



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 8-2016

**2016 REGIONAL STREET RENEWAL PROGRAM – KEEWATIN STREET FROM
NOTRE DAME AVENUE TO LOGAN AVENUE REHABILITATION – ASPHALT
RESURFACING AND ASSOCIATED WORKS**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

- B1.1 2016 REGIONAL STREET RENEWAL PROGRAM – KEEWATIN STREET FROM NOTRE DAME AVENUE TO LOGAN AVENUE REHABILITATION – ASPHALT RESURFACING AND ASSOCIATED WORKS

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, April 6, 2016.
- 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 Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.
- B3.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.
- 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 Bid Opportunity 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 Bid Opportunity 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 Bid Opportunity, 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.
- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B5.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- 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 B16.
- 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) Bid Security
 - (i) Form G1: Bid Bond and Agreement to Bond, or
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
a certified cheque or draft.
- 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, to constitute a responsive Bid.
- B7.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- 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 Bid Opportunity 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 Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B16.1(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 12 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, shall be affixed;
 - (d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- 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 B16.4.2, an electronic spreadsheet Form B: Prices in Microsoft Excel (.xls) format is available along with the Adobe PDF documents for this Bid Opportunity on the Bid Opportunities page at the Materials Management Division website at <http://www.winnipeg.ca/matmgt/>
- B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B9.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. DISCLOSURE

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

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

B10.2 The Persons are:

- (a) N/A

B11. QUALIFICATION

B11.1 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.

B11.2 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>

B11.3 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);

B11.4 Further to B11.3(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) 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
- (b) 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
- (c) 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/>).

B11.5 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.

B11.6 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.

B12. BID SECURITY

B12.1 The Bidder shall provide bid security in the form of:

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

B12.1.1 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.

B12.1.2 All signatures on bid securities shall be original.

B12.1.3 The Bidder shall sign the Bid Bond.

B12.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.

B12.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

B12.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B12.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B12.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

B12.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

B13. OPENING OF BIDS AND RELEASE OF INFORMATION

B13.1 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.

B13.1.1 Bidders or their representatives may attend.

B13.1.2 Bids determined by the Manager of Materials, or his/her designate, to not include the bid security specified in B12 will not be read out.

B13.2 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/>

B13.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page

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

- B13.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B14. IRREVOCABLE BID

- B14.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B14.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

B15. WITHDRAWAL OF BIDS

- B15.1 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.
- B15.1.1 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.
- B15.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B15.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B15.1.3(b), declare the Bid withdrawn.
- B15.2 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 B14.2 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.

B16. EVALUATION OF BIDS

- B16.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation therefrom (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B11 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B16.2 Further to B16.1(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.

B16.3 Further to B16.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.

B16.4 Further to B16.1(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.

B16.4.1 Further to B16.1(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.

B16.4.2 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.

B17. AWARD OF CONTRACT

B17.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B17.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B17.2.1 Without limiting the generality of B17.2, 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.

B17.3 The Work of this Contract is contingent upon Council approval of sufficient funding in the 2016 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.

B17.4 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B16.

B17.4.1 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 2006 12 15) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm
- C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

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

- (a) Asphalt Resurfacing and Associated Works – Pavement Rehabilitation
 - (i) Keewatin Street Northbound – Notre Dame Avenue to Logan Avenue
 - (ii) Keewatin Street Southbound – Logan Avenue to Notre Dame Avenue

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

- (a) Asphalt Resurfacing and Associated Works – Pavement Rehabilitation
 - (i) Planing of existing asphalt and at intersections as required;
 - (ii) Construction of temporary asphalt pavement for cross-overs;
 - (iii) Removal of existing curb and sidewalk;
 - (iv) Removal of existing bullnose;
 - (v) Removal and installation of catch pits/catch basins and drainage connection/sewer service pipes;
 - (vi) Sewer service(CB Lead) repairs;
 - (vii) Full depth concrete repairs of existing slabs and joints;
 - (viii) Adjustment of existing pavement and boulevard structures;
 - (ix) Renewal of existing sidewalks as required;
 - (x) Construction of monolithic curb and sidewalk;
 - (xi) Installation of detectable warning surface tiles;
 - (xii) Installation of MMA Markings;
 - (xiii) Renewal of existing curbs as required;
 - (xiv) Construction of monolithic concrete splash strip utilizing slip form paver(150mm reveal height);
 - (xv) Construction of monolithic concrete bullnose and concrete median slab;
 - (xvi) Boulevard restoration;
 - (xvii) Restoration of temporary cross-overs; and
 - (xviii) Construction of asphalt overlay(average thickness 80mm)

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is:

Richard Weibel
Technologist III
106-1155 Pacific Avenue, Winnipeg, Manitoba, R3E 3P1
Telephone No. 204-805-0104
Facsimile No. 204-986-5302

D3.2 At the pre-construction meeting, the Contract Administrator 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 B7.8.

D4. CONTRACTOR'S SUPERVISOR

D4.1 At the pre-construction meeting, the Contractor shall identify his/her designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

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 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the facsimile number identified in D3.1.

D6.3 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

D6.4 Bids Submissions must be submitted to the address in B7.8.

D7. FURNISHING OF DOCUMENTS

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

SUBMISSIONS

D8. AUTHORITY TO CARRY ON BUSINESS

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

D9. SAFE WORK PLAN

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

D10. INSURANCE

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

D11. PERFORMANCE SECURITY

- D11.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:
- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or
 - (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
 - (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.
- D11.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.
- D11.2 If the bid security provided in his/her Bid was not a certified cheque or draft pursuant to B12.1(c), the Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site and in no event later than the date specified in the C4.1 for the return of the executed Contract.

D12. SUBCONTRACTOR LIST

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

D13. DETAILED WORK SCHEDULE

- D13.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.
- D13.2 The detailed work schedule shall consist of the following:
- (a) a Gantt chart for the Work, acceptable to the Contract Administrator.
- D13.3 Further to D13.2(a), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

SCHEDULE OF WORK

D14. COMMENCEMENT

- D14.1 The Contractor shall not commence any Work until he/she is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.
- D14.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D8;
 - (ii) evidence of the workers compensation coverage specified in C6.15;

- (iii) the twenty-four (24) hour emergency response phone number specified in D4.2;
 - (iv) the Safe Work Plan specified in D9;
 - (v) evidence of the insurance specified in D10;
 - (vi) the performance security specified in D11;
 - (vii) the subcontractor list specified in D12; and
 - (viii) the detailed work schedule specified in D13.
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.
- D14.3 The Contractor shall not commence the Work on the Site before May 9, 2016, and shall commence the Work on Site no later than May 16, 2016, as directed by the Contract Administrator and weather permitting.

D14.4 The City intends to award this Contract by May 6, 2016

D15. WORKING DAYS

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

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

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

D15.1.3 When the Work includes two or more major types of Work that can be performed under different atmospheric conditions, the Contract Administrator shall consider all major types of Work in determining whether the Contractor was able to work in assessing Working Days.

D16. RESTRICTED WORK HOURS

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

D17. WORK BY OTHERS

D17.1 Work by others on or near the Site will include but not necessarily be limited to:

- (a) City of Winnipeg Traffic Signals Branch – installation of loops and signal plant at Notre Dame Avenue/Keewatin Street intersection and Logan Avenue/Keewatin Intersection;
- (b) City of Winnipeg Traffic Services Branch – traffic diversion signing and line painting;
- (c) City of Winnipeg Geomatics Branch – various works on survey monuments;
- (d) MTS – adjusting MTS manhole frames;
- (e) Water and Waste Contract (Bid Opportunity No. 52-2016) – 2016 Watermain Renewals Contract No. 11: Logan Avenue from Keewatin Street to Blake Street;
- (f) Logan Avenue Concrete Reconstruction (Bid Opportunity No. 12-2016) – 2016 Regional Street Renewal Program: Logan Avenue from Keewatin Street to Blake Street.

D17.2 The Contract Administrator will attempt to arrange and coordinate Work to be performed by others so that such Work does not interfere with the Work Schedule of the Contractor. Where Work by others interferes, as determined by the Contract Administrator, with the Contractors

planned Work, the Contractor shall modify his plans and do other Work. Unless the Contract Administrator determines that there was no opportunity for the Contractor to do a similar amount of Work no consideration will be made to extending the Contract time.

- D17.3 The City of Winnipeg Water and Waste Department has scheduled a watermain renewal for Logan Avenue from Keewatin Street to Blake Street:
- (a) It is anticipated that the installation of watermain and water services, sewer repair Works, compaction of backfill and temporary restoration, at the Keewatin Street/Logan Avenue intersection will be completed by May 20, 2016, weather permitting.
 - (b) It is anticipated that the installation of watermain and water services, sewer repair Works, compaction of backfill and temporary restoration, on Logan Avenue from Keewatin Street to Worth Street as required and all necessary testing and inspections will be completed by June 17, 2016, weather permitting.
 - (c) It is anticipated that the installation of watermain and water services, sewer repair Works, compaction of backfill and temporary restoration, on Logan Avenue from Worth Street to Blake Street will be completed by July 8, 2016, weather permitting.
 - (d) If lane closures are required at the Keewatin Street/Logan Avenue intersection, the Contract Administrator is to coordinate traffic signing with the Contractor of Bid Opportunity No. 52-2016 – 2016 Watermain Renewal Contract No. 11 and the City of Winnipeg Traffic Services Branch.
- D17.4 The City of Winnipeg Public Works Department has scheduled a concrete reconstruction for Logan Avenue from Keewatin Street to Blake Street. It is anticipated that the Logan Avenue construction Works are expected to commence by July 8, 2016 and are expected to be completed by October 26, 2016, weather permitting. If lane closures are required at the Keewatin Street/Logan Avenue intersection, the Contract Administrator will coordinate traffic signing with the Contractor of Bid Opportunity No. 12-2016 – 2016 Regional Street Renewal Program and the City of Winnipeg Traffic Services Branch.

D18. SEQUENCE OF WORK

- D18.1 Further to C6.1, the sequence of work shall be as follows:
- D18.1.1 The Work shall be divided into 4 Stages. Each Stage are further subdivided into major items of work.
- D18.1.2 **Keewatin Street from Notre Dame Avenue to Logan Avenue**
- (a) **Stage I – Notre Dame Avenue, William Avenue West, Ross Avenue West and Alexander Avenue Intersections**
 - (i) Planing of existing asphalt where required;
 - (ii) Removal of existing curb and sidewalk;
 - (iii) Removal of existing bullnose;
 - (iv) Construction of temporary asphalt pavement for cross-overs;
 - (v) Removal and installation of catch pits/catch basins and drainage connection/sewer service pipes;
 - (vi) Sewer service(CB Lead) repairs;
 - (vii) Full depth concrete repairs of existing slabs and joints;
 - (viii) Adjustment of existing pavement and boulevard structures;
 - (ix) Construction of monolithic concrete bullnose and concrete median;
 - (x) Renewal of existing sidewalks as required;
 - (xi) Construction of monolithic curb and sidewalk;
 - (xii) Installation of detectable warning surface tiles;
 - (xiii) Renewal of existing curbs as required;
 - (xiv) Boulevard restoration;

- (xv) Placing of scratch course of asphalt; and
 - (xvi) Placing the topsoil and finished grading of all boulevard and median areas shall be completed prior to commencing construction of the asphaltic concrete overlay, including the scratch course.
- (b) **Stage II – Northbound Gutter Lane and Northbound Median lane**
- (i) Planing of existing asphalt where required;
 - (ii) Removal of existing curb and sidewalk;
 - (iii) Removal of existing bullnose;
 - (iv) Removal and installation of catch pits/catch basins and drainage connection/sewer service pipes;
 - (v) Sewer service(CB Lead) repairs;
 - (vi) Full depth concrete repairs of existing slabs and joints;
 - (vii) Adjustment of existing pavement and boulevard structures;
 - (viii) Construction of monolithic concrete splash strip;
 - (ix) Construction of monolithic concrete bullnose;
 - (x) Renewal of existing sidewalks as required;
 - (xi) Construction of monolithic curb and sidewalk;
 - (xii) Installation of detectable warning surface tiles;
 - (xiii) Renewal of existing curbs as required;
 - (xiv) Boulevard restoration;
 - (xv) Placing of sod and/or salt tolerant seeding;
 - (xvi) Placing of scratch course of asphalt; and
 - (xvii) Placing the topsoil and finished grading of all boulevard and median areas shall be completed prior to commencing construction of the asphaltic concrete overlay, including the scratch course.
- (c) **Stage III – Southbound Gutter Lane and Southbound Median lane**
- (i) Planing of existing asphalt where required;
 - (ii) Removal of existing curb and sidewalk;
 - (iii) Removal of existing bullnose;
 - (iv) Removal and installation of catch pits/catch basins and drainage connection/sewer service pipes;
 - (v) Sewer service(CB Lead) repairs;
 - (vi) Full depth concrete repairs of existing slabs and joints;
 - (vii) Adjustment of existing pavement and boulevard structures;
 - (viii) Construction of monolithic concrete splash strip;
 - (ix) Construction of monolithic concrete bullnose;
 - (x) Renewal of existing sidewalks as required;
 - (xi) Construction of monolithic curb and sidewalk;
 - (xii) Installation of detectable warning surface tiles;
 - (xiii) Renewal of existing curbs as required;
 - (xiv) Boulevard restoration;
 - (xv) Placing of sod and/or salt tolerant seeding;
 - (xvi) Placing of scratch course of asphalt; and
 - (xvii) Placing the topsoil and finished grading of all boulevard and median areas shall be completed prior to commencing construction of the asphaltic concrete overlay, including the scratch course.
- (d) **Stage IV - Removal of Temporary Asphalt Pavement Cross-overs and Restoration of Medians at William Avenue West and Alexander Avenue Intersections – All Lanes Final Lift of Asphalt**

- (i) Removal of temporary asphalt pavement cross-overs;
- (ii) Removal of existing pavement;
- (iii) Construction of monolithic concrete splash strip;
- (iv) Construction of monolithic concrete bullnose;
- (v) Boulevard restoration;
- (vi) Placing of sod and/or salt tolerant seeding(if not done with placing of topsoil);
- (vii) Placing final lift of asphalt on Stage I, Stage II and Stage III; and
- (viii) Installation of MMA Markings.

- D18.1.3 All asphaltic concrete work shall be performed using a lane-at-a-time method (see E4.1 for minimum requirements of traffic lanes to be left open at various times).
- D18.1.4 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.
- D18.1.5 Immediately following the completion of the asphaltic concrete works, 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.

D19. SUBSTANTIAL PERFORMANCE

- D19.1 The Contractor shall achieve Substantial Performance within sixty (60) consecutive Working Days of the commencement of the Work as specified in D14.
- 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 within sixty-five (65) consecutive Working Days of the commencement of the Work as specified in D14.
- D20.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D20.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D21. LIQUIDATED DAMAGES

- D21.1 If the Contractor fails to achieve Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:
- (a) Substantial Performance – three thousand dollars (\$3000.00);
 - (b) Total Performance – one thousand five hundred dollars (\$1500.00).

D21.2 The amounts specified for liquidated damages in D21.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve stages, Substantial Performance or Total Performance by the days fixed herein for same.

D21.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D22. SCHEDULED MAINTENANCE

D22.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

- (a) Sodding maintenance as specified in CW 3510-R9;
- (b) Seeding maintenance as specified in CW 3520-R7, E9;
- (c) Reflective crack maintenance as specified in CW 3250-R7.

D22.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

CONTROL OF WORK

D23. JOB MEETINGS

D23.1 Regular weekly job meetings will be held at the site or location agreed to by the Contract Administrator and the Contractor. These meetings shall be attended by a minimum of one representative of the Contract Administrator and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

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

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

D24.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

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

D25.1 Further to B11.4, 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 B11.4.

MEASUREMENT AND PAYMENT

D26. PAYMENT

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

FORM H1: PERFORMANCE BOND
(See D11)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

BID OPPORTUNITY NO. 8-2016

2016 REGIONAL STREET RENEWAL PROGRAM – KEEWATIN STREET FROM NOTRE DAME AVENUE TO LOGAN AVENUE REHABILITATION – ASPHALT RESURFACING AND ASSOCIATED WORKS

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)

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

FORM J: SUBCONTRACTOR LIST
 (See D12)

2016 REGIONAL STREET RENEWAL PROGRAM – KEEWATIN STREET FROM NOTRE DAME
 AVENUE TO LOGAN AVENUE REHABILITATION – ASPHALT RESURFACING AND ASSOCIATED
 WORKS

<u>Portion of the Work</u>	<u>Name</u>	<u>Address</u>
SURFACE WORKS:		
<u>Supply of Materials:</u>		
Base Course and Sub-base Material		
Concrete		
Asphalt		
Topsoil, Salt Tolerant Seed and Sod		
MMA Marking		
<u>Installation and Placement:</u>		
Base Course and Sub-base Material		
Concrete		
Asphalt		
Topsoil, Salt Tolerant Seed and Sod		
MMA Marking		
UNDERGROUND WORKS:		
<u>Supply of Materials:</u>		
Pre-cast Concrete Catch Pits/Catch Basins/Risers		
Drainage Connection/Sewer Service Pipes		
Catch Pit/Catch Basin/Manhole Frames, Covers, Boxes and Lifter Rings		
Watermain Valves/Service Boxes		
<u>Installation and Placement:</u>		
Pre-cast Concrete Catch Pits/Catch Basins/Risers		
Drainage Connection/Sewer Service Pipes		
Catch Pit/Catch Basin/Manhole Frames, Covers, Boxes and Lifter Rings		
Watermain Valves/Service Boxes		

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
P-3472-01	Cover Sheet	A1
P-3472-01	Keewatin Street from Notre Dame Avenue to Logan Avenue – Asphalt Resurfacing and Associated Works from Sta. 1+00 to Sta. 2+50	A1
P-3472-02	Keewatin Street from Notre Dame Avenue to Logan Avenue – Asphalt Resurfacing and Associated Works from Sta. 2+50 to Sta. 4+00	A1
P-3472-03	Keewatin Street from Notre Dame Avenue to Logan Avenue – Asphalt Resurfacing and Associated Works from Sta. 4+00 to Sta. 5+50	A1
P-3472-04	Keewatin Street from Notre Dame Avenue to Logan Avenue – Asphalt Resurfacing and Associated Works from Sta. 5+50 to Sta. 7+00	A1
P-3472-05	Keewatin Street from Notre Dame Avenue to Logan Avenue – Asphalt Resurfacing and Associated Works from Sta. 7+00 to Sta. 7+30	A1
P-3472-06	Keewatin Street from Notre Dame Avenue to Logan Avenue – Asphalt Resurfacing and Associated Works	A1
P-3472-07	Traffic Staging – Stage I and Stage II Keewatin Street from Notre Dame Avenue to Logan Avenue – Asphalt Resurfacing and Associated Works Traffic Staging – Stage III and Stage IV	A1

E2. OFFICE FACILITIES

- E2.1 The Contractor shall supply office facilities meeting the following requirements:
- The field office shall be for the exclusive use of the Contract Administrator.
 - The building shall be conveniently located near the site of the Work.
 - The building shall have a minimum floor area of 25 square metres, a height of 2.4m with two windows for cross ventilation and a door entrance with a suitable lock.
 - 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, one drafting table, table 3m x 1.2m, one stool and a minimum of 8 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.

E2.2 The Contractor shall be responsible for all installation and removal costs, all operating costs, and the general maintenance of the office facilities.

E2.3 The office facilities will be provided from the date of the commencement of the Work to the date of Substantial Performance.

E3. PROTECTION OF EXISTING TREES

E3.1 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.

E3.2 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.

E3.3 No separate measurement or payment will be made for the protection of trees.

E3.4 Except as required in clause E3.1(c) and E3.1(e), Elm trees shall not be pruned at any time between April 1 and July 31.

E4. TRAFFIC CONTROL

E4.1 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.

E4.2 Notwithstanding E4.1, 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.

E4.2.1 An exception to E4.2 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.

E4.2.2 Further to E4.2, 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.

E5. TRAFFIC MANAGEMENT

E5.1 Further to clause 3.7 of CW 1130:

E5.1.1 Contractor to refer to the applicable Contract Drawings for traffic management – Traffic Staging – Stage I, Stage II, Stage III and Stage IV.

E5.1.2 All Stages:

- (a) Contractor responsible for maintaining all construction signage, barricades and traffic control within the area under construction, including advance warning construction signage at extremities of project area.
- (b) City of Winnipeg Traffic Services Branch to maintain temporary traffic cross-overs at William Avenue West and Alexander Avenue, and delineation of northbound and southbound traffic for Stage II and Stage III, including advance warning construction signage. Contractor responsible for general construction signage and barricades between temporary traffic cross-overs within the area under construction.
- (c) Alterations to the staging shown herein must be presented and approved by the Contract Administrator at least 48 hours prior to implementing change.
- (d) Westbound/Eastbound traffic at Logan Avenue and Keewatin Street intersection must be maintained during construction to allow for one lane of traffic in each direction to go through and to turn left. When no work is being performed in the intersection and providing it is safe for vehicles, west and east lane closures in the intersection will not be permitted.

- (e) Westbound/Eastbound traffic at Notre Dame Avenue and Keewatin Street intersection must be maintained during construction to allow for one lane of traffic in the westbound direction and one lane of traffic in the eastbound direction to go through and to turn left. When no work is being performed in the intersection and providing it is safe for vehicles, west and east lane closures in the intersection will not be permitted.
- (f) Intersecting street and private approach access shall be maintained at all times.
- (g) Closures of side streets not permitted unless approved by the Contract Administrator.
- (h) Pedestrian and ambulance/emergency vehicle access must be maintained at all times.
- (i) 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 residence or business and the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 48 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.
- (j) If lane closures are required at the Keewatin Street/Logan Avenue intersection, the Contract Administrator is to coordinate traffic signing with the Contractor of Bid Opportunity No. 52-2016 – 2016 Watermain Renewal Contract No. 11 and the City of Winnipeg Traffic Services Branch to ensure seamless transition zones of traffic signing as vehicular traffic drives through each construction zone.
- (k) If lane closures are required at the Keewatin Street/Logan Avenue intersection, the Contract Administrator is to coordinate traffic signing with the Contractor of Bid Opportunity No. 12-2016 – 2016 Regional Street Renewal Program and the City of Winnipeg Traffic Services Branch to ensure seamless transition zones of traffic signing as vehicular traffic drives through each construction zone.
- (l) Winnipeg Transit service shall be maintained at all times.

E5.1.3

Stage I:

- (a) Maintain one lane of traffic northbound and one lane of traffic southbound. (Lane-at-a-time construction)
- (b) Maintain one lane of traffic northbound and one lane of traffic southbound in the vicinity of William Avenue West and Alexander Avenue for construction of temporary traffic cross-overs.
- (c) Lane-at-a-time construction required at Notre Dame Avenue (signalized) intersection, Ross Avenue West intersection and Alexander Avenue intersection.

E5.1.4

Stage II:

- (a) Maintain one lane traffic northbound and one lane of traffic southbound in the southbound lanes of Keewatin Street from William Avenue West to Alexander Avenue.
- (b) Keewatin Street northbound traffic to be diverted to the southbound median lane of Keewatin Street at temporary traffic cross-over at William Avenue West.
- (c) Keewatin Street northbound traffic to be diverted back to the northbound median lane of Keewatin Street at temporary traffic cross-over at Alexander Avenue.
- (d) City of Winnipeg Traffic Services Branch responsible for temporary traffic cross-over area signage, and delineation of northbound and southbound traffic in the southbound lanes of Keewatin Street, and any regulatory signage.
- (e) Left turns are prohibited in the southbound and northbound directions of Keewatin Street at William Avenue West, Elgin Avenue West, Ross Avenue West, Pacific Avenue West and Alexander Avenue (except City of Winnipeg Transit Buses will be allowed left turns in the southbound direction).

- (f) William Avenue West and Alexander Avenue cross streets at temporary traffic cross-overs operate as right in right out only.

E5.1.5 Stage III:

- (a) Maintain one lane of traffic southbound and one lane of traffic northbound in the northbound lanes of Keewatin Street from Alexander Avenue to William Avenue West.
- (b) Keewatin Street southbound traffic to be diverted to the northbound median lane of Keewatin Street at temporary traffic cross-over at Alexander Avenue.
- (c) Keewatin Street southbound traffic to be diverted back to the southbound median lane of Keewatin Street at temporary traffic cross-over at William Avenue West.
- (d) City of Winnipeg Traffic Services Branch responsible for temporary traffic cross-over area signage, and delineation of northbound and southbound traffic in the northbound lanes of Keewatin Street, and any regulatory signage.
- (e) Left turns are prohibited in the southbound and northbound directions of Keewatin Street at Alexander Avenue, Pacific Avenue West, Roy Avenue, Ross Avenue West, Elgin Avenue West and William Avenue West (except City of Winnipeg Transit Buses will be allowed left turns in the southbound direction).
- (f) Alexander Avenue and William Avenue West cross streets at temporary traffic cross-overs operate as right in right out only.

E5.1.6 Stage IV:

- (a) Maintain one lane of traffic northbound in the northbound gutter lane of Keewatin Street at William Avenue West and Alexander Avenue temporary traffic cross-overs.
- (b) Maintain one lane of traffic southbound in the southbound gutter lane of Keewatin Street at Alexander Avenue and William Avenue West temporary traffic cross-overs.

E6. WATER OBTAINED FROM THE CITY

- E6.1 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.

E7. SURFACE RESTORATIONS

- E7.1 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.

E8. INFRASTRUCTURE SIGNS

- E8.1 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.

E9. SALT TOLERANT GRASS SEEDING

DESCRIPTION

- E9.1 Further to CW 3520 and CW3540, this specification shall cover sub-grade preparation and the supply and placement of Salt Tolerant Grass Seed.

MATERIALS

- E9.2 Salt Tolerant Grass Seed

- E9.2.1 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

- E9.3 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

- E9.4 Preparation of Existing Grade

- E9.4.1 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.

- E9.4.2 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).

- E9.5 Salt Tolerant Grass Seeding

- E9.5.1 Salt Tolerant Grass Seed shall be sown at a rate of 2.2 kilograms per 100 square meters.

MEASUREMENT AND PAYMENT

- E9.6 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.

E10. CONCRETE CURB FOR MONOLITHIC CONCRETE CURB AND SIDEWALK

- E10.1 Further to CW 3240, the Contractor shall construct modified barrier curb on side-streets, alleys and private approach radii in conjunction with monolithic curb and sidewalk.

- E10.2 All costs associated with construction of modified barrier curb at locations of "Construction of Monolithic Concrete Curb and Sidewalk" are considered incidental to the "Construction of Monolithic Concrete Curb and Sidewalk" and no additional payment will be made.

E11. SUPPLY OF CATCH PITS

DESCRIPTION

E11.1 This specification covers the supply of catch pits in the northbound gutter lane of Keewatin Street.

MATERIALS

E11.2 Further to CW 2130 Clause 2.7.1 and Standard Detail SD-023, the supplied catch pits shall be a 610 mm long pre-cast concrete catch pit section that meets CSA A257.4 and ASTM Standard C 76 Class II and C 478 (circular sections).

MATERIALS

E11.3 Construction methods as per Clause 3.8 of CW 2130.

E11.4 MEASUREMENT AND PAYMENT

E11.5 Measurement and payment as per Clause 4.4 of CW 2130.

E12. SUPPLY AND INSTALLATION OF MMA MARKING WITH ANTI-SKID

DESCRIPTION

E12.1 This specification covers the supply and installation of Methyl Methacrylate Area (MMA) Marking with Anti-Skid in concrete sidewalk for Keewatin Street from Notre Dame Avenue to Logan Avenue.

GENERAL

E12.2 Drawings and Manuals

- (a) Contract Drawings; P-3472-01 to P-3472-05 – Keewatin Street from Notre Dame Avenue to Logan Avenue
- (b) Attached Manual; Appendix 'B' - Application Instructions – MMAX Area Markings
- (c) Attached Manual; Appendix 'C' - MMAX Area Markings Specification – Methyl Methacrylate Area Marking with Anti-Skid

E12.3 Material

E12.3.1 CycleGrip® MMAX kit – includes CycleGrip® MMAX Resin (**black**), CycleGrip® MMAX Aggregate and Catalyst

E12.4 Source

E12.4.1 ENNIS-FLINT

Available from:

ENNIS-FLINT

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

E12.5 Preparation and Installation

E12.5.1 Where the MMA Markings is to be placed, the surface of the concrete sidewalk must be texture grooved to a width of 0.3m and a depth of 1.25mm(min) to 2.5mm(max).

Note: The use of grooving equipment with gang stacked diamond cutting blades is required for texturing concrete sidewalk surfaces.

- E12.5.2 Prepare the concrete sidewalk surface in accordance with Manufacturer's application instructions and MMAX Area Markings specification (attached).

MEASUREMENT AND PAYMENT

- E12.6 Supply and installation of MMA marking with anti-skid will be measured on a length basis and paid for at the Contract Unit Price per metre for "Supply and Installation of MMA Marking with Anti-Skid". The length to be paid for will be the total number of metres of MMA marking with anti-skid supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.
- E12.7 Grooving and preparation of concrete sidewalk for MMA marking with anti-skid shall be included in the cost for "Supply and Installation of MMA Marking with Anti-Skid" and no separate measurement and payment will be made.

APPENDIX 'A' - GEOTECHNICAL REPORT

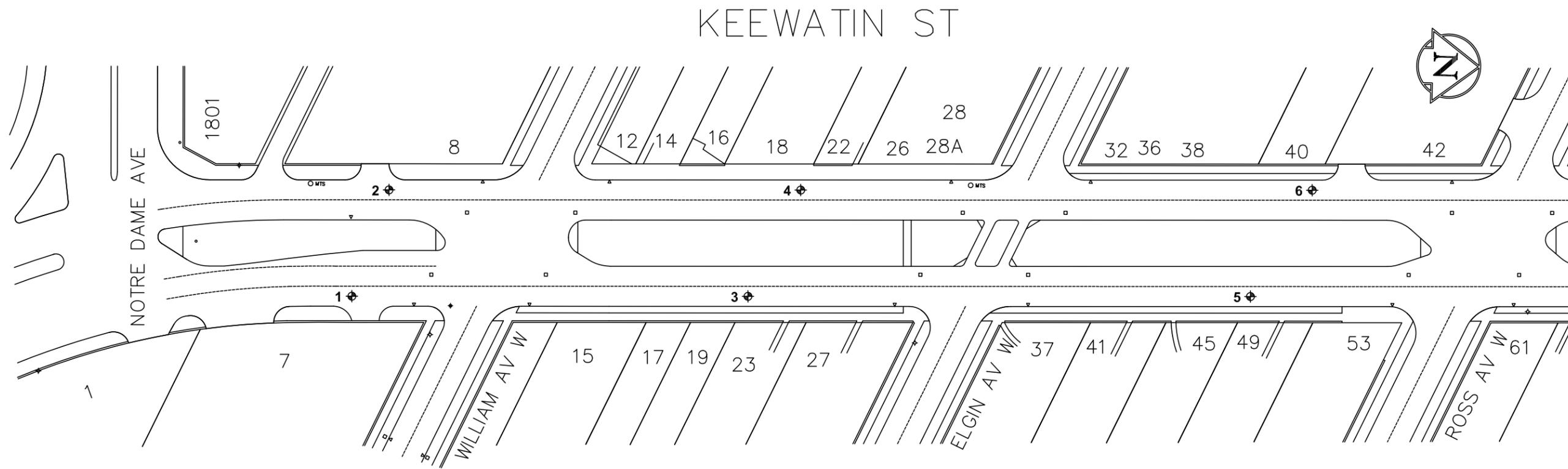
KEEWATIN STREET PAVEMENT STRUCTURE GEOTECHNICAL INVESTIGATION REPORT

The geotechnical report is provided to aid in the Contractor's evaluation of the existing pavement structure. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in pavement structure may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities. The nature and extent of variations may not become evident until construction commences.

**TABLE 1
PAVEMENT CORE SUMMARY
KEEWATIN STREET, NOTRE DAME AVENUE TO LOGAN AVENUE**

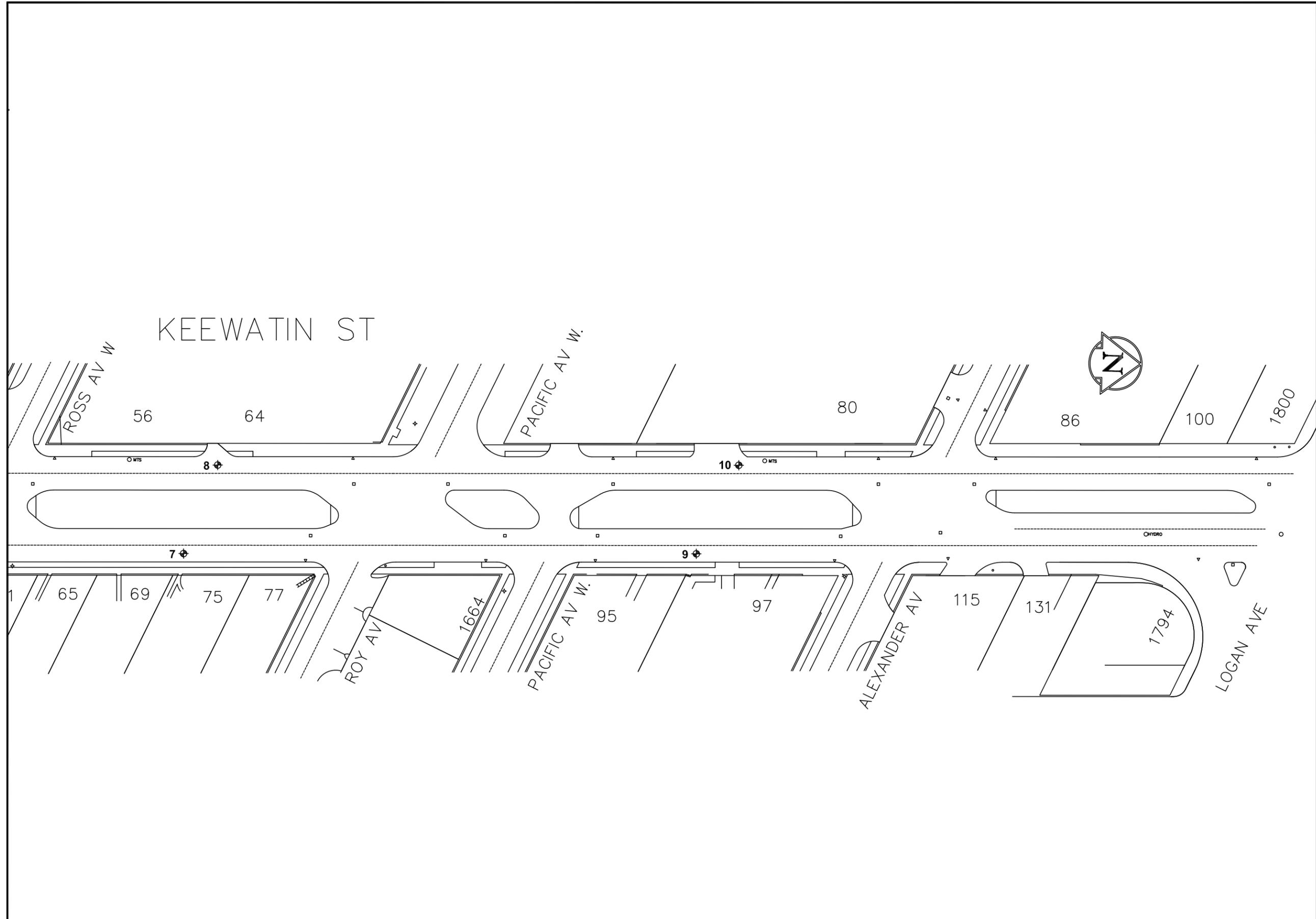
Core No.	Core Location	Pavement Structure Thickness (mm)			Comments
		Asphalt	Concrete	Total	
1	Keewatin Street Centreline of northbound curb lane 26 m north of Notre Dame Avenue	60	165	225	<ul style="list-style-type: none"> • sound asphalt pavement • asphalt pavement not bonded to underlying concrete pavement • Sound concrete pavement • Granular base and clay found below pavement
2	Keewatin Street Centreline of southbound curb lane 31 m north of Notre Dame Avenue	45	220	265	<ul style="list-style-type: none"> • sound asphalt pavement • asphalt pavement not bonded to underlying concrete pavement • Sound concrete pavement • Granular base found below pavement
3	Keewatin Street Centreline of northbound curb lane On property line of lots 19 & 23	65	230	295	<ul style="list-style-type: none"> • sound asphalt pavement • asphalt pavement not bonded to underlying concrete pavement • Sound concrete pavement • Granular base and clay found below pavement
4	Keewatin Street Centreline of southbound curb lane 1 m south from property line of lots 18 & 22	45	200	245	<ul style="list-style-type: none"> • sound asphalt pavement • asphalt pavement not bonded to underlying concrete pavement • Sound concrete pavement • Granular base found below pavement
5	Keewatin Street Centreline of northbound curb lane On property line of lots 45 & 49	80	230	310	<ul style="list-style-type: none"> • sound asphalt pavement • asphalt pavement bonded to underlying concrete pavement • Sound concrete pavement • Clay subgrade found below pavement

Core No.	Core Location	Pavement Structure Thickness (mm)			Comments
		Asphalt	Concrete	Total	
6	Keewatin Street Centreline of southbound curb lane On property line of lots 40 & 42	50	205	255	<ul style="list-style-type: none"> • sound asphalt pavement • asphalt pavement not bonded to underlying concrete pavement • Sound concrete pavement • Clay subgrade found below pavement
7	Keewatin Street Centreline of northbound curb lane On property line of lots 69 & 75	80	210	290	<ul style="list-style-type: none"> • sound asphalt pavement • asphalt pavement not bonded to underlying concrete pavement • Sound concrete pavement • Granular base found below pavement
8	Keewatin Street Centreline of southbound curb lane On property line of lots 56 & 64	50	185	235	<ul style="list-style-type: none"> • sound asphalt pavement • asphalt pavement not bonded to underlying concrete pavement • Sound concrete pavement • Clay subgrade found below pavement
9	Keewatin Street Centreline of northbound curb lane On property line of lots 95 & 97	55	245	300	<ul style="list-style-type: none"> • sound asphalt pavement • asphalt pavement bonded to underlying concrete pavement • Sound concrete pavement • Granular base and clay found below pavement
10	Keewatin Street Centreline of southbound curb lane 11 m north from property line of lots 95 & 97	60	215	275	<ul style="list-style-type: none"> • sound asphalt pavement • asphalt pavement bonded to underlying concrete pavement • Sound concrete pavement • Granular base and clay found below pavement



TEST HOLE 
ALL DIMENSIONS IN METERS

 <p>THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION TECHNOLOGY SERVICES BRANCH 106 - 1155 PACIFIC AVE</p>	DATE: 18-02-2016	DRAWING NO.: 1	<p>2016 REGIONAL STREET RENEWAL PROGRAM</p> <p>KEEWATIN STREET Notre Dame Avenue to Logan Avenue TESTHOLE LOCATION SKETCH</p>
	DRAWN BY: AP	SCALE: N.T.S.	



TEST HOLE 
 ALL DIMENSIONS IN METERS

 <p>THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION TECHNOLOGY SERVICES BRANCH 106 - 1155 PACIFIC AVE</p>	DATE: 18-02-2016	DRAWING NO.: 2	2016 REGIONAL STREET RENEWAL PROGRAM KEEWATIN STREET Notre Dame Avenue to Logan Avenue TESTHOLE LOCATION SKETCH
	DRAWN BY: AP	SCALE: N.T.S.	



Core no. 1



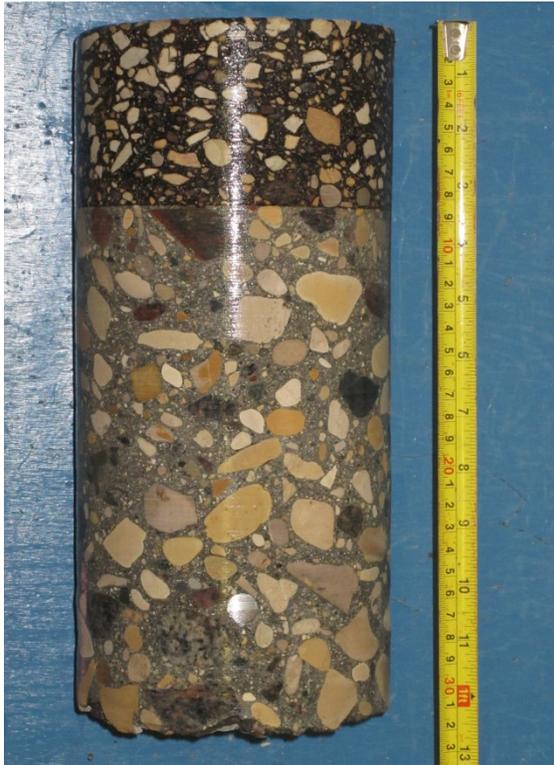
Core no. 2



Core no. 3



Core no. 4



Core no. 5



Core no. 6



Core no. 7



Core no. 8



Core no. 9



Core no. 10

APPENDIX 'B' – 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 'C' – MMAX AREA MARKINGS SPECIFICATION FOR METHYL
METHACRYLATE AREA MARKING WITH ANTI-SKID**

MMAX AREA MARKINGS SPECIFICATION

Methyl Methacrylate Area Marking with Anti-Skid

1. **USE:** 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.
 - 1.1. MMAX AREA MARKINGS are only available through Ennis-Flint, or an authorized distributor of Ennis-Flint.
 - 1.2. MMAX AREA MARKINGS are available in a variety of colors.
2. **MATERIAL:** Materials used to create MMAX AREA MARKINGS shall consist of MMAX AREA MARKING Pre-pigmented Resin, MMAX AREA MARKING Hardwearing Aggregate and Catalyst.

2.1. MMAX AREA MARKING Resin.

2.1.1. MMAX AREA MARKING Resins shall have the following properties:

Density	12.8+/- 0.35	Lbs/Gal
Tensile	>2000 psi	ASTM D638
Elongation	>70%	ASTM D638
Flash Point	>50°F / 10°C	ASTN D1310

- 2.2. MMAX AREA MARKING 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 mixed pail of resin and aggregate.

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 MMAX AREA MARKING 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.
- 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 MMAX AREA MARKING's and the 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).

MMAX AREA MARKINGS SPECIFICATION

Methyl Methacrylate Area Marking with Anti-Skid

4.3.1. Materials Mixing Guide:

MMAX AREA MARKING Resin:	2 gallons <i>(7.6 liters)</i>
MMAX AREA MARKING Aggregate:	25.7 lbs <i>(11.7 kg)</i>
CATALYST (temperature dependent):	
> 90°F / 32°C	3 fl. oz. <i>(.09 liters)</i>
70-90°F / 18-32°C	6 fl. oz. <i>(.185 liters)</i>
< 70°F / 18°C	12 fl. oz. <i>(.365 liters)</i>

4.4. Installation. MMAX AREA MARKING’s shall immediately be poured onto the 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 MMAX AREA MARKINGS 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. MMAX AREA MARKING’s 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. MMAX AREA MARKING’s 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. MMAX AREA MARKING Resin must be supplied in compliant metal pails that have a UN1A2Y1.9/100 rating.

6.2. MMAX AREA MARKING Aggregate must be supplied in 25.5 +/- 0.5 lbs. (11.7 +/- .23 kg) pre-packaged bags or pails.

7. TECHNICAL SERVICES: Shall be available from the manufacturer upon request.