2 meters designed for grinding and texturing pavement. The machine shall have a minimum total weight of 15,876 kilograms (including the grinding head) and an effective wheel base of no less than 3.65 meters.
- E14.2.2 The grinding machine shall have a positive means of vacuuming the grinding slurry residue from the pavement surface, leaving the pavement surface in a clean, near-dry condition.
- E14.2.3 All equipment shall be maintained to ensure it is in proper working order. The "roundness" of the match and depth control wheels of the grinding machine shall be regularly monitored; any wheels found to be out of round shall be immediately replaced.
- E14.2.4 Any equipment that causes ravelling, aggregate fractures, or disturbance to the pavement joints shall not be permitted.
- E14.3 Inertial Profiler
- E14.3.1 The Inertial Profiler shall conform to the Class 1 requirements in accordance with the latest revision of ASTM E-950.
- E14.3.2 The Inertial Profiler must be properly calibrated and certified for use for the current construction season. Acceptable certification shall be Mn/DOT or as approved by the Project Manager.
- E14.3.3 Documentation of the certification must be provided to the Project Manager prior to commencement of any measurements.

## CONSTRUCTION METHODS

- E14.4 Pavement Grinding

- E14.4.1 The pavement grinding shall be scheduled and completed on the mainline pavement lanes in a manner that produces a neat, uniform finished surface.
- E14.4.2 The pavement grinding shall not commence on until the Partial and Full-Depth Repairs have been completed.
- E14.4.3 The pavement shall be ground in the longitudinal direction parallel to the pavement center line.
- E14.4.4 The pavement grinding shall commence on the low side of the pavement.
- E14.4.5 Passes of the grinding head shall not overlap more than 25mm.

- E14.4.6 For pavements with existing curbs, grinding shall be completed to within 150 mm of the face of curb.
- E14.4.7 Grinding shall be completed in a manner that removes joint or crack faults and maintains lateral drainage and constant cross slope. The maximum allowable difference between the adjacent sides of the joints and cracks shall be 2 mm.
- E14.4.8 The maximum average grinding depth shall not exceed 20 mm.
- E14.4.9 The Contractor shall be responsible for arranging and supplying all water required for the project. Water obtained for the City of Winnipeg shall be in accordance with E8.
- E14.4.10 The edges of adjacent pavement shoulders and auxiliary lanes shall be feathered along the edge of the mainline grinding as required to provide drainage. Feathering shall be required when the mainline grinding leaves a vertical lip greater than 5 mm to the adjacent pavement surface.
- E14.4.11 Existing structures such as manholes, curb and gutter inlets, and water valves shall be feathered to the satisfaction of the Project Manager.
- E14.4.12 When directed by the Project Manager, the grinding shall extend 5 meters into an existing asphalt surface.
- E14.5 Final Surface Finish
- E14.5.1 The grinding process shall produce a pavement surface that is true in grade and uniform in appearance with a longitudinal line-type texture. The line-type texture shall contain grooves that are parallel to the centerline and present a narrow ridge corduroy type appearance. The peaks of ridges shall be a minimum 1.5 mm to a maximum of 3.0 mm higher than the ground pavement surface. The finished grooves shall be evenly spaced 2 to 3 mm apart.
- E14.5.2 The grinding process shall produce a longitudinal line-type texture that is straight and free of deviations. Any deviation from a straight longitudinal line-type texture, identified at the sole discretion of the Project Manager, shall be re-ground at the expense of the Contractor.
- E14.5.3 The Contractor shall be responsible for the selection of the number and type of blades to be used to provide the proper surface finish for the aggregate type present. Unbroken fins shall be removed to the satisfaction of the Project Manager.
- E14.5.4 The Contractor shall be responsible to determine the proper sequence of operations to meet the specification. Multiple passes may be required to meet the specifications.
- E14.5.5 A minimum of 98% of the pavement surface area shall be ground or textured.
- E14.5.6 Localized depressed pavement areas will be exempt from texture and smoothness requirements. Additional grinding of these areas may be required and will be as directed by the Project Manager.
- E14.6 Slurry Removal
- E14.6.1 The Contractor shall remove and dispose of all grinding slurry from the operations in a manner and at a location to satisfy environmental regulations.
- E14.6.2 All slurry removal operations shall be approved by the Project Manager.
- E14.6.3 No grinding slurry shall be allowed to flow across lanes occupied by traffic or enter into closed drainage systems.
- E14.6.4 All grinding slurry for this project shall be disposed of off-site, with the exemptions of areas on the grinding slurry from these areas can be deposited on the pavement side slopes.
- E14.7 Slurry Handling
- E14.7.1 The grinding slurry to be removed from the site shall be collected in water-tight haul units and transported to disposal facilities as listed in E12.8 of this specification.

#### E14.8 Slurry Disposal Sites

- E14.8.1 The Contractor shall dispose of grinding slurry at the designated disposal sites provided by the City of Winnipeg. The disposal sites are as follows; (a) City of Winnipeg South End Pollution Control Centre snow dump site. (b) City of Winnipeg McPhillips Street snow dump site
- E14.8.2 The Contractor shall contact the Streets Maintenance Division Area Supervisor to obtain access. The Contractor shall ensure that these sites are only utilized for disposal of the material from this project. The sites shall be secured at all times.
- E14.8.3 Prior to grinding operations the Contractor shall be responsible for installing temporary barriers at the disposal sites in order to hold back slurry from meander throughout the site. The Project Manager and the Contractor will develop a layout of the barriers. The cost of supplying and installing the barrier system will be at the expense of the Contractor.
- E14.8.4 At completion of the grinding disposal operations, the Contractor shall clean up the disposal sites to the satisfaction of the Project Manager.
- E14.8.5 The site clean-up shall include removal of excess water, removal of remaining grinding solids and regarding of the site to the original condition prior to commencement of the grinding disposal operations.

#### E14.9 Smoothness Requirements

- E14.9.1 The Contractor shall be responsible for all profile testing to meet the requirements of this contract.
- E14.9.2 All testing shall be continuous and be run in the direction of the traffic. Stationing shall be provided by the Project Manager for all testing.
- E14.9.3 The Profiler shall be operated at optimum speed as defined by the manufacturer.
- E14.9.4 Prior to performing any grinding work, the Contractor shall provide a control profilograph trace. The control trace will be used to identify the required smoothness for the project.
- E14.9.5 All testing shall be reported in 100 metre segments complete with a summary of all dip and bump measurements and locations.
- E14.9.6 Upon completion of the grinding operations, acceptance measurements shall be completed.
- E14.9.7 The contractor shall run the profile in both wheel paths of each individual lane and average the resulting IRI results to determine acceptance. The profiles shall be run 0.9 meters from each lane line. A guide shall be used to ensure proper alignment of the profile. The Project Manager will have a representative present during all testing periods.
- E14.9.8 The finished surface smoothness requirements shall be as follows;
- (a) 70km/hr or greater Posted Speed Locations - IRI equal to or less than 1.20 m/km.
  - (b) 50km/hr Posted Speed Locations – IRI equal to or less than 1.60m/km
  - (c) Each lane will be evaluated separately in 100 metre segments.
- E14.9.9 The Contractor shall regrind, at no additional cost, any areas found not meeting the smoothness requirements.
- E14.9.10 The finished surface smoothness requirements shall not include any localized bumps exceeding 10 mm in 7.5 metres where the areas have reached the maximum removal depth. These areas shall be reviewed and approved by the Project Manager.
- E14.9.11 Areas of depressed pavement due to subsidence of other localized causes where the areas have reached the maximum removal depth shall also be excluded from the finished surface smoothness requirements. These areas shall be reviewed and approved by the Project Manager.

E14.9.12 The Contractor shall provide a print out of all smoothness measurements, a profilogram and a copy of the raw profile data in an unfiltered ERD file format.

**MEASUREMENT AND PAYMENT**

E14.10 Diamond Grinding will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Diamond Grinding". The area to be paid for will be the total number of square metres of pavement surface ground, textured and grinding slurry hauled and disposed of at offsite locations in accordance with this specification, accepted and measured by the Project Manager.

E14.11 Pavement edges of adjacent pavement shoulders and auxiliary lanes identified by the Project Manager to be feathered will be measured and included in the payment at one metre width regardless of actual grinding width required to feather the lip. The minimum length of a feather pass will be 30 metres.

E14.12 No additional measurement or payment shall be made if multiple passes of the grinding equipment are required to meet the smoothness requirements. The area of the pavement ground will only be considered for payment once, unless grinding is directed by the Project Manager.

E14.13 No additional measurement or payment will be made for testing to net the smoothness requirements of this contract.

**E15. PARTIAL DEPTH CONCRETE REPAIRS**

**DESCRIPTION**

E15.1 This specification shall cover all operations relating to partial depth concrete repairs of concrete pavement joints. 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 other things necessary for and incidental to the satisfactory performance and completion of all as hereinafter specified.

E15.2 Referenced Standard Construction Specifications  
 (a) CW 3310 – Portland Cement Concrete Pavement Works.

**MATERIAL**

E15.3 Patching Material to be used for the partial depth repairs is Five Star Highway Patch or VersaSpeed. This material shall be covered and kept out of direct sunlight when being stored. No substitutions are allowed for this material.

**E15.4 PATCHING MATERIAL MIX DESIGN (ALTERNATIVE 1)**

E15.4.1 Mixing water used for batching cementitious patching material will be clean and potable water. Water used for mixing must not exceed 25° Celsius.

E15.4.2 The cementitious patching material may be extended by the addition of coarse aggregate meeting the gradation required of the table below. The material may be extended to a maximum of 50% by weight of cementitious material.

E15.4.3 Batching of material to be conducted as per manufacturers instruction

Aggregate Extender Gradation	
Sieve [mm]	% Passing
10.0	100
5.0	0 – 15
2.5	0 – 5



0.080	0 - 1
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**E15.5 PATCHING MATERIAL MIX DESIGN (ALTERNATIVE 2)**

**E15.5.1** Alternative Patching Materials Mix Design to Alternative 1 meeting all of the requirements listed below will be considered and reviewed by the Project Manager for acceptance as a Patching Material.

- (a) The Alternative Patching Material Mix Design shall be performed by a certified third party laboratory according to CSA A23.1 Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practice for Concrete.
- (b) The proportioning, volumetric, and physical properties of the Mix Design will be submitted to the Project Manager for review prior to acceptance.
- (c) Aggregates must conform to Table 12 of CSA A23.1 Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practice for Concrete.

Patching Material Mix Design (Alternative 2) Performance Criteria			
Compressive Strength	CSA A23.2-9C	2 hours	13.0 MPa
		3 hours	24.0 MPa
		24 hours	34.0 MPa
		7 days	48.0 MPa
Length Change	ASTM C157	Air Storage	< 500 microstrains
Chloride Ion Permeability	ASTM C1202	Very Low	100 – 1000 Coulomb
Time of Set	ASTM C403		< 1.5 hours
Resistance to Salt-Frost Scaling	ASTM C672	After 50 cycles	0.1 kg/m <sup>2</sup>
Air Content	CSA A23.2-4C		5 -8%

**E15.5.2** Curing Compound

- (a) The Curing Compound will be Type 2, white-pigmented and water based liquid membrane forming curing in accordance with ASTM C309.

**E15.5.3** Bond Breaker

- (a) Bond Breaker shall be Styrofoam (6.5 ± .5 mm thick) or waxed cardboard or other suitable product approved by the Project Manager.

**EQUIPMENT**

**E15.6** Chipping hammers shall be either Hilti TE 905 electric driven or if using air driven hammers, shall be less than or equal 13.5 kg, combined with sharp chipped tempered hammer bits.

**E15.7** Sand blasting equipment shall be air compressor operated with a nozzle size to match to the air compressor pressure. Preferred equipment is:

**E15.7.1** Clemco Model 2020 with a #4 nozzle on a dolly using Black Diamond 20/40 grit at an operating pressure of 110 PSI

**E15.7.2** Acceptable sand blasting equipment:

- (a) Clemco Model 1042 using fine silica sand at an operating pressure of 100 PSI

**E15.8** An oil free jetted air compressor shall be used to blow out repairs, vacuum will not be acceptable

- E15.9 Quickie Saw, capable of holding 2-14" diamond tip blades and must be used in conjunction with a cart to make long straight cuts.
- E15.10 A mason's hammer for sounding concrete.
- E15.11 Calibrated 3 litre (2.84 quart) water container.

#### CONSTRUCTION METHODS

- E15.12 Remove any existing AMZ or asphalt material if applicable from the concrete surface adjacent to the area to be repaired.
- E15.13 Sawcut the repair edge a minimum width of 25mm beyond the edge of the deteriorated concrete, to a minimum depth of 25mm. Sawcuts shall be made parallel to the joint. No diagonal cuts are allowed. For pavement where deterioration is observed 50 mm or less in depth, a 12 mm edge sawcut can be utilized.
- E15.14 Remove existing sealant 100 mm beyond the ends of the repair.
- E15.15 Remove all loose or deteriorated concrete with either an electric or air driven 13.5 kg chipping hammer without damaging the saw cut or existing joint. If during removal, damage occurs beyond the sawcut, remove the concrete at a 45° angle down to the joint. A new sawcut is not required.
- E15.16 Sound the concrete using sight, sound, and feel with a mason's hammer to determine the presence of additional deteriorated concrete. Complete additional removal of any unsound concrete, as stated above.
- E15.17 If any of the following conditions are present in a concrete joint, repairs should be completed as a full depth repairs:
  - E15.17.1 Vertical displacement of the concrete slab by more than 5mm;
  - E15.17.2 Corrosion of the tire bars or dowels;
  - E15.17.3 Concrete deterioration is present to the bottom or around the existing tie bars or dowels;
  - E15.17.4 Improper layout of original pavement joints.
- E15.18 Sawcut 6 mm wide along the existing joint, to a depth of 10 mm below the deepest part of the deteriorated concrete or to the depth of the steel. The saw cut shall extend the full length of the repair area. Do not cut the steel.
- E15.19 Sandblast the concrete surface of the repair area, the saw cut run-outs, and 25 mm beyond the perimeter of the repair area to ensure that the concrete surface is rough and clean. The Contractor shall be responsible for protecting traffic during sandblasting.
- E15.20 Use compressed air that has an oil free air jet having sufficient volume and pressure to remove dust and loose particles.
- E15.21 Place a 6 mm bond breaker to the full length and depth of the saw cut to match the pavement surface. The bond breaker shall extend 50 mm beyond the edge of the repair.
- E15.22 Mix the concrete repair material in accordance with the manufacturer's guidelines and according to the following instructions:
  - E15.22.1 Material and water are to be stored in an enclosed vehicle or facility.
  - E15.22.2 Water for mixing must be no more than 25° Celsius and must be clean and potable. If the mix temperature is greater than 25° Celsius, bags of cubed ice shall be used for mixing in the water. Bags shall remain intact to keep the ice cubes from mixing in the water.
  - E15.22.3 Remove the old mix material from the pail by scraping the bucket after each batch.

- E15.23 The existing concrete surface shall be misted until immediately prior to placement of the repair material. If the temperature of the concrete is too high, place ice in the hand sprayer to reduce the temperature.
- E15.24 Place the concrete repair material according to the following instructions:
- E15.24.1 Place the repair material on both sides of the bond breaker at the same time. The bond breaker must remain straight and intact during placement of the repair material.
- E15.24.2 Start placing repair material on the high side of the joint if possible. Plan the placement so there will be a minimum number of ends of active material where continuous placement is occurring.
- E15.24.3 Do not place partial fill material with a layer on the bottom between batches. Only bulkhead a cold joint. If a joint is placed, sandblast before butting new material against the bulkhead. Create a cold joint by striking off vertically and removing excess repair material. To keep more than one joint active when more than one head of material is being worked on, use part of each succeeding batch to extend the working time of each active repair material head.
- E15.24.4 To finish a repair, strike off material with the edge of a trowel flush with the existing concrete and finish with a steel trowel.
- E15.24.5 Do not add additional water during mixing or after mixing as it will result in strength loss of the repair material.
- E15.24.6 Use minimal motions to finish the surface. Overworking will result in scaling or spalling of the repair surface.
- E15.24.7 The finished concrete shall be flush with the adjacent existing concrete.
- E15.25 Sawcut run-outs shall be filled with concrete repair material.
- E15.26 Uniformly apply water based white pigmented curing compound once the material has set up.
- E15.27 Sawcut the width and depth to match the existing pavement joint reservoir and reseal.

#### MEASUREMENT AND PAYMENT

- E15.28 Construction of Partial Depth Concrete Repairs will be measured on an area basis and paid for at the Contract Unit Price per square meter for "Partial Depth Concrete Repairs". The area to be paid for will be the total number of square meters of partial depth concrete repairs supplied and placed in accordance with this specification and accepted by the Project Manager, including all material and operations herein described and all other items incidental to the Work included in this Specification. Any partial depth repair that is less than 0.03 m<sup>2</sup> shall be measured as 0.03 m<sup>2</sup>.

### **E16. EXISTING INTERLOCKING PAVING STONES**

#### DESCRIPTION

- E16.1 General
- E16.1.1 Further to CW 3330 – R5 this Specification shall cover all operations related to the removal and reinstallation of existing interlocking paving stones.

#### CONSTRUCTION METHODS

- E16.2 Removal of existing interlocking paving stones shall be understood to include removal of paving stones, stockpiling of paving stones in approved area for possible future reinstallation, and disposal of unusable paving stones and base course material.

- E16.3 Any existing lean mix concrete base at the limits of the designated removal area shall be sawcut for the full depth of the pavement prior to the demolition and removal operations. All costs in connection with sawcutting are incidental and shall be included in the unit price bid for "Removal of Interlocking Paving Stones" and "Removal and Reinstallation of Interlocking Paving Stones".
- E16.4 The Contractor shall take care when removing the paving stones not to damage them, and shall stockpile them.
- E16.5 The Contractor shall reinstall stockpiled bricks up to newly poured concrete and as directed by the Contract Administrator, to complete the existing patterns.

#### MEASUREMENT AND PAYMENT

- E16.6 Removal of Interlocking Paving Stones
- E16.6.1 Removal of Interlocking Paving Stones will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Removal of Interlocking Paving Stones". The area to be paid for will be the total number of square metres of interlocking paving stones removed and disposed of in accordance with this specification, accepted and measured by the Contract Administrator.
- E16.7 Removal and Reinstallation of Interlocking Paving Stones
- E16.7.1 Removal and Reinstallation of Interlocking Paving Stones will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Removal and Reinstallation of Interlocking Paving Stones". The area to be paid for will be the total number of square metres of interlocking paving stones removed, stockpiled and reinstalled in accordance with this specification, accepted, and measured by the Contract Administrator.

### **E17. CONCRETE SIDEWALK WITH BLOCKOUTS**

#### DESCRIPTION

- E17.1 Further to CW 3325 – R5, this specification will cover this installation of concrete sidewalk containing blockouts for interlocking stone pavers as identified on the drawings, including areas under paving patterns and fields.

#### MATERIALS

- E17.2 Concrete mix design shall comply with CW 3310
- E17.3 All other materials as per CW 3310.

#### CONSTRUCTION METHODS

- E17.4 Construction as per Contract Drawings and as per CW 3310 and CW3325.
- E17.5 Blockouts for all paving patterns and paving fields in sidewalk to be constructed as per the Drawings. All forming is incidental to the unit price Bid for this specification.
- E17.6 Any thickened edges of sidewalk will be incidental to the unit price Bid for the concrete sidewalk.

#### MEASUREMENT AND PAYMENT

- E17.7 Supply and Installation of concrete sidewalk will be measured on an area basis and paid for at the Contract Unit Price for "100 mm Concrete Sidewalk with Blockouts for Paving Stones". The area to be paid for shall be the total number of square metres supplied and placed in accordance with this Specification and as measured and accepted by the Contract Administrator.

## **E18. INLAID LONGITUDINAL AND TRANSVERSE LINE MARKING TAPE**

### DESCRIPTION

- E18.1 This specification covers the supply and installation of inlaid longitudinal and Transverse line marking tape for lane delineation on westbound Sterling Lyon Parkway at Kenaston Boulevard and pedestrian corridor markings on the Rapid Transit Corridor.

### GENERAL

- E18.2 Drawing and Manuals
- (a) Attached Manual; 3M Stamark™ Tapes Pavement Surface Preparation and Application Techniques
  - (b) Attached Manual; 3M Stamark™ Pavement Marking Tape – Application Guidelines for Pavement Markings in Grooved Pavement Surfaces

### MATERIAL

- E18.3 PB 380I ES - 3M™ Stamark™ High Performance Tape Series 380I ES (white)
- E18.4 Surface Preparation Adhesive P-50 for 3M™ Stamark™ Pavement Marking Tape
- E18.5 Source
- E18.5.1 3M Canada Company  
Available from:  
Guardian Traffic Services  
982 Powell Avenue  
Winnipeg, Manitoba, R3H 0H6  
Ph: 204-233-1600

- E18.6 Preparation and Installation

- E18.6.1 Prepare the concrete surface in accordance with Manufacturer's pavement surface preparation and application techniques manual (attached).
- E18.6.2 Groove concrete pavement and install pavement marking tape in accordance with Manufacturer's installation manual (attached).

### MEASUREMENT AND PAYMENT

- E18.7 Supply and installation of inlaid longitudinal and transverse line marking tape will be measured on a length basis and paid for at the Contract Unit Price per metre for "Supply and Installation of Inlaid Line Marking Tape". The length to be paid for will be the total number of metres of inlaid longitudinal or transverse lane line marking tape supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.
- E18.8 Preparation and grooving of existing concrete pavement for inlaid longitudinal lane line marking tape shall be included in the cost of "Supply and Installation of Inlaid Line Marking Tape" and no separate measurement and payment will be made.

## **E19. REINFORCED CONCRETE TREE WELL**

### DESCRIPTION

- E19.1 This Specification shall cover the operations relating to the construction of reinforced concrete tree well curb. The Work to be done under this Specification shall include the furnishings of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all other things necessary for and incidental to the satisfactory performance and completion of all Work specified.

## MATERIALS

- E19.2 Materials and concrete mix design as per CW 3310 – R 17

## CONSTRUCTION METHODS

- E19.3 Construction of Reinforced Concrete Tree Well

- E19.3.1 The Contractor must ensure that the extent of all buried utilities and services are located and if necessary, protected and exposed prior to any excavation.
- E19.3.2 Excavate to accommodate for forms and granular base.
- E19.3.3 Dispose of material in accordance with section 3.4 of CW 1130.
- E19.3.4 Compact granular base in accordance with specification CW 3110
- E19.3.5 Place 10M Longitudinal Deformed Bars for reinforcement in accordance with section 9.2 of CW 3310 and as specified on the Contract drawings.
- E19.3.6 Place Concrete for Tree Well Curb with the intention of leaving forms in place to prevent granular base undermining during future tree well excavation activities.

## MEASUREMENT AND PAYMENT

- E19.4 Construction of Reinforced Concrete Tree Well Curb will be measured on a per unit basis and paid for at the Contract Unit Price per metre for “Reinforced Concrete Tree Well”. The Reinforced Concrete Tree Wells to be paid for will be the total number of reinforced concrete tree wells constructed in accordance with this specification, and as accepted and measured by the Contract Administrator.

## **E20. TREE GRATES**

### DESCRIPTION

- E20.1 This Specification shall cover the supply and installation of cast iron tree grates for areas as indicated on the drawing. The Work to be done under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary and incidental to the satisfactory performance and completion of all Work as specified.
- E20.2 *Prior to procuring materials, the Contractor will contact the Contract Administrator to verify dimensions and quantities.*

### MATERIALS

- E20.3 Tree Grates
- (a) Tree grates shall be narrow slotted radial cast iron grate by Neenah Foundry catalogue R 8708 – ADA compliant.

### MEASUREMENT AND PAYMENT

- E20.4 The supply and installation of Tree Grates will be measured on a unit basis and paid for at the Contract Unit Price each for “Supply & Install Cast Iron Tree Well Grate - ADA Compliant”. The Tree Grates to be paid for will be the total number of Tree Grates supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

## **E21. PARTIAL DEPTH CONCRETE SIDEWALK AND DETECTABLE TILE RENEWAL**

### DESCRIPTION

- E21.1 This specification shall cover the Partial Depth Concrete Sidewalk Renewals for areas as indicated on the drawings. The Work to be done under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary and incidental to the satisfactory performance and completion of all Work as specified.

#### GENERAL

- E21.2 Drawings and Manuals
- E21.2.1 Reference the contract documents.

#### MATERIALS

- E21.3 Grout - Sika 212
- E21.4 ADA Solutions Detectable Warning Tile – 610mm x 1524mm, or an equivalent product approved by the Contract Administrator.

#### CONSTRUCTION METHODS

- E21.5 Remove and stockpile existing interlocking paving stones for later reinstallation. Care shall be taken not to damage the stones upon removal.
- E21.5.1 Removal and Reinstallation of Interlocking paving stones shall be understood to include removal of paving stones, stockpiling of paving stones in approved area for future reinstallation, and disposal of unusable paving stones and bedding material.
- E21.6 Sawcut the concrete sidewalk as specified in the contract documents and as identified by the Contract Administrator.
- E21.6.1 Ensure that the maximum saw cut depths are followed to avoid compromising the existing reinforcement.
- E21.7 Remove existing tiles and concrete to the depth indicated with either an electric or air driven 13.5 kg chipping hammer without damaging the saw cut or existing joint. If during removal, damage occurs beyond the sawcut, remove the concrete at a 45° angle down to the joint. A new sawcut is not required.
- E21.8 Prepare the surface as per specification E 15.
- E21.9 Mix the grout material in accordance with the manufacturer's guidelines and according to the following instructions:
- E21.9.1 Material and water are to be stored in an enclosed vehicle or facility.
- E21.9.2 Water for mixing must be no more than 25° Celsius and must be clean and potable. If the mix temperature is greater than 25° Celsius, bags of cubed ice shall be used for mixing in the water. Bags shall remain intact to keep the ice cubes from mixing in the water.
- E21.9.3 Remove the old mix material from the pail by scraping the bucket after each batch.
- E21.10 Place the grout material in accordance with the manufacturer's guidelines and according to the following instructions:
- E21.10.1 Formwork shall be used to ensure that the blockout for the interlocking stones is reinstated to the pre-existing dimensions.
- E21.11 Install ADA Solutions Detectable Warning Tile as indicated in the Contract Documents and according to CW 3326 – R3.
- E21.12 Reinstall stockpiled interlocking stones as per CW 3330 – R5.

- E21.12.1 Install paving stone sand bedding and polymer modified sand filler material according to the manufacturer's guidelines.

#### MEASUREMENT AND PAYMENT

- E21.13 Removal and Reinstallation of Interlocking Paving Stones will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Removal and Reinstallation of Interlocking Paving Stones". The area to be paid for will be the total number of square metres of interlocking paving stones removed, stockpiled and reinstalled in accordance with this specification, accepted, and measured by the Contract Administrator.
- E21.14 Construction of Partial Depth Concrete Sidewalk Renewal will be measured on an area basis and paid for at the Contract Unit Price per square meter for "Partial Depth Concrete Sidewalk Renewal". The area to be paid for will be the total number of square meters of partial depth concrete sidewalk renewal supplied and placed in accordance with this specification and accepted by the Project Manager, including all material and operations herein described and all other items incidental to the Work included in this Specification.
- E21.14.1 No additional payment will be made for tile removals, demolition or other incidental items described in this specification.
- E21.15 The supply and installation of ADA Solutions Detectable Warning Tile will be measured on a unit basis and paid for at the Contract Unit Price each for "ADA Solutions Detectable Warning Tile - 610mm x 1524mm". The ADA Solutions Detectable Warning Tiles to be paid for will be the total number supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

### **E22. COORDINATION OF CONSTRUCTION WITH THE RAILWAY COMPANIES**

#### E22.1 General Requirements

- E22.1.1 The Contractor shall be responsible to meet all railway companies, CN and CPR, constraints, requirements, and safety measures.

#### E22.2 Description of Work

- E22.2.1 Prior to the Contractor commencing work within railway property, the contractor will provide an advance notice of 4 weeks prior to the commencement of work.

#### E22.3 Railway Flagging Costs

- E22.3.1 The railway companies will provide a Protecting Foreman for the protection of the railway's plant and equipment and no cost shall be borne by the Contractor.

#### E22.4 CP Requirements

- E22.4.1 CP Requirements are included in Appendix A. The Contractor is advised that these requirements are applicable to all of the Contractor's personnel and equipment crossing CP tracks and property.

#### E22.5 CN Requirements

- E22.5.1 While not included within these specifications, all CNR requirements shall be followed by the Contractor. The Contractor is responsible to ensure compliance with these requirements by all parties operating under his direction. Detailed information will be available prior to start of construction. While not directly applicable to CNR property and trackage, the CP requirements should be considered as guidelines.

### **E23. CONCRETE PAVEMENT WITH BLOCKOUT**

#### DESCRIPTION



E23.1 This specification covers the installation of 300mm concrete pavement with blockouts for paving stones on Vaughan Street.

GENERAL

E23.2 Reference Detail #3 of Drawing C-106.

MATERIALS

E23.3 Materials and concrete mix design as per CW 3310 – R 17.

CONSTRUCTION METHODS

E23.4 Construction methods shall adhere to the Contract Documents and CW 3310.

MEASUREMENT AND PAYMENT

E23.5 Supply and Installation of 300mm concrete pavement with blockouts will be measured on an area basis and paid for at the Contract Unit Price for “300 mm Concrete Pavement (Plain-Dowelled) with Blockout for Paving Stones”. The area to be paid for shall be the total number of square metres supplied and placed in accordance with this Specification and as measured and accepted by the Contract Administrator.