



THE CITY OF WINNIPEG

TENDER

TENDER NO. 690-2018

**2019 REGIONAL STREET RENEWAL PROGRAM – NORTHBOUND MAIN STREET
REHABILITATION – MCADAM AVE TO KILDONAN PARK GOLF COURSE**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

- B1.1 2019 Regional Street Renewal Program – Northbound Main Street Rehabilitation – McAdam Ave to Kildonan Park Golf Course

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, February 15, 2019.
- B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.
- B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. ENQUIRIES

- B3.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.
- B3.2 If the Bidder finds errors, discrepancies or omissions in the Tender, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.
- B3.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Tender will be provided by the Contract Administrator to all Bidders by issuing an addendum.
- B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Tender will be provided by the Contract Administrator only to the Bidder who made the enquiry.
- B3.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B4. CONFIDENTIALITY

- B4.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:
- (a) was known to the Bidder before receipt hereof; or
 - (b) becomes publicly known other than through the Bidder; or
 - (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.
- B4.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Tender to the media or any member of the public without the prior written authorization of the Contract Administrator.

B5. ADDENDA

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

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

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Tender.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.
- B6.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.

- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B17.
- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B7. BID COMPONENTS

- B7.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices, hard copy;
 - (c) Form G1: Bid Bond and Agreement to Bond.
- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely.
- B7.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Tender number and the Bidder's name and address.
- B7.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Tender number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.
- B7.4.2 A hard copy of Form B: Prices must be submitted with the Bid. If there is any discrepancy between the Adobe PDF version of Form B: Prices and the Microsoft Excel version of Form B: Prices, the PDF version shall take precedence.
- B7.5 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Tender document, including the General Conditions, will be evaluated in accordance with B17.1(a).
- B7.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.8 Bids shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B8. BID

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

B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;
- (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
- (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
- (d) if the Bidder is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

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

B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

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

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

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

B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B9. PRICES

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

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

B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

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

B10. DISCLOSURE

B10.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full

disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B10.2 The Persons are:

- (a) Maple Leaf Construction Ltd. – To review staging with respect to feasibility of productivity rates.
- (b) JC Paving Ltd. – To review staging with respect to feasibility of productivity rates.

B11. CONFLICT OF INTEREST AND GOOD FAITH

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

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

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

that could or would be seen to:

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

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

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

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

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

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

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

B12. QUALIFICATION

B12.1 The Bidder shall:

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

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

- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <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™) in the form of:
 - (i) a copy of their valid Manitoba COR certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
 - (ii) a copy of their valid Manitoba SECOR™ certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Small Employer Certificate of Recognition Program (SECOR™) administered by the Construction Safety

Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or

- (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>).

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

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

B13. BID SECURITY

B13.1 The Bidder shall provide bid security in the form of a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond).

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

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

B13.1.3 The Bidder shall sign the Bid Bond.

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

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

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

B14. OPENING OF BIDS AND RELEASE OF INFORMATION

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

B14.1.1 Bidders or their representatives may attend.

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

B14.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>

B14.3 After award of Contract, the name(s) of the successful Bidder(s), their address(es) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>

B14.4 The Bidder is advised that any information contained in any Bid may be released if required by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).

B14.4.1 To the extent permitted, the City shall treat as confidential information, those aspects of a Bid Submission identified by the Bidder as such in accordance with and by reference to Part 2, Section 17 or Section 18 or Section 26 of The Freedom of Information and Protection of Privacy Act (Manitoba), as amended.

B15. IRREVOCABLE BID

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

B15.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the contract securities have been furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

B16. WITHDRAWAL OF BIDS

B16.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B16.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

B16.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 13 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

B16.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

- (a) retain the Bid until after the Submission Deadline has elapsed;
- (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 13 of Form A: Bid; and
- (c) if the notice has been given by any one of the persons specified in B16.1.3(b), declare the Bid withdrawn.

B16.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B15.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

B17. EVALUATION OF BIDS

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

- (a) compliance by the Bidder with the requirements of the Tender, or acceptable deviation therefrom (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B12 (pass/fail);
- (c) Total Bid Price;

(d) economic analysis of any approved alternative pursuant to B6.

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

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

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

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

B17.4.2 The electronic Form B: Prices and the formulas imbedded in that spreadsheet are only provided for the convenience of Bidders. The City makes no representations or warranties as to the correctness of the imbedded formulas. It is the Bidder's responsibility to ensure the extensions of the unit prices and the sum of Total Bid Price performed as a function of the formulas within the electronic Form B: Prices are correct.

B18. AWARD OF CONTRACT

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

B18.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be qualified, and the Bids are determined to be responsive.

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

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

B18.3 The Work of this Contract is contingent upon Council approval of sufficient funding in the 2019 Capital Budget. If the Capital Budget approved by Council does not include sufficient funding for the Work, the City will have no obligation to award a Contract.

B18.4 Where an award of Contract is made by the City, the award shall be made to the qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B17.

B18.4.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

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

- (a) Pavement Rehabilitation & Related Works
 - (i) Main Street Northbound from McAdam Avenue to Kildonan Park Golf Course.
- (b) New Construction of U-Turn Auxiliary Lane

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

- (a) Pavement Rehabilitation & Related Works 1st type of Work (from D2.1)
 - (i) Completion of sewer repairs and installation of new LDS manhole
 - (ii) Installation of catch pits
 - (iii) Adjustment of drainage inlets, water valves, manholes, and utility manholes
 - (iv) Full depth concrete repairs of existing slabs and joints
 - (v) Renewal of existing curbs
 - (vi) Renewal of existing safety median
 - (vii) Renewal of existing sidewalks, including installation of detectable warning surface tiles on both sides of Main Street
 - (viii) Construction of new asphalt bicycle path connections
 - ◆ Jefferson Avenue
 - ◆ Kingsbury Avenue
 - (ix) Construction of new sidewalk median crossings
 - (x) Planing of asphalt at tie-ins and concrete headers
 - (xi) Placement of asphalt overlay
 - ◆ average thickness 80mm
 - (xii) Supply and installation of green bike lane treatment
 - (xiii) Boulevard restoration
- (b) New Construction of U-Turn Auxiliary Lane
 - (i) Excavation
 - (ii) Installation of geotextile
 - (iii) Installation of sub-base and base course
 - (iv) Construction of 200mm reinforced concrete with curbs
 - (v) Installation 50mm asphalt overlay

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
- 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 B7

D4. CONTRACTOR'S SUPERVISOR

- D4.1 At the pre-construction meeting, the Contractor shall identify his/her designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.
- D4.2 At least two (2) business days prior to the commencement of any Work on the site, the Contractor shall provide the Contract Administrator with a phone number where the supervisor identified in D4.1 or an alternate can be contacted twenty-four (24) hours a day to respond to an emergency.

D5. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

- D5.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.
- D5.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.
- D5.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;
- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
 - (b) the Contract, all deliverables produced or developed; and
 - (c) any statement of fact or opinion regarding any aspect of the Contract.
- D5.4 A Contractor who violates any provision of D5 may be determined to be in breach of Contract.

D6. NOTICES

- D6.1 Except as provided for in C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.
- D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3 D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator identified in D3.
- D6.3 Notwithstanding C21, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following:
The City of Winnipeg

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

- D6.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following facsimile number:

The City of Winnipeg
Legal Services Department
Attn: Director of Legal Services
Facsimile No.: 204-947-9155

- D6.5 Bids Submissions must not be submitted to this facsimile number. Bids must be submitted in accordance with B7.**

D7. FURNISHING OF DOCUMENTS

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

SUBMISSIONS

D8. AUTHORITY TO CARRY ON BUSINESS

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

D9. SAFE WORK PLAN

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

D10. INSURANCE

- D10.1 The Contractor shall provide and maintain and cause his Subcontractors to provide and maintain the following insurance coverage(s):
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with the City and Manitoba and its Ministers, officers, employees and agents added as additional insureds, with a cross-liability clause. Such liability policy to also contain contractual liability, unlicensed motor vehicle liability, sudden and accidental pollution 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) 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 All Subcontractors performing Work on the Project shall be registered with Workers Compensation Board of Manitoba, shall provide and maintain workers compensation coverage throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D10.4 All policies shall be taken out with insurers duly licensed to carry on business in the Province of Manitoba.

D10.5 The Contractor shall provide the City Solicitor and Manitoba with certificate(s) of insurance for themselves and all of their Subcontractors, 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.

D10.6 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D11. CONTRACT SECURITY

D11.1 The Contractor shall provide and maintain the performance bond and the labour and material payment bond until the expiration of the warranty period in the form of:

- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; and
- (b) a labour and material payment bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H2: Labour and Material Payment Bond), in an amount equal to fifty percent (50%) of the Contract Price.

D11.2 The Contractor shall provide the City Solicitor with the required performance and labour and material payment bonds within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D11.3 The Contractor shall, as soon as practicable after entering into a contract with a Subcontractor:

- (a) give the Subcontractor written notice of the existence of the labour and material payment bond in D11.1(b); and
- (b) post a notice of the bond and/or a copy of that bond in a conspicuous location at the Site of the Work.

D12. SUBCONTRACTOR LIST

D12.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at or prior to a pre-construction meeting, or at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the C4.1 for the return of the executed Contract.

D13. DETAILED WORK SCHEDULE

- D13.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.
- D13.2 The detailed work schedule shall consist of the following:
- (a) a Gantt chart for the Work; and
 - (b) a daily manpower schedule for the Work
all 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.
- D13.4 Further to D13.2(b), the daily manpower schedule shall list the daily number of individuals on the Site for each trade.

SCHEDULE OF WORK

D14. COMMENCEMENT

- D14.1 The Contractor shall not commence any Work until he/she is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.
- D14.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D8;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the twenty-four (24) hour emergency response phone number specified in D4.2.
 - (iv) the Safe Work Plan specified in D9;
 - (v) evidence of the insurance specified in D10;
 - (vi) the contract security specified in D11;
 - (vii) the subcontractor list specified in D12;
 - (viii) the detailed work schedule specified in D13; and
 - (ix) submittals as stated in E16 for working in close proximity to critical water infrastructure.
 - (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 not commence the Work on Stage I before May 22, 2019, and shall commence the Work on Stage I no later than May 25, 2019, as directed by the Contract Administrator and weather permitting.
- D14.4 The City intends to award this Contract by April 2019 and Stage 0 is expected to begin on April 29, 2019.
- D14.4.1 If the actual date of award is later than intended, the dates specified for Critical Stages, Substantial Performance, and Total Performance may be adjusted at the discretion of the Contract Administrator.

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.

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 sign clamps, replace any signage, and paint lines. The Contractor is expected to cooperate with the City of Winnipeg to facilitate;
- (b) City of Winnipeg Traffic Signals – Traffic signal loop may require decommissioning and reinstallation. Traffic signal installation and/or upgrades at the Main St. and Kingsbury intersection, and the Main St. and Seven Oaks Ave intersection. The Contractor is expected to cooperate with the City of Winnipeg to facilitate;
- (c) Manitoba Hydro – Manhole adjustment. The Contractor is expected to coordinate with Manitoba Hydro for the supply and installation of riser rings for the hydro manhole;
- (d) Bell MTS – Manhole adjustments. The Contractor is expected to coordinate with Bell MTS for the supply of riser rings for the communications manholes; and
- (e) Manitoba Hydro – Street Light relocation. The Contractor is expected to cooperate with Manitoba Hydro for the relocation of one street light during construction.

D17. SEQUENCE OF WORK

D17.1 Further to C6.1, the sequence of work shall be as follows:

D17.1.1 The Work is proposed to be divided into 7 stages . Stages are further subdivided into major items of work. Amendments to the proposed sequencing plan may be submitted in writing to the Contract Administrator for review and approval. Amendments must be submitted at least 3 weeks in advance of the proposed stage(s) to be considered.

D17.1.2 **Stage 0** – Underground Works – McAdam Ave to Kildonan Park Golf Course.

- (a) Complete underground infrastructure repairs to facilitate Stage I; and
- (b) Complete permanent and/or temporary concrete repairs.

D17.1.3 **Stage I** – Northbound Gutter Lane and Sidewalk – McAdam Ave to Kildonan Park Golf Course.

- (a) Saw cut and remove concrete in the northbound gutter lane and approaches for full depth repairs as shown on the drawings, or as directed by the Contract Administrator;
- (b) Adjust remaining catch basins, manholes, and water valves as required;
- (c) Place concrete for full depth repairs in the northbound gutter lane;
- (d) Renew east curbing;
- (e) Renew east sidewalks, staging appropriately to maintain pedestrian access to the businesses at all times; and
- (f) Complete boulevard restorations.

D17.1.4 **Stage II** – Northbound Center Lane – McAdam Ave to Royal Ave, and Southbound Curb Lane near Jefferson Ave and Kingsbury Ave Bicycle Connections.

- (a) Complete Stage I works, if required;
- (b) Saw cut and remove concrete in the northbound center lane for full depth repairs as shown on the drawings, or as directed by the Contract Administrator;
- (c) Adjust remaining manholes and water valves as required;
- (d) Place concrete for full depth repairs in the northbound center lane;
- (e) Renew southbound west curbing near Jefferson Ave and Kingsbury Ave;

- (f) Renew southbound west sidewalks near Jefferson Ave and Kingsbury Ave; and
- (g) Construct bicycle asphalt path connections near Jefferson Ave and Kingsbury Ave.

D17.1.5 **Stage III** – Northbound Median Lane and Median Improvements – McAdam Ave to Royal Ave, and Northbound Left Turn Lane – Partridge Ave to Leila Ave.

- (a) Saw cut and remove concrete in the northbound median lane and median openings for full depth repairs as shown on the drawings, or as directed by the Contract Administrator;
- (b) Adjust remaining manholes and water valves as required;
- (c) Excavate lane widening for u-turn near Jefferson Ave;
- (d) Install and compact granular for u-turn near Jefferson Ave;
- (e) Install new concrete for u-turn near Jefferson Ave;
- (f) Install new curb for u-turn near Jefferson Ave;
- (g) Place concrete for full depth repairs in the northbound median lane and median openings;
- (h) Renew median curbing;
- (i) Renew median sidewalks or construct new median crossings as shown on the drawings; and
- (j) Complete boulevard restorations.

D17.1.6 **Stage IV** – Northbound Median Lane and Median Improvements – Royal Ave to Kildonan Park Golf Course, and Asphalt Paving of Northbound Lanes – McAdam Ave to Royal Ave.

- (a) Saw cut and remove concrete in the northbound median lane and median openings for full depth repairs as shown on the drawings, or as directed by the Contract Administrator;
- (b) Adjust remaining manholes and water valves as required;
- (c) Place concrete for full depth repairs in the northbound median lane and median openings;
- (d) Renew median curbing;
- (e) Renew median sidewalks or construct new median crossings as shown on the drawings; and
- (f) Complete boulevard restorations.
- (g) Place asphaltic concrete overlay – average thickness 80mm
 - (i) Placing the topsoil and finished grading of all boulevard and median areas, in the section to be paved, shall be completed prior to commencing construction of the asphaltic concrete overlay, including the scratch course.
 - (ii) All asphaltic concrete work shall be performed using a lane-at-a-time method (see E5.1 for minimum requirements of traffic lanes to be left open at various times).
 - (iii) At the end of any day, there shall be no drop-off along any longitudinal joint, excepting the longitudinal joint between the gutter and approaches.

D17.1.7 Immediately following the completion of the asphaltic concrete works of Stage IV, the Contractor shall clean up the Site and remove all plant, surplus material, waste and debris, other than that left by the City or other Contractors

D17.1.8 **Stage V** – Northbound Center Lane – Royal Ave to Kildonan Park Golf Course.

- (a) Saw cut and remove concrete in the northbound center lane for full depth repairs as shown on the drawings, or as directed by the Contract Administrator;
- (b) Adjust remaining manholes and water valves as required;
- (c) Place concrete for full depth repairs in the northbound center lane;

- D17.1.9 **Stage VI** – Asphalt Paving of Northbound Lanes – Royal Ave to Kildonan Park Golf Course.
- (a) Place asphaltic concrete overlay – average thickness 80mm
 - (i) Placing the topsoil and finished grading of all boulevard and median areas, in the section to be paved, shall be completed prior to commencing construction of the asphaltic concrete overlay, including the scratch course.
 - (ii) All asphaltic concrete work shall be performed using a lane-at-a-time method (see E5.1 for minimum requirements of traffic lanes to be left open at various times).
 - (iii) At the end of any day, there shall be no drop-off along any longitudinal joint, excepting the longitudinal joint between the gutter and approaches.

D18. CRITICAL STAGES

- D18.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) **Stage 0** – completion of Stage 0 works to where remaining repairs are confined to the Stage I work zone, by May 17, 2019
 - (b) **Stage II** – completion of Stage II works to where remaining repairs are confined to the center lane by July 21, 2019, allowing the gutter lane to be reopened according to the Traffic Management specification.
 - (c) **Stage III** – completion of Stage III works by September 4, 2019
- D18.2 When the Contractor considers the Work associated with Stage III to be completed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Completion. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D18.3 The date on which the Stage III Work has been accepted by the Contract Administrator as being completed to the requirements of the Contract is the date on which completion of Stage III has been achieved.

D19. SUBSTANTIAL PERFORMANCE

- D19.1 The Contractor shall achieve Substantial Performance by October 15, 2019.
- D19.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D19.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D20. TOTAL PERFORMANCE

- D20.1 The Contractor shall achieve Total Performance by October 18, 2019.
- 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 Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Calendar Day for each and every Calendar Day following the days fixed herein for same during which such failure continues:

- (a) Stage 0 – Two Thousand dollars (\$2,000);
- (b) Stage II – Two Thousand dollars (\$2,000);
- (c) Stage III – Two Thousand dollars (\$2,000);
- (d) Substantial Performance – Five Thousand dollars (\$5,000);
- (e) Total Performance – One Thousand dollars (\$1,000).

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. ACCELERATED COMPLETION

DESCRIPTION

D22.1 General

D22.1.1 This Supplemental Condition shall cover the accelerated completion for this contract.

D22.2 Acceleration of Work

D22.2.1 At no risk to the City, the Contractor at its own initiative, means, and expense, may undertake to complete the Works for this Contract to facilitate the safe reopening of traffic and pedestrians in advance of the stipulated Calendar day as specified in D19.

D22.2.2 Reopening shall occur when all Work items listed in D2.1 are complete, including boulevard restoration, streetscaping, asphalt tie-ins and Site cleanup.

D22.2.3 In recognition of the fact that an early completion of the Works is of benefit to the City, the City will compensate the Contractor for said early completion on a per diem unit price basis, as hereinafter set out, provided that the City will not be liable to pay for any period of acceleration in excess of ten (10) days, not including Saturdays, Sundays, or Statutory Holidays .

D22.2.4 It is noted that certain delays of the Work are normal, due to Site conditions, necessary layout and dimensional changes. The Contract Administrator will attempt to resolve each situation as soon as possible. The Contractor is advised that no extension to the date listed in D19 will be given for events of this sort which cause construction delay and are resolved within 48 hours of the requirement of change becoming know to both the Contractor and the Contract Administrator.

MEASUREMENT AND PAYEMENT

D22.3 Method of Measurement

D22.3.1 Subject to clause D22.3 hereof, accelerated completion will be measured on a unit basis per diem. The number of days to be paid for will be the total number of days, not including Saturdays, Sundays, or Statutory Holidays, with which all of the Work is complete and is

safely reopened to vehicular and pedestrian traffic in advance of the date specified in D19 with all specified Works listed in D2.1 completed and acceptable to the Contract Administrator.

D22.4 Basis of Payment

D22.4.1 Subject to clause D22.3 hereof, accelerated completion will be paid for at the Unit Price per diem specified hereinafter for "Accelerated Completion" which price shall be payment in full for performing all operations undertaken and all other items incidental to the Work included in this Specification. Unit Price per diem = Five thousand dollars (\$5,000).

D22.4.2 Payment of this item is not identified on Form B:Prices, and shall not be included thereon. If accelerated completion does occur as specified herein, then payment will be made for this item as an addition to the Contract.

D23. SCHEDULED MAINTENANCE

D23.1 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; and
- (c) Sodding as specified in CW 3510-R9.

D23.2 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

D24. JOB MEETINGS

D24.1 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.

D24.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

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

D25.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

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

D26.1 Further to 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

D27. PAYMENT

D27.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

THIRD PARTY AGREEMENTS

D28. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

D28.1 Funding for the Work of the Contract is being provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada and accordingly, as required by the applicable funding agreements, the following terms and conditions shall apply.

D28.2 For the purposes of D32:

- (a) **"Government of Canada"** includes the authorized officials, auditors, and representatives of the Government of Canada; and
- (b) **"Government of Manitoba"** includes the authorized officials, auditors, and representatives of the Government of Manitoba.

D28.3 Indemnification By Contractor

D28.3.1 In addition to the indemnity obligations outlined in C17 of the General Conditions for Construction, the Contractor agrees to indemnify and save harmless the Government of Canada and the Government of Manitoba and each of their respective Ministers, officers, servants, employees, and agents from and against all claims and demands, losses, costs, damages, actions, suit or other proceedings brought or pursued in any manner in respect of any matter caused by the Contractor or arising from this Contract or the Work, or from the goods or services provided or required to be provided by the Contractor, except those resulting from the negligence of any of the Government of Canada's or the Government of Manitoba's Ministers, officers, servants, employees, or agents, as the case may be.

D28.4 Records Retention and Audits

D28.4.1 The Contractor shall maintain and preserve accurate and complete records in respect of this Contract and the Work, including all accounting records, financial documents, copies of contracts with other parties and other records relating to this Contract and the Work during the term of the Contract and for at least six (6) years after Total Performance. Those records bearing original signatures or professional seals or stamps must be preserved in paper form; other records may be retained in electronic form.

D28.4.2 In addition to the record keeping and inspection obligations outlined in C6 of the General Conditions for Construction, the Contractor shall keep available for inspection and audit at all reasonable times while this Contract is in effect and until at least six (6) years after Total Performance, all records, documents, and contracts referred to in D32.4.1 for inspection, copying and audit by the City of Winnipeg, the Government of Manitoba and/or the Government of Canada and their respective representatives and auditors, and to produce them on demand; to provide reasonable facilities for such inspections, copying and audits, to provide copies of and extracts from such records, documents, or contracts upon request by the City of Winnipeg, the Government of Manitoba, and/or the Government of Canada and their respective representatives and auditors, and to promptly provide such other information and explanations as may be reasonably requested by the City of Winnipeg, the Government of Manitoba, and/or the Government of Canada from time-to-time.

D28.5 Other Obligations

D28.5.1 The Contractor consents to the City providing a copy of the Contract to the Government of Manitoba and/or the Government of Canada upon request from either entity.

- D28.5.2 If the Lobbyists Registration Act (Manitoba) applies to the Contractor, the Contractor represents and warrants that it has filed a return and is registered and in full compliance with the obligations of that Act, and covenants that it will continue to comply for the duration of this Contract.
- D28.5.3 The Contractor shall comply with all applicable legislation and standards, whether federal, provincial, or municipal, including (without limitation) labour, environmental, and human rights laws, in the course of providing the Work.
- D28.5.4 The Contractor shall properly account for the Work provided under this Contract and payment received in this respect, prepared in accordance with generally accepted accounting principles in effect in Canada, including those principles and standards approved or recommended from time-to-time by the Chartered Professional Accountants of Canada or the Public Sector Accounting Board, as applicable, applied on a consistent basis.

FORM H1: PERFORMANCE BOND
(See D11)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

TENDER NO. 690-2018

2019 Regional Street Renewal Program – Northbound Main Street Rehabilitation – McAdam Ave to Kildonan Park Golf Course

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

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

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

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

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

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

_____ day of _____, 20____.

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

By: _____ (Seal)
(Attorney-in-Fact)

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

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

TENDER NO. 690-2018

2019 Regional Street Renewal Program – Northbound Main Street Rehabilitation – McAdam Ave to Kildonan Park Golf Course

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

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

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

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

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

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

_____ day of _____, 20____.

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

By: _____ (Seal)
(Attorney-in-Fact)

FORM J: SUBCONTRACTOR LIST
(See D12)

2019 Regional Street Renewal Program – Northbound Main Street Rehabilitation – McAdam Ave to Kildonan Park Golf Course

<u>Portion of the Work</u>	<u>Name</u>	<u>Address</u>
<i>SURFACE WORKS:</i>		
<i>Supply of Materials:</i>		
<i>Concrete</i>		
<i>Asphalt</i>		
<i>Base Course & Sub-Base</i>		
<i>Topsoil & Seed</i>		
<i>Green Bike Lane Treatment</i>		
<i>Installation/Placement:</i>		
<i>Concrete</i>		
<i>Asphalt</i>		
<i>Base</i>		
<i>Topsoil & Seed</i>		
<i>Green Bike Lane Treatment</i>		
<i>UNDERGROUND WORKS:</i>		
<i>Supply of Materials:</i>		
<i>Frame & Covers</i>		
<i>Catch Pits & Manhole</i>		
<i>Installation/Placement:</i>		
<i>Catch Pit Leads</i>		
<i>Sewer Televising</i>		
<i>Sewer Repairs</i>		
<i>OTHERS:</i>		

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
P-3502-01	Cover Page and Site Location Map	A1
P-3502-02	Concrete Pavement, Curb and Sidewalk Repairs – McAdam Ave. to Kilbride Ave.	A1
P-3502-03	Concrete Pavement, Curb and Sidewalk Repairs – Semple Ave. to McKay Dr.	A1
P-3502-04	Horizontal and Vertical Alignments – Main Street – McAdam Ave. to Smithfield Ave. – STA 1+000 To 1+140	A1
P-3502-05	Horizontal and Vertical Alignments – Main Street – Smithfield Ave. to Enniskillen Ave. – STA 1+140 To 1+290	A1
P-3502-06	Horizontal and Vertical Alignments – Main Street – Enniskillen Ave. to Seven Oaks Blvd. – STA 1+290 To 1+450	A1
P-3502-07	Horizontal and Vertical Alignments – Main Street – Seven Oaks Blvd. to St. Anthony Ave. – STA 1+450 To 1+610	A1
P-3502-08	Horizontal and Vertical Alignments – Main Street – St. Anthony Ave. to Hartford Ave. – STA 1+610 To 1+780	A1
P-3502-09	Horizontal and Vertical Alignments – Main Street – Hartford Ave. to Kilbride Ave. – STA 1+780 To 1+950	A1
P-3502-10	Horizontal and Vertical Alignments – Main Street – Kilbride Ave. to Burrin Ave. – STA 1+950 To 2+110	A1
P-3502-11	Horizontal and Vertical Alignments – Main Street – Burrin Ave. to Royal Ave. – STA 2+110 To 2+250	A1
P-3502-12	Horizontal and Vertical Alignments – Main Street – Royal Ave. to Partridge Ave. – STA 2+250 To 2+410	A1
P-3502-13	Horizontal and Vertical Alignments – Main Street – Partridge Ave. to Leila Ave. – STA 2+410 To 2+570	A1
P-3502-14	Horizontal and Vertical Alignments – Main Street – Leila Ave. to Armstrong Ave. – STA 2+570 To 2+730	A1
P-3502-15	Horizontal and Vertical Alignments – Main Street – Armstrong Ave. to 87m North of McKay Dr. – STA 2+730 To 2+887.071	A1
P-3502-16	Miscellaneous Details	A1

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
P-3502-17	Construction Staging – Main Street – McAdam Ave. to Kilbride Ave. – Joint and Slab Repairs Stage 0 & 1	A1
P-3502-18	Construction Staging – Main Street – Kilbride Ave. to 87m North of McKay Dr. – Joint and Slab Repairs Stage 0 & 1	A1
P-3502-19	Construction Staging – Main Street – McAdam Ave. to Kilbride Ave. – Joint and Slab Repairs Stage 2	A1
P-3502-20	Construction Staging – Main Street – Kilbride Ave. to 87m North of McKay Dr. – Joint and Slab Repairs Stage 2	A1
P-3502-21	Construction Staging – Main Street – McAdam Ave. to Kilbride Ave. – Joint and Slab Repairs Stage 3	A1
P-3502-22	Construction Staging – Main Street – Kilbride Ave. to 87m North of McKay Dr. – Joint and Slab Repairs Stage 3	A1
P-3502-23	Construction Staging – Main Street – McAdam Ave. to Kilbride Ave. – Joint and Slab Repairs Stage 4	A1
P-3502-24	Construction Staging – Main Street – Kilbride Ave. to 87m North of McKay Dr. – Joint and Slab Repairs Stage 4	A1
P-3502-25	Construction Staging – Main Street – Kilbride Ave. to 87m North of McKay Dr. – Joint and Slab Repairs Stage 5 & 6	A1

E2. GEOTECHNICAL REPORT

E2.1 Further to C3.1, no Geotechnical Report is available at this time.

E3. OFFICE FACILITIES

- E3.1 The Contractor shall supply office facilities meeting the following requirements:
- (a) The field office shall be for the exclusive use of the Contract Administrator.
 - (b) The building shall be conveniently located near the site of the Work.
 - (c) The building shall have a minimum floor area of 20 square metres, 2.4 with a window and a door entrance with a suitable lock.
 - (d) The building shall be suitable for all weather use. It shall be equipped with an electric heater and air conditioner so that the room temperature can be maintained between either 16-18°C or 24-25°C.
 - (e) The building shall be adequately lighted with fluorescent fixtures and have a minimum of three wall outlets.
 - (f) The building shall be furnished with one desk, table 3m x 1.2m, and a minimum of 12 chairs[(one, two) desk, one drafting table, table 3m X 1.2m, one stool, one four drawer legal size filing cabinet, and a minimum of (5,6,8,12,15) chairs].
 - (g) A portable toilet shall be located near the field office building. The toilet shall have a locking door and be for the exclusive use of the Contract Administrator and other personnel from the City.
 - (h) The field office building and the portable toilet shall be cleaned on a weekly basis immediately prior to each site meeting. The Contract Administrator may request additional cleaning when he/she deems it necessary.
- E3.2 The Contractor shall be responsible for all installation and removal costs, all operating costs, and the general maintenance of the office facilities.
- E3.3 The office facilities will be provided from the date of the commencement of the Work to the date of Substantial Performance.
- E3.4 On a one time basis, where directed by the Contract Administrator, the Contractor shall relocate the office facilities to a location more convenient for the remaining Work.

E4. PROTECTION OF EXISTING TREES

- E4.1 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.
- E4.2 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.
- E4.3 No separate measurement or payment will be made for the protection of trees.
- E4.4 Except as required in clause E4.1(c) and E4.1(e), Elm trees shall not be pruned at any time between April 1 and July 31.

E5. TRAFFIC CONTROL

- E5.1 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.
- E5.2 Notwithstanding E5.1, 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.

E5.2.1 An exception to E5.2 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.

E5.2.2 Further to E5.2, 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.

E6. TRAFFIC MANAGEMENT

E6.1 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.

E6.1.1 Maintain a minimum of two northbound lanes of traffic on Main Street during the afternoon peak period (15:30 – 17:30).

- (a) In exception to E6.1.1, maintain one northbound lane of traffic on Main Street from McAdam Ave. to Royal Ave. from July 1, 2019 to July 21, 2019, anticipated during Stage 2 of the work.

E6.1.2 Maintain a minimum of one lane of traffic northbound from McAdam Ave. to Royal Ave. outside of peak hours, and a minimum of two lanes of traffic northbound from Royal Ave. to 87m north of McKay Dr. at all times, including during paving and milling operations. When no work is being performed on site, non-essential lane closures will not be permitted.

- (a) In exception to E6.1.1 & E6.1.2, lane closures for Stage 0 works, from April 29, 2019 to May 17, 2019, will be discussed with the Contractor and City of Winnipeg Traffic Management group before the start of construction, to facilitate the completion of the underground repairs.

E6.1.3 Maintain a minimum of two southbound lanes of traffic on Main Street during the morning peak period (7:00 – 9:00) and the afternoon peak period (15:30 – 17:30).

E6.1.4 Maintain a minimum of one lane of southbound traffic out side of peak period, including during paving and milling operations. When no work is being performed on site, non-essential lane closures will not be permitted.

E6.1.5 Where left turn lanes exist, an additional lane to accommodate the left turn storage lane shall be maintained at all times.

E6.1.6 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 as shown in the Construction Staging Drawings. 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.

E6.1.7 Flag persons may be necessary to maintain the flow of traffic during certain work operations.

- E6.1.8 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.
- E6.1.9 Pedestrian access must be maintained at all times.
- E6.1.10 Ambulance/emergency vehicle access must be maintained at all times.
- E6.1.11 The Contractor will be responsible for staging the work to provide temporary off-line transit stops and reasonable access to loading zones within the construction area, as required.

E7. PEDESTRIAN SAFETY

- E7.1 During the project, a temporary snow fence or equivalent delineation shall be installed where required to maintain access to pedestrian corridors, businesses and residences, and adjacent to open excavations to protect pedestrians. The Contractor shall be responsible for maintaining the snow fence or other delineation in a proper working condition. No measurement for payment shall be made for this work.

E8. WATER OBTAINED FROM THE CITY

- E8.1 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.

E9. SURFACE RESTORATIONS

- E9.1 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.

E10. INFRASTRUCTURE SIGNS

- E10.1 The Contractor shall obtain infrastructure signs from the Traffic Services Sign Shop at 421 Osborne Street. The Contractor shall mount each sign securely to a rigid backing material approved by the Contract Administrator. The Contractor shall fasten each sign to a suitable support and erect and maintain one sign at each street as directed by the Contract Administrator. When the Contract Administrator considers the Work on the street complete, the Contractor shall remove and dispose of the signs and supports. No measurement for payment will be made for performing all operations herein described and all other items incidental to the work described

E11. SUPPLY AND INSTALLATION OF PAVEMENT REPAIR FABRIC

DESCRIPTION

- E11.1 General
- E11.1.1 This specification covers the supply and installation of pavement repair fabric.
- E11.1.2 Referenced Standard Construction
- (a) CW 3130 – Supply and Installation of Geotextile Fabrics.

MATERIALS

E11.2 Storage and Handling

E11.2.1 Store and handle material in accordance with Section 2 of CW 3130.

E11.3 Pavement Repair Fabric

E11.3.1 Pavement repair fabric will be Glas Grid Road Reinforcement Mesh - Style 8501.

CONSTRUCTION METHODS

E11.4 General

E11.4.1 Install pavement repair fabric at random locations as directed by the Contract Administrator.

E11.4.2 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.

E11.4.3 Proceed with installation upon completion and acceptance of the asphalt levelling course.

E11.4.4 Install fabric in accordance with the manufacturer's specifications and recommendations.

E11.4.5 Only construction equipment required to place the final asphalt surface course will be allowed to travel on the exposed fabric.

E11.4.6 Replace damaged or improperly placed fabric.

E11.4.7 Ensure temperature of the asphalt material does not exceed the melting point of the fabric.

MEASUREMENT AND PAYMENT

E11.5 Pavement Repair Fabric

E11.5.1 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.

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. OPERATING CONSTRAINTS FOR WORK IN CLOSE PROXIMITY TO CRITICAL WATER INFRASTRUCTURE

DESCRIPTION

E13.1 General

E13.1.1 This Section details operating constraints for all work to be carried out in close proximity to the City feeder mains and other critical water infrastructure. Close proximity shall be deemed to be any construction activity within a 5 m horizontal offset from the centreline of the feeder main/water main, within 5 m of valve chambers and other appurtenances, and any other infrastructure identified below.

E13.2 The following shall be considered critical pipelines and water infrastructure for this project:

E13.2.1 400 Feedermain

- (a) From south project limit to 60 m north of McAdam Avenue.
- (b) All valve chambers and other associated feedermain infrastructure.

E13.2.2 300 Cast Iron Watermain

- (a) From south project limit to north project limits.
- (b) All valves and other associated 300 watermain infrastructure.

E13.3 General Considerations for Work in Close Proximity to Critical Water Infrastructure:

E13.3.1 Feeder mains and large diameter water mains are a critical component of the City of Winnipeg Regional Water Supply System and work in close proximity to feeder mains shall be undertaken with an abundance of caution. Large diameter feeder main and water mains cannot typically be taken out of service for extended periods to facilitate construction and inadvertent damage caused to the pipe would likely have catastrophic consequences.

E13.3.2 Work around critical water infrastructure shall be planned and implemented to minimize the time period that work is carried out in close proximity to the pipe and to ensure that the

pipeline is not subjected to excessive construction related loads, including excessive vibrations and/or concentrated or asymmetrical lateral loads during backfill placement

E13.3.3 Large diameter pressure pipe generally has limited ability to withstand increased earth and live loading. Therefore, every precaution must be undertaken to ensure that applied loading during all phases of construction is within accepted loading parameters. PCCP typically fails in a non-ductile mode with the potential to cause extensive consequential damage to infrastructure if failure should occur. All large diameter feeder mains/water mains have the potential to cause extensive flooding.

E13.3.4 Construction in close proximity to critical infrastructure shall not commence until both the equipment and construction method statements have been submitted, reviewed, and accepted by the Contract Administrator.

E13.4 Submittals

E13.4.1 Submit proposed construction equipment specifications to the Contract Administrator for review a minimum of five (5) Business Days prior to construction. The equipment submission shall include:

- (a) equipment operating and payload weights;
- (b) equipment dimensions, including: wheel or track base, track length or axle spacing, track widths or wheel configurations; and,

E13.4.2 Submit a construction method statement to the Contract Administrator a minimum of five (5) business days prior to construction. The construction method statement shall contain the following minimum information:

- (a) proposed pavement removal plan including excavation locations, excavation equipment locations, and loading positions;
- (b) excavation plans, including shoring designs, for excavations occurring in close proximity to feeder mains (within 5 m horizontal of the pipe's centerline) where the excavation to be extended below the top of the critical infrastructure embedment zone (150 mm above the pipe); and,
- (c) any other pertinent information required to accurately describe the construction activities in close proximity to the critical infrastructure and permit the Contract Administrator to review the proposed construction plans.

E13.4.3 Incomplete or partial submissions will not be reviewed and will be returned to the Contractor for re-submission.

E13.4.4 Allow five (5) Business Days for review by the Contract Administrator.

E13.5 Feeder Main Operational Limitations

E13.5.1 Feeder main shutdowns are scheduled based on a number of factors including water demand, weather, reservoir operation, routine maintenance and repair work within the regional distribution system, and other factors. If feeder main shutdowns are required, the City shall endeavour to make requested time periods available to the Contractor to schedule his/her work requiring removal of the feeder main from service, without limiting the City's control over the operation of the feeder main to complete other work, maintain adequate water supply and storage of water and maintain the integrity of the infrastructure. The City shall reserve the right to cancel and/or delay these schedule dates at any time, due to any circumstances that could adversely affect the feeder main or water supply including, but not limited to, high water demand, abnormal weather, failures of related water system components and/or security concerns.

E13.5.2 Scheduling Restrictions:

- (a) Temporary feeder main shutdowns are typically limited to off-peak demand seasons (September 15th to May 15th) and low demand hours including evenings or other low demand periods.

- E13.5.3 The Contractor shall provide Notice to the Contract Administrator in writing, a minimum of fifteen (15) Business Days prior to requiring the shutdown. The City will endeavour to schedule the shutdown as requested.

CONSTRUCTION METHODS

E13.6 Pre-Work, Planning and General Execution

- E13.6.1 No work shall commence in close proximity to feeder mains, chambers, and critical infrastructure until the equipment specifications and construction method statement have been submitted and accepted, and feeder main locations have been clearly delineated in the field. Work over feeder mains shall only be carried out with equipment that has been reviewed and quantified in terms of its loading implications on the pipe.
- E13.6.2 Contact the City of Winnipeg Water and Waste Department, Construction Services Coordinator prior to construction.
- E13.6.3 Locate feeder mains and water mains and confirm their position horizontally and vertically prior to undertaking work in close proximity to the identified feeder mains. Note that exact locations to be identified in the field. Deviations from the elevations noted on the Drawings shall be reported to Contract Administrator for review prior to proceeding with work.
- E13.6.4 Visually delineate all critical infrastructure identified herein on Site by use of paint, staking/flagging, construction fencing, snow fencing, or other suitable methods
- E13.6.5 Only utilize construction practices and procedures that do not impart excessive vibratory loads on feeder mains and chambers and critical infrastructure or that would cause settlement of the subgrade below feeder mains and critical pipelines.
- E13.6.6 Where the existing road structure must be removed, crossing of critical infrastructure shall be prohibited from the time the existing roadway structure is removed until the completion of granular base construction. At all times prior to completion of final paving; reduce equipment speeds to levels that minimize the effects of impact loading to the critical infrastructure.
- E13.6.7 Only equipment and construction practices stipulated in the accepted construction method statement and the supplemental requirements noted herein may be utilized in close proximity to feeder mains, chambers, and other critical infrastructure identified herein.
- E13.6.8 Construction operations should be staged in such a manner as to limit multiple construction loads at one time, (e.g., offset crossings sufficiently from each other, rollers should remain a sufficient distance behind spreaders to limit loads. A reasonable offset distance is 3 m between loads).
- E13.6.9 The Contractor shall ensure that all crew members understand and observe the requirements of working near feeder mains, valve chambers, and critical infrastructure. Prior to commencement of on-Site work, the Contractor shall jointly conduct an orientation meeting with the Contract Administer, all superintendents, foreman, and heavy equipment operators to make all workers on the Site fully cognizant of the limitations of altered loading on, the ramifications of inadvertent damage to, and the constraints associated with work in close proximity to feeder mains and critical pipelines. New personnel introduced after commencement of the Project need to be formally orientated as outlined herein. It is recommended that restrictions associated with the crossing, consistent with the Contractor's submitted method statement be posted on Site and near the crossing.
- ### E13.7 Demolition, Excavation, and Shoring
- E13.7.1 Use of pneumatic concrete breakers within 3 m of a feeder main, valve chamber, or critical pipeline is prohibited. Pavement shall be full depth sawcut and carefully removed. Use of hand held jackhammers for pavement removal will be allowed.
- E13.7.2 Only the use of permitted excavation equipment shall be allowed within 3.0m of the centerline of critical infrastructure.

- E13.7.3 Excavation:
- (a) Utilize only smooth edged excavation buckets, soft excavation, or hand excavation techniques where there is less than 1.5 m of earth cover over the pipeline.
 - (b) Where there is less than 1.0 m of soil cover above the pipeline, provide full time supervision and complete the excavation utilizing hand excavation, soft excavation methods, or machine excavation. Where machine excavation is to be used the crown of the pipeline must be exposed (or suitable located) using hand or soft excavation methods a minimum of every 1.8 m.
 - (c) Where there is less than 0.5 m of soil cover above the pipeline, provide full time supervision and complete the excavation utilizing hand excavation or soft excavation methods only.
- E13.7.4 Equipment should not be allowed to operate while positioned directly over a feeder main or critical pipeline except where permitted herein, outlined in the reviewed and accepted construction method statement.
- E13.7.5 Excavations within 3 m of the outside edge of a feeder main (hydrovac holes for confirming trenchless installations excluded) and which extend below the top of the feeder main shall utilize shoring methods that precludes the movement of native in-situ soils (i.e. a tight shoring system).
- E13.8 Subgrade Construction
- E13.8.1 Subgrade and backfill compaction within 3 metres (horizontal) of a critical pipeline or valve chamber shall be limited to non-vibratory methods only. Small walk behind vibratory packers will be permitted.
- E13.8.2 Subgrade, sub-base and base course construction shall be kept in a rut free condition at all times. Construction equipment is prohibited from crossing pipelines if the grade is insufficient to support the equipment without rutting.
- E13.8.3 Subgrade conditions should be inspected by personnel with competent geotechnical experience (e.g. ability to adequately visually classify soils and competency of subgrade, subbase, and base course materials). In the event of encountering unsuitable subgrade materials above the feeder main, proposed design revisions shall be submitted to this office for review to obtain approval from the Water and Waste Department relative to any change in conditions.
- E13.8.4 Fill material shall not be dumped directly on pipelines but shall be stockpiled outside the limits noted in these recommendations and shall be carefully bladed in-place.
- E13.8.5 Only use compaction equipment approved by the contract administrator to compact fill materials above critical pipelines. Compaction of fill materials shall be completed using static methods only, no vibratory compaction will be allowed within the limits noted in these recommendations.
- E13.8.6 Construction operations shall be staged to minimize the time period between excavation to subgrade and placement of granular subbase materials. Should bare subgrade be left overnight, measures shall be implemented to protect the subgrade against inadvertent travel over it and to minimize the impact of wet weather.
- E13.9 Subbase and Base Course Construction
- E13.9.1 Subbase or base course materials shall not be dumped directly on pipelines but shall be stockpiled outside limits noted in these recommendations and shall be carefully bladed in place.
- E13.9.2 Subbase compaction within 3 m horizontal of the centreline of a critical pipeline shall be either carried out by static methods (without vibration) or with smaller approved equipment such as hand held plate packers or smaller roller equipment.
- E13.10 Paving

E13.10.1 Vibratory compaction of asphalt pavements *shall* be permitted within 3 m (horizontal) of the center of critical pipelines.

E14. TREE REMOVAL

DESCRIPTION

E14.1 General

E14.1.1 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

E14.2 Remove trees in accordance with CW 3010.

MEASUREMENT AND PAYMENT

E14.3 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.

E15. GREEN BIKE LANE TREATMENT

DESCRIPTION

E15.1 General

E15.1.1 This specification covers the supply and installation of Green Methyl Methacrylate Area (MMA) Bike Lane Treatment.

E15.1.2 Drawings and Manuals

- (a) Contract Drawings;
- (b) Attached Manual; Appendix 'B' - Application Instructions – MMAX Area Markings
- (c) Attached Manual; Appendix 'C' – CycleGrip MMAX Specification – Methyl Methacrylate Bike Lane Treatment

MATERIAL

E15.2 CycleGrip® MMAX kit – includes CycleGrip® MMAX Resin (**green**), CycleGrip® MMAX Aggregate and Catalyst

E15.3 Source

E15.3.1 ENNIS-FLINT

Available from:

ENNIS-FLINT

Attention: Deryk Upton
Ph: 604-315-8765
Email: dupton@ennisflint.com
Web: www.ennisflint.com

CONSTRUCTION METHODS

E15.4 Preparation and Installation

E15.4.1 Surface is to be prepared in accordance with Appendix B and Appendix C.

E15.4.2 Treatment is to be installed in accordance with Appendix B and Appendix C.

MEASUREMENT AND PAYMENT

E15.5 Supply and installation of MMA bike lane treatment will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Supply and Install Green Paint". The area to be paid for will be the total number of square metres of MMA bike lane treatment supplied and installed in accordance with this specification, as accepted and measured by the Contract Administrator.

E15.6 Surface preparation for MMA markings shall be included in the cost for "Supply and Installation Green Paint" and no separate measurement and payment will be made.

E16. INSTALLATION OF INTERLOCKING PAVING STONES

DESCRIPTION

E16.1 General

E16.1.1 Further to CW 3330 – R5, this specification will cover the installation of interlocking paving stones, as identified on the drawings.

E16.1.2 Referenced Standard Construction Specifications

(a) CW 3330 – Installation of Interlocking Paving Stones – R5

E16.1.3 Referenced Standard Detail

(a) SD-240A – Interlocking Paving Stone Detail for Medians and Private Approaches

MATERIALS

E16.2 Interlocking Paving Stones

E16.2.1 100 x 200 Blue Holland Pavers in Soldier Course shall be installed at Winnipeg Transit bus stops, at the locations noted on the drawings.

E16.2.2 Paving Stones shall conform to the requirements of CAN3-A231.2, Precast Concrete Pavers.

CONSTRUCTION METHODS

E16.3 Paving stones shall be installed as detailed on the drawings and in accordance with CW 3330 – R5.

MEASUREMENT AND PAYMENT

E16.4 Measurement will be in accordance with CW 3330 – R5 Installation of Interlocking Paving Stones.

E17. CONCRETE SIDEWALK WITH BLOCKOUTS

DESCRIPTION

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

E17.2 Referenced Standard Construction Specifications

(a) CW 3325 – Portland Cement Concrete Sidewalk – R5

(b) CW 3310 – Portland Cement Concrete Pavement Works – R17

MATERIALS

E17.3 Concrete mix design shall comply with CW 3310

E17.4 All other materials as per CW 3310.

CONSTRUCTION METHODS

E17.5 Construction as per Contract Drawings and as per CW 3310 and CW3325.

E17.6 Block outs for all paving patterns, paving fields, and asphalt overlays in sidewalk to be constructed as per the Drawings. All forming is incidental to the unit price Bid for this specification.

E17.7 Any thickened edges of sidewalk will be incidental to the unit price Bid for the concrete sidewalk.

MEASUREMENT AND PAYMENT

E17.8 Supply and Installation of concrete sidewalk with block outs for paving stones will be measured on an area basis and paid for at the Contract Unit Price for "100 mm Concrete Sidewalk with Block Outs for Paving Stones". The area to be paid for shall be the total number of square metres formed and placed in accordance with this Specification and as measured and accepted by the Contract Administrator.

E17.9 Supply and Installation of concrete sidewalk with block outs for asphalt will be measured on an area basis and paid for at the Contract Unit Price for "100 mm Concrete Sidewalk with Block Outs for 50mm Asphalt Overlay". The area to be paid for shall be the total number of square metres formed and placed in accordance with this Specification and as measured and accepted by the Contract Administrator.

E18. BONDING AGENT

DESCRIPTION

E18.1 Further to CW 3230 – R8, this specification covers the installation of bonding agent to be used for bonding tie bars and dowels into hardened concrete.

MATERIALS

E18.2 Sika AnchorFix – 3001 – High-strength, high-load and low-voc, pure epoxy anchoring adhesive with extended working time, or equivalent product approved by the Contract Administrator.

CONSTRUCTION METHODS

E18.3 Follow manufacturers instructions for the installation of bonding agent.

MEASUREMENT AND PAYMENT

E18.4 No measurement for payment will be made for performing all supply and operations herein described and shall be considered incidental to drilled tie-bar and/or dowel installation.

E19. RELOCATE BUS STOP

DESCRIPTION

E19.1 General

E19.1.1 This specification covers the removal and reinstallation of a City of Winnipeg bus stop, including the shelter, bus stop flag, and associated furniture.

E19.1.2 Referenced Standard Construction Specifications

(a) CW 3310 – Portland Cement Concrete Pavement Works – R17

- (b) CW 3235 – Renewal of Existing Miscellaneous Concrete Slabs – R9
- (c) CW 3110 – Sub-Grade, Sub-Base and Base Course Construction – R19

MATERIALS

E19.2 Concrete Materials

E19.2.1 Supply concrete materials in accordance with Section 5 & 6 of CW 3310.

E19.3 Reinforcing Steel

E19.3.1 Supply reinforcing steel in accordance with Section 5.4.4 & 5.4.5 of CW 3310.

CONSTRUCTION METHODS

E19.4 Existing Bus Stop Removal

E19.4.1 Existing Bus Stop concrete slab will be removed in accordance with Section 3.1 of CW 3235.

E19.5 150mm Reinforced Concrete Bus Stop

E19.5.1 150mm Reinforced Concrete Bus Stop slab will be installed in accordance with Section 3.1 of CW 3235, and as shown on the Contract Drawings.

E19.5.2 New 150mm Reinforced Concrete Bus Stop slab should have similar dimensions to the existing bus stop, such that the layout of the bus shelter and associated furniture will be identical, in relation to each other.

E19.6 Relocate Existing Bus Shelter

E19.6.1 Carefully remove and salvage existing bus shelter, and associated furniture for reinstallation. All components and all hardware shall be salvaged for reuse, and stockpiled at locations approved or designated by the Contract Administrator.

E19.6.2 In the event of damage to any materials by the Contractor, the Contractor shall immediately notify the Contract Administrator and make all repairs or replacement necessary, at their own expense, to the satisfaction of the Contract Administrator. In no circumstances shall the Contractor reinstall a damaged component.

E19.6.3 Reinstall the salvaged bus shelter and associated furniture to the satisfaction of the Contract Administrator. The bus shelter and associated furniture shall be installed in a layout identical to the existing location, in relation to each other.

E19.7 Remove Existing Concrete Base

E19.7.1 Remove existing concrete base in accordance with CW 3110.

E19.8 Install Bus Stop Flag Concrete Base

E19.8.1 Install bus stop flag concrete base, including rebar, bolts, metal base, etc., in accordance with the location and details in the Contract Drawings.

E19.9 Relocate Bus Stop Flag

E19.9.1 Carefully remove and salvage existing bus stop flag. All components and all hardware shall be salvaged for reuse, and stockpiled at locations approved or designated by the Contract Administrator.

E19.9.2 In the event of damage to any materials by the Contractor, the Contractor shall immediately notify the Contract Administrator and make all repairs or replacement necessary, at their own expense, to the satisfaction of the Contract Administrator. In no circumstances shall the Contractor reinstall a damaged component.

- E19.9.3 Reinstall the salvaged bus stop flag on the new concrete base to the satisfaction of the Contract Administrator.

MEASUREMENT AND PAYMENT

- E19.10 Existing bus stop removal will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Existing Bus Stop Removal". The area to be paid for shall be the total number of square metres of existing bus stop removed in accordance with this specification, accepted and measured by the Contract Administrator.
- E19.11 150mm reinforced concrete bus stop installation will be measured on an area basis and paid for at the Contract Unit Price per square metre for "150mm Reinforced Concrete Bus Stop". The area to be paid for shall be the total number of square metres of existing bus stop installed in accordance with this specification, accepted and measured by the Contract Administrator.
- E19.12 Relocating existing bus shelter and associated furniture will be measured on a unit basis and paid for at the Contract Unit Price per item for "Relocating Existing Bus Shelter". The number to be paid for shall be the total number of bus shelters, including the furniture associated with each shelter, relocated in accordance with this Specification and accepted by the Contract Administrator.
- E19.13 "Remove Existing Concrete Base" shall be measured and paid for in accordance with CW 3110.
- E19.14 Installing bus stop flag concrete base will be measured on a unit basis and paid for at the Contract Unit Price per item for "Install Bus Stop Flag Concrete Base". The number to be paid for shall be the total number of concrete bases installed in accordance with this Specification and accepted by the Contract Administrator.
- E19.15 Relocating bus stop flag will be measured on a unit basis and paid for at the Contract Unit Price per item for "Relocating Bus Stop Flag". The number to be paid for shall be the total number of bus stop flags relocated in accordance with this Specification and accepted by the Contract Administrator.

E20. REMOVE & REPLACE BENCHING OF EXISTING MANHOLE

DESCRIPTION

- E20.1 General
- E20.1.1 This specification covers the removal and reinstallation of a benching in an existing manhole.
- E20.1.2 Referenced Standard Construction Specifications
(a) CW 2130 – Gravity Sewers – R12

MATERIALS

- E20.1.3 Materials shall be in accordance with CW 2130.

CONSTRUCTION METHODS

- E20.2 Remove & Replace Benching of Existing Manhole
- E20.2.1 Carefully remove benching in existing manhole and dispose appropriately.
- E20.2.2 Install benching in existing manhole in accordance with CW 2130.

MEASUREMENT AND PAYMENT

- E20.3 Removing and reinstalling benching in an existing manhole will be measured on a unit basis and paid for at the Contract Unit Price per item for "Remove & Replace Benching of Existing Manhole". The number to be paid for shall be the total number of manholes where the benching

is removed and replace in accordance with this Specification and accepted by the Contract Administrator.

E21. VALVE CLEANING

DESCRIPTION

E21.1 General

E21.1.1 This specification covers the cleaning of existing valves on site before the start of construction.

CONSTRUCTION METHODS

E21.2 Valve Cleaning

E21.2.1 Open valves to visually inspect the current condition.

E21.2.2 Use necessary equipment to clean dirt and debris from any valves that cannot be operated or where a valve box extension cannot be installed.

E21.2.3 Prepare a list of deficient items found and provide to the Contract Administrator.

MEASUREMENT AND PAYMENT

E21.3 Valve cleaning will be measured on a unit basis and paid for at the Contract Unit Price per item for "Valve Cleaning". The number to be paid for shall be the total number of valves cleaned in accordance with this Specification and accepted by the Contract Administrator.

E22. INSULATION OF EXISTING WATER SERVICES

DESCRIPTION

E22.1 General

E22.1.1 This specification shall cover the supply and installation of rigid installation over watermains, feeder mains, water services and other water infrastructure

MATERIALS

E22.2 Approved Products

(a) High Strength Rigid insulation for installation below grade to be CAN/ULC S701, Type 4, Styrofoam HI 40 by Dow Chemical, Foamular 400 by Owens Corning, or approved equal.

CONSTRUCTION METHODS

E22.3 Insulation shall be installed in accordance with CW2110, SD-018 and as directed by the Contract Administrator.

E22.3.1 Rigid insulation shall be installed with the top of the insulation flush with the top of the subgrade.

E22.3.2 Rigid insulation sheets shall be installed in a staggered pattern to maximise joint overlap.

MEASUREMENT AND PAYMENT

E22.4 Insulation of existing water services, watermains, feeder mains and other water infrastructure will be measured on an area basis and paid for at the Contract Unit Price per square meter for "Watermain and Water Service Insulation". The area to be paid will be the total number of square meters of insulation installed in accordance with this specification, as measured and accepted by the contract administrator.

APPENDIX 'A'

Application Instructions for MMAX Area Markings

APPLICATION INSTRUCTIONS

MMAX AREA MARKINGS

Overview:

MMAX AREA MARKINGS conveniently combine state-of-the-art Methyl Methacrylate resins with hardwearing aggregate and premium pigments to deliver an extremely durable, highly visible and color stable lane delineation treatment that meets the non-slip requirements needed for pedestrians, cyclists and vehicles.

MMAX AREA MARKINGS are mixed onsite and is distributed on to the pavement substrate using squeegees and cure in a wide range of temperatures with predictable back to traffic times of 20-60 minutes.

EQUIPMENT:

The following items are needed during the different stages of application.

<u>Surface prep & layout</u>	<u>Mixing</u>	<u>Installation</u>	<u>Clean up</u>
Stiff broom	High speed / torque drill (with power source / spare batteries)	Long handled squeegees	Solvent resistant gloves
Blower / compressed air	Mixing paddles	Spare rubber squeegee blades	Safety glasses
Measuring tape	Measuring cup	Straight hand trowels	Acetone
Chalk line	Small tarp	Long handled roller cages	Large cleaning tub
Marking crayons	Screw driver/bucket opener	Rollers - med. nap (5 per 1000 sqft)	Solvent resistant brushes
Duct tape	Utility knife		Cloth rags
Roofing paper	Misc tools		Trash bags

GENERAL REQUIREMENTS:

SURFACE: MMAX AREA MARKINGS can be applied on stable, well compacted asphalt or non-bituminous concrete surfaces, such as Portland cement concrete. New substrates should be allowed to age harden or cure for minimum 15 days (asphalt) to 30 days (concrete) before installation. Pavement surface must be completely free of dirt, debris, moisture, curing compounds and other contaminants that can affect adhesion. Chemical contaminants such as vehicle fluids must be removed well in advance using a degreasing solution and power washer, ensuring all residues are removed. Existing pavement markings within the application area may be removed by gently sandblasting, shot-blasting, water-blasting or grinding making sure that minimal damage is done to the substrate. Aged surfaces containing reflective cracking should be repaired, or reflective cracking should be expected to re-appear after installation.

MATERIAL: Avoid extreme storage temperatures. Keep materials in dry, protected areas, between 40°F – 80°F. Keep out of direct sunlight and protected from open flame. Use within six months of receipt.

TEMPERATURE: Ambient and surface temperatures for installation should be between 40-100°F, and should be 5°F above the dew point temperature. There should also be less than 75% relative humidity when installing MMAX AREA MARKINGS.

SAFETY PRECAUTIONS:

Review MSDS for MMAX AREA MARKING products before usage.

INSTRUCTIONS FOR APPLICATION:

Surface Prep: Clean the intended application area thoroughly. All loose particles, dirt, sand dust, etc. must be removed. Concrete surfaces should be wire brushed, at minimum. Sweep completely. Use a power blower or compressed air. Clean areas containing chemical contaminants such as vehicle fluids, using a degreasing solution. Proper removal of contaminants and degreasing solution are necessary well in advance of the application.

APPLICATION INSTRUCTIONS

MMAX AREA MARKINGS

Masking: Using duct tape and roofing paper, mask off perimeter of area to be colored, as well as any object not to be colored such as manhole covers, drains and existing markings.

Mixing: Add the supplied 25.7 lbs of MMAX AREA MARKING Aggregate into the 2 gallons MMAX AREA MARKING Resin and mix with clean mixing paddle, using a high speed, high torque drill. Add the recommended amount of powder catalyst, based on ambient and pavement temperature (Table 1), and mix thoroughly.

After adding the catalyst, MMAX AREA MARKING will start curing and must be applied to the pavement immediately. There will be 4 to 10 minute working time, which is temperature dependent.

Material will mix to approximately 2.79 gallons (10.55 liters), weigh 52 lbs and cover 45-50 sqft @ 90 mils.

Caution: Clean the mixing paddle between uses or understand that material will immediately initiate curing if previously exposed to catalyzed material (and not cleaned).

Table 1: Recommended catalyst by temperature range:

< 70°F / 18°C	lbs (kg)	.51 (.23)
	fl oz (liters)	12 (.365)
70-90°F / 18-32°C	lbs (kg)	0.26 (.12)
	fl oz (liters)	6 (.185)
> 90°F / 32°C	lbs (kg)	0.13 (.06)
	fl oz (liters)	3 (.09)

Installation: Immediately, pour mixed material on to pavement to be treated and use a squeegee to evenly distribute at a coverage rate of 16-18 sq. ft. per gallon, or 45-50 sq. ft. per pail. Pre-measuring / pre-marking can assist to ensure proper coverage. Use trowel in small, tight areas where squeegee cannot effectively be used. After rough distribution with squeegee, back roll material (one direction only) to remove working lines created with squeegee and create a consistent, anti-slip texture. Roller will last longer during continuous usage when it remains wetted with new batches of MMA resin, but will need to be replaced when it starts ‘pulling’ material or creating differences in texture. Stopping and starting will decrease the useful life of the roller.

As material gels, but before it cures, remove masking.

Clean up: Clean all tooling in acetone before material is cured. Clean in well ventilated areas to reduce fume build-up and worker exposure. Do not come into direct contact with solvents - use proper personal protective equipment. Acetone is extremely flammable; take proper handling measures to reduce static discharge and combustion. Dispose of all contaminated materials in accordance with all applicable federal, state and local laws and regulations.

Opening to traffic: MMAX AREA MARKINGS must be 100% cured, which will be a hardened solid state, before traffic is permitted. Curing is based on temperatures and amount of catalyst added, but typically takes 30-60 minutes.

APPENDIX 'B'

CycleGrip MMAX Specification for Methyl Methacrylate Bike Lane Treatment

CycleGrip® MMAX SPECIFICATION Methyl Methacrylate Bike Lane Treatment

1. **USE:** CycleGrip® MMAX is a specialized bike lane treatment system that combines state-of-the-art Methyl Methacrylate resins with hardwearing aggregate and premium pigments to deliver an extremely durable, highly visible and color stable lane delineation treatment that meets the non-slip requirements needed for cyclists.

CycleGrip® MMAX shall be used to delineate bike lanes and increase bicycle lane presence in applications such as, but not limited to, corridor treatment along the length of a bike lane or cycle track especially at areas where bicycle and vehicular conflict are expected and added safety is needed.

1.1. CycleGrip® MMAX is only available through Ennis-Flint, or an authorized distributor of Ennis-Flint.

2. **MATERIAL:** Materials used to create CycleGrip® MMAX shall consist of CycleGrip® MMAX Resin, CycleGrip® MMAX Aggregate and catalyst.

2.1. CycleGrip® MMAX resin.

2.1.1. CycleGrip® MMAX resin shall have the following properties:

Density	8.1 +/- .35	Lbs/Gal
Tensile	>400 PSI	ASTM D638
Elongation	>180%	ASTM D638
Flash Point	>10°C	ASTM D1310

2.1.2. CycleGrip® MMAX resin shall be pigmented to meet the following color coordinates:

2.1.2.1. Daytime chromaticity:

1		2		3		4	
X	y	x	y	x	y	x	y
0.230	0.754	0.266	0.500	0.367	0.500	0.444	0.555

The daytime luminance factor (Y) shall be at least 20, but no more than 35.

2.1.2.2. Nighttime chromaticity:

1		2		3		4	
X	y	x	y	x	y	x	y
0.230	0.754	0.336	0.540	0.450	0.500	0.479	0.520

- 2.2. CycleGrip® MMAX aggregate shall be provided by the manufacturer and will have a hardness of 9 on the Mohs scale. Aggregate shall be a neutral, light color that will not affect the color of the finished product, and will have a mesh sizing of 24 Grit.

- 2.3. Catalyst shall come in a powder form and be supplied in bulk at the maximum usage rate of 0.51 +/- 0.2 lbs (.23 +/- .09 kg) per pail of resin.

3. **APPLICATION EQUIPMENT:**

- 3.1. Squeegees shall be designed for heavy duty usage and sourced locally.
- 3.2. Rollers shall be medium nap in texture and require a roller cage and handle.
- 3.3. Drill shall be high speed, high torque capable of supplying enough power to thoroughly mix CycleGrip® MMAX additives when paired with a paint mixing paddle.

4. **APPLICATION:**

- 4.1. Pre-conditions. Aged surfaces containing reflective cracking should be repaired, or it should be expected that reflective cracking may re-appear.

CycleGrip® MMAX SPECIFICATION Methyl Methacrylate Bike Lane Treatment

- 4.2. Surface preparation.** Clean the intended application area thoroughly. All loose particles, dirt, sand dust, etc. must be removed. Broom and use a power blower or compressed air. The surface must be clean, dry and free of all dust, oil, debris and any other material that might interfere with the bond between CycleGrip® MMAX and surface to be treated.
- 4.2.1. Concrete:** All curing compounds shall be completely removed from concrete surfaces prior to installation by shot blasting or grinding. Existing concrete surfaces shall be wire brushed, but may require shot blasting or grinding dependent on condition.
- 4.2.2. Chemical contaminants:** Clean areas containing chemical contaminants such as vehicle fluids, using a degreasing solution, and ensure removal of contaminants and degreasing solution well in advance of the application.
- 4.2.3. Obstacles:** Pavement markings that are to be left in place, utilities, drainage structures, curbs and any other structure within or adjacent to the treatment location shall be masked to protect from application. Existing pavement markings conflicting with the surface treatment should be removed by grinding or water blasting. Extra care should be taken to thoroughly remove the dust and debris caused from grinding.
- 4.3. Mixing.** Catalyst quantity shall be based on ambient and pavement temperature and must be mixed very thoroughly at specified rates and into materials listed in the materials mixing guide. Material shall mix to approximately 2.79 gallons (10.55 liters) and weigh approximately 52 lbs (23.6 kg).

MATERIALS MIXING GUIDE

CycleGrip® MMAX resin	2 (7.6)	gallons (liters)
CycleGrip® MMAX aggregate	25.0 (11.34)	lbs (kg)
Catalyst < 70° F / 18° C	8 (0.24)	fluid ounces (liters)
Catalyst > 70° F / 18° C	4 (0.12)	fluid ounces (liters)

- 4.4. Installation.** CycleGrip® MMAX shall immediately be poured on to pavement and distributed at 45-50 sq. ft. per pail using a squeegee. Trowels can be used where a squeegee is not effective. Use roller to back roll CycleGrip® MMAX to remove working lines and create a consistent, anti-slip texture. Remove masking as material gels, but before it cures.
- 4.5. Opening to traffic.** CycleGrip® MMAX must be 100% cured, which will be a hardened solid state, before traffic is permitted. Curing typically takes 30-60 minutes and is based on temperature and amount of catalyst added.

5. PERFORMANCE PROPERTIES:

5.1. CycleGrip® MMAX will have the following performance properties:

Density	18.5 +/- 0.5	Lbs / Gallon
Solids	>99%	D2205
Build Thickness	90 +/-10	Mils
VOC	<100	Grams/Liter
Pot Life	~15min	AASHTO T237
Skid	>60	ASTM E303
Hardness	50-60	ASTM D2240
Water Absorption	<0.25%	ASTM D570

6. PACKAGING:

- 6.1.** CycleGrip® MMAX resin must be supplied in compliant metal pails that have a UN1A2Y1.9/100 rating.
- 6.2.** CycleGrip® MMAX Aggregate must be supplied in 25.0 +/- 0.5 lbs. (11.34 +/- .23 kg) pre-packaged bags or pails.

CycleGrip® MMAX SPECIFICATION

Methyl Methacrylate Bike Lane Treatment

7. **STORAGE:** Avoid extreme storage temperatures. Keep materials in dry, protected areas, between 40°F – 80°F. Keep out of direct sunlight and protected from open flame. Use within six months of receipt.
8. **TECHNICAL SERVICES:** Shall be available from the manufacturer upon request.