



**Canada-Manitoba
Infrastructure Program**

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THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 524-2010

**2010 ACTIVE TRANSPORTATION / INFRASTRUCTURE STIMULUS PROGRAM
MULTI USE PATHWAYS – TRANSCONA TRAILS PHASES IA, IB & II**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

- B1.1 2010 Active Transportation / Infrastructure Stimulus Program Multi Use Pathways – Transcona Trails Phases IA, IB & II

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, July 27, 2010.
- B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.
- B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. SITE INVESTIGATION

- B3.1 The Bidder is strongly advised to attend a site investigation on July 20, 2010 at 1:30 p.m. – 3:00 p.m. to review current site conditions and proposed construction procedures between Regent Ave. and Ravelston Ave. The meeting will take place at the intersection of Ravelston Ave. and Bradley St.
- B3.2 Further to C3.1, the Bidder may view the Site without making an appointment.

B4. ENQUIRIES

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

B5. 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 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 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, only to the Bidder who requested approval of the substitute.

B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he 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 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 B15.

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.

B6.10 Notwithstanding B6.2 to B6.9, in accordance with B7.6, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B15.1(a).

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 B15.1(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 own name, his 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 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 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 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 B15.4.3, 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 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).
- B9.5 Form B: Prices is organized into Parts: Transcona Trail Phase IA, Transcona Phase IB and Transcona Phase II. Bidders shall provide a total price for each Part and, on the summary sheet, a Total Bid Price consisting of the sum of prices for Parts: Transcona Trail Phase IA, Transcona Trail Phase IB and Transcona Trail Phase II.

B10. QUALIFICATION

B10.1 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.

B10.2 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>

B10.3 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);

B10.4 Further to B10.3(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 valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
- (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>)

B10.5 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.

B10.6 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.

B11. BID SECURITY

B11.1 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.

- B11.1.1 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.
- B11.1.2 All signatures on bid securities shall be original.
- B11.1.3 The Bidder shall sign the Bid Bond.
- B11.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.
- B11.2 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.
- B11.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B11.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.
- B11.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.
- B11.3 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.

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

- B12.1 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.
 - B12.1.1 Bidders or their representatives may attend.
 - B12.1.2 Bids determined by the Manager of Materials, or his designate, to not include the bid security specified in B11 will not be read out.
- B12.2 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>
- B12.3 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>
- B12.4 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.

B13. IRREVOCABLE BID

- B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B13.2 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.

B14. WITHDRAWAL OF BIDS

- B14.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B14.1.1 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.
- B14.1.2 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.
- B14.1.3 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 B14.1.3(b), declare the Bid withdrawn.
- B14.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B13.2 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.

B15. EVALUATION OF BIDS

- B15.1 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 B10 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B15.2 Further to B15.1(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.
- B15.2.1 Any bid with an apparent imbalance between the unit prices in Parts: Transcona Trail Phase IA, Transcona Trail Phase IB and Transcona Trail Phase II may be determined to be non-responsive and rejected by the Award Authority in its sole discretion, acting reasonably.

- B15.3 Further to B15.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.
- B15.4 Further to B15.1(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.
- B15.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.
- B15.4.2 Further to B15.1(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.
- B15.4.3 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.
- B15.5 The Contract may be awarded on the basis of:
- (a) Items A.18i)a), B.17i)a) and C.15i)a) shown on Form B: Prices – Type IA Asphaltic Concrete Pavement as pathway paving material; or
 - (b) Items A.18i)b), B.17i)b) and C.15i)b) shown on Form B: Prices – RAS (Recycled Asphalt Shingle) Modified Type IA Asphaltic Concrete Pavement as pathway paving material;
- as identified on Form B: Prices. The subject alternative will be evaluated in accordance with the specified evaluation criteria.
- B15.5.1 Notwithstanding B9.1, the Bidder shall bid on one or the other of the two Asphaltic Concrete alternatives. Should a Bidder, for whatever reason, provide prices for both alternatives the City shall include only the lower priced alternative in its evaluation of that bid.

B16. AWARD OF CONTRACT

- B16.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B16.2 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.
- B16.2.1 Without limiting the generality of B16.2, 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.
- B16.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B15.

- B16.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.
- B16.4 As noted in D2 and identified in Form B: Prices, the Work of Transcona Trail Phase IA will be contingent upon the resolution of property issues. If not resolved the City shall have the right to eliminate all or any portion of Transcona Trail Phase IA in accordance with D2.

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 two parts:

- (a) Transcona Trail Phase IA
- (b) Transcona Trail Phase IB and Transcona Trail Phase II

Transcona Trail Phase IA

D2.2 Work described under section B.16.4 shall consist of:

- (a) Construction of Asphalt Multi-Use Pathways:
Transcona Trail Phase IA
 - (i) Multi-Use Pathway from Regent Avenue (East of Peguis Street at Regent Avenue) along the north edge of the Central Manitoba Railway (CEMR) property to Ravelston Avenue
 - (ii) Asphaltic pavement roadway works at the CEMR rail crossing with Ravelston Avenue.

Transcona Trail Phases IB and Transcona Trail Phase II

D2.3 The balance of the work shall consist of:

- (a) Transcona Trail Phase IB Type of Work
 - (i) Multi-Use Pathway from the east side of the CEMR rail crossing at Ravelston Avenue along Manitoba Hydro Right-of-Way to Plessis Road. (230 m north of Kildare Avenue.
 - (ii) Construction of asphalt and gravel Multi-Use Pathways in the Rotary Heritage Park.
 - (iii) Multi-Use Pathway from Plessis Road (230 m north of Kildare Avenue) along the Manitoba Hydro Right-of-Way to Hoka Street (45 m north of McMeans Avenue.
 - (iv) Multi-Use Pathway from Hoka Street (45 m north of McMeans Avenue) along the north edge of existing gravel lane to north of the private property in the northwest corner of the intersection of Larch Avenue at Winona Street.
 - (v) Multi-Use Pathway from the north end of Winona Street along easement on private property to the intersection of Day Street and Wabasha Street.
- (b) Construction of Asphalt Multi-Use Pathways:
Transcona Trail Phase II
 - (i) Multi-Use Pathway from the intersection of Day Street at Wabasha Street along the former rail bed to Redonda Street (60 m north of Paulley Drive)
 - (ii) Multi-Use Pathway from Redonda Street (60 m north of Paulley Drive) along existing trail to north of intersection of Fairview Drive and Millbrook Road.
 - (iii) Multi-Use Pathway from north of intersection of Fairview Drive to Millbrook Road along existing trail to 50 m west of the Perimeter Highway.

D2.4 The City currently does not have approval to begin works for Transcona Trail Phases IA, but is anticipating receiving approval in late July. Transcona Trail Phases IA is contingent upon the City receiving approval to begin works in the area.

- D2.4.1 Further to C7.1, if notice of approval is not received, the City shall have the right to eliminate all or any portion of Transcona Trail Phases IA, and the Contract Price will be reduced accordingly.
- D2.4.2 Further to C7.5, C7.5.1, and C7.6, a reduction in the Contract Price pursuant to D2.4.1 shall not be considered in calculating the aggregate reduction in the Contract Price for purposes of C7.5.
- D2.5 If all or any portion of Transcona Trail Phases IA is eliminated pursuant to D2.4.1, the time periods stipulated in D17 for Substantial Performance of the Work and in D18 for Total Performance of the Work will be reduced proportionally by the Contract Administrator acting reasonably.

D3. CONTRACT ADMINISTRATOR

- D3.1 The Contract Administrator is:

W. Joe Funk, P.Eng.
Manager, Transportation Group
400-386 Broadway
Winnipeg, MB R3C 4M8

Telephone No. (204) 956-0980
Facsimile No. (204) 957-5389

- 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.

D4. CONTRACTOR'S SUPERVISOR

- D4.1 At the pre-construction meeting, W. Joe Funk, P. Eng., will identify his 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. NOTICES

- D5.1 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.
- D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3, D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.
- D5.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:
- The City of Winnipeg
Chief Financial Officer
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: (204) 949-1174

- D5.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:

The City of Winnipeg
Internal Services Department
Legal Services Division
Attn: City Solicitor
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

D6. FURNISHING OF DOCUMENTS

- D6.1 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 at cost.

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

- D7.1 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.

D8. SAFE WORK PLAN

- D8.1 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.
- D8.2 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>

D9. INSURANCE

- D9.1 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) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
 - (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.
- D9.2 Deductibles shall be borne by the Contractor.

D9.3 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.

D9.4 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.

D10. PERFORMANCE SECURITY

D10.1 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.

D10.1.1 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.

D10.2 If the bid security provided in his Bid was not a certified cheque or draft pursuant to B11.1(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.

D11. SUBCONTRACTOR LIST

D11.1 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.

D12. DETAILED WORK SCHEDULE

D12.1 The Contractor shall provide the Contract Administrator with a detailed work schedule (Form L: 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.

D12.2 The detailed work schedule shall consist of a Gantt Chart for the Work acceptable to the Contract Administrator.

D12.3 Further to D12.2, 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

D13. COMMENCEMENT

D13.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.

D13.2 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 D7;
 - (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 D8;
 - (v) evidence of the insurance specified in D9;
 - (vi) the performance security specified in D10;
 - (vii) the subcontractor list specified in D11;
 - (viii) the detailed work schedule specified in D12; and
- (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.

D13.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.

D13.4 The City intends to award this Contract by August 9, 2010

D13.4.1 If the actual date of award is later than the intended date, the dates specified for Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D14. RESTRICTED WORK HOURS

D14.1 Further to clause 3.10 of CW 1130, the Contractor shall require written permission forty-eight (48) hours in advance from the Contract Administrator for any work to be performed between 2000 hours and 0700 hours, or on Saturdays, Sundays, Statutory Holidays and or Civic Holidays.

D15. WORK BY OTHERS

D15.1 Work by others on or near the Site may include but not necessarily be limited to:

- (a) Central Manitoba Railway – relocating/installing crossing signals at Ravelston Ave.;
- (b) Manitoba Hydro – Relocating wooden hydro poles and guy wires at various locations;
- (c) MTS Allstream – possible lowering of fibre optic facilities at various locations;
- (d) Separate Contractor(s) - underground and surface works at Rotary Heritage Park.

D16. CRITICAL STAGES

- D16.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) Complete ditch and subgrade construction along Transcona Trail IA (Regent Avenue to Ravelston Avenue) within fourteen (14) Calendar Days of the Commencement stated in D13.
- D16.2 When the Contractor considers the Work associated with completion of ditching and sub grade in the above noted area to be completed, he shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Completion. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D16.3 The date on which the completion of ditching and sub grade Work in the above noted areas has been accepted by the Contract Administrator as being completed to the requirements of the Contract is the date on which completion of completion of sub grade and ditching in the above noted area has been achieved.

D17. SUBSTANTIAL PERFORMANCE

- D17.1 The Contractor shall achieve Substantial Performance by October 15, 2010.
- D17.2 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.
- D17.3 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.

D18. TOTAL PERFORMANCE

- D18.1 The Contractor shall achieve Total Performance by October 22, 2010.
- D18.2 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.
- D18.3 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.

D19. LIQUIDATED DAMAGES

- D19.1 If the Contractor fails to achieve Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Calendar Day for each and every Calendar Day following the days fixed herein for same during which such failure continues:
- (a) Critical Stage – One Thousand dollars (\$1,000);
 - (b) Substantial Performance – One Thousand dollars (\$1,000).

(c) Total Performance – One Thousand Five Hundred Dollars (\$1,500).

D19.2 The amounts specified for liquidated damages in D19.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve critical stages, Substantial Performance or Total Performance by the days fixed herein for same.

D19.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D20. SCHEDULED MAINTENANCE

D20.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

- (a) Reflective crack maintenance as specified in CW 3250-R7 Joint and Crack Maintenance;
- (b) Maintenance of Sodded Area as specified in CW 3510-R9 Sodding;
- (c) Maintenance of Seeded Area as specified in CW 3520-R7.

D20.2 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

D21. JOB MEETINGS

D21.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

D21.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D22. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D22.1 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).

MEASUREMENT AND PAYMENT

D23. PAYMENT

D23.1 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 D10)

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. 524-2010

2010 Active Transportation / Infrastructure Stimulus Program Multi Use Pathways – Transcona Trails
Phases IA, IB & II

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

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

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

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

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

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

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)**
(See D10)

(Date)

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

RE: PERFORMANCE SECURITY – BID OPPORTUNITY NO. 524-2010

2010 Active Transportation / Infrastructure Stimulus Program Multi Use Pathways – Transcona
Trails Phases IA, IB & II

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

(Name of Contractor)

(Address of Contractor)

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

Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

This credit is subject to the Uniform Customs and Practice for Documentary Credit (1993 Revision), International Chamber of Commerce Publication Number 500.

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
	Cover Sheet	
10000701-DWG-C1001	Regent Avenue to 200m East of Regent Avenue	594mm x 841mm
10000701-DWG-C1002	200m East of Regent Avenue to STA 1+500	594mm x 841mm
10000701-DWG-C1003	From STA 1+500 to 276m West of Owen Street	594mm x 841mm
10000701-DWG-C1004	276m West of Owen Street to 8m East of Owen Street	594mm x 841mm
10000701-DWG-C1005	8m East of Owen Street to 80m West of Ravelston Avenue	594mm x 841mm
10000701-DWG-C1006	80m West of Ravelston Avenue to Ravelston Avenue	594mm x 841mm
10000701-DWG-C1007	Ravelston Avenue West to 208m East of Ravelston Avenue W	594mm x 841mm
10000701-DWG-C1008	208m East of Ravelston Avenue W to 160m West of Plessis Road	594mm x 841mm
10000701-DWG-C1009	160m West of Plessis Road to Plessis Road	594mm x 841mm
10000701-DWG-C1010	Plessis Road to 250m East of Plessis Road	594mm x 841mm
10000701-DWG-C1011	250m East of Plessis Road to 200m West of Hoka Street	594mm x 841mm
10000701-DWG-C1012	200m West of Hoka Street to Hoka Street	594mm x 841mm
10000701-DWG-C1013	Hoka Street to 210m East of McMeans Avenue W	594mm x 841mm
10000701-DWG-C1014	210m East of McMeans Avenue W to 148m West of Winona Street	594mm x 841mm
10000701-DWG-C1015	148m West of Winona Street to 130m East of Winona Street	594mm x 841mm
10000701-DWG-C1016	130m east of Winona Street to Day Street	594mm x 841mm
10000701-DWG-C1017	From Day Street to 71m West of Wabasha Street	594mm x 841mm
10000701-DWG-C1018	71m West of Wabasha Street to 168m East of Wabasha Street	594mm x 841mm
10000701-DWG-C1019	168m East of Wabasha Street to 194m West of Wayoata Street	594mm x 841mm
10000701-DWG-C1020	194m West of Wayoata Street to 56m East of Wayoata Street	594mm x 841mm
10000701-DWG-C1021	56m East of Wayoata Street to Station 8+310	594mm x 841mm
10000701-DWG-C1022	Station 8+310 to 47m West of Redonda Street	594mm x 841mm
10000701-DWG-C1023	47m West of Redonda Street to 200m East of Redonda Street	594mm x 841mm
10000701-DWG-C1024	200m East of Redonda Street to 130m East of Fairview Drive	594mm x 841mm
10000701-DWG-C1025	130m East of Fairview Drive to Station 9+400	594mm x 841mm
10000701-DWG-C1026	Station 9+400 to 23m West of Hewitson Road	594mm x 841mm
10000701-DWG-C1027	23m West of Hewitson Road to Perimeter Highway	594mm x 841mm

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
10000701-DWG-C1028	Rotary Heritage Park Pathway from STA 0+100 to STA 0+220	594mm x 841mm
10000701-DWG-C1029	Rotary Heritage Park Pathway from STA 0+220 to Kildare Avenue West	594mm x 841mm
10000701-DWG-C1030	Pathway Details	594mm x 841mm
10000701-DWG-S1001	Typical Fence Post Details	594mm x 841mm

E2. OFFICE FACILITIES

E2.1 The Contractor shall supply office facilities meeting the following requirements:

- (a) The field office shall be for the exclusive use of the Contract Administrator.
- (b) The building shall be conveniently located near the site of the Work.
- (c) The building shall have a minimum floor area of 25 square metres, a height of 2.4m with two windows for cross ventilation and a door entrance with a suitable lock.
- (d) The building shall be suitable for all weather use. It shall be equipped with an electric heater and air conditioner so that the room temperature can be maintained between either 16-18°C or 24-25°C.
- (e) The building shall be adequately lighted with fluorescent fixtures and have a minimum of three wall outlets.
- (f) The building shall be furnished with one table 3m X 1.2m 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 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 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 and 3.7 of CW 1130:

- (a) Where directed, the Contractor shall construct and maintain temporary asphalt ramps to alleviate vertical pavement obstructions such as manholes and 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 in Work Areas on City Streets, the Contractor ("Agency" in the manual) shall make arrangements with the Traffic Services Branch of the City of Winnipeg to place all temporary regulatory signs. The Contractor shall bear all costs associated with the placement of temporary traffic control devices by the Traffic Services Branch of the City of Winnipeg in connection with the works undertaken by the Contractor.

E5. TRAFFIC MANAGEMENT

E5.1 Further to clause 3.7 of CW 1130:

E5.1.1 The Contractor shall schedule construction activities to meet the following:

- (a) The Contractor shall maintain at least one lane of traffic in each direction during any construction activities on Plessis Road.
- (b) The Contractor shall maintain at least one lane of traffic during any construction activities on Hoka Street, Day Street and Redonda Street.

E5.1.2 Pedestrian and ambulance/emergency vehicle access must be maintained at all times.

E6. WATER USED BY CONTRACTOR

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. PROTECTION OF FIBRE OPTIC CABLES

E7.1 Further to CW 1120 – Existing Services, Utilities and Structures, the Contractor shall verify the location of fibre optic cables by exposing the cables using soft excavation methods (hydrovac or hand digging). The number of soft excavation locations required to verify the location of the fibre optic cables will be at the Contractors Discretion. All soft dig excavations are to be done in the presence of the Contract Administrator.

E7.2 No separate measurement or payment will be made for soft dig excavations for verifying locations of fibre optic cables. All cost associated with this work will be considered incidental to excavation.

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. RELOCATING EXISTING TREES, BENCHES AND PICNIC TABLES

E9.1 The Contractor will be directed to perform some minor relocation of small trees, benches and picnic tables to make way for the pathways. The trees to be relocated are primarily along the existing Transcona Trail, are generally less than 100mm diameter and are to be relocated in the immediate vicinity of their current locations. Similarly, the benches and picnic tables are to be relocated within the immediate vicinity of their current location.

E10. REMOVAL OF EXISTING WOODEN BOLLARDS

E10.1 The Contractor shall remove existing wooden bollards as indicated on the drawings and store them at the City of Winnipeg's Yard at 849 Ravelston Ave. W. unless otherwise directed by the Contract Administrator. The Contractor shall provide 48 hrs notice to the Contract Administrator so suitable receipt and storage arrangements can be made with City staff.

E11. REMOVAL, RELOCATION AND INSTALLATION OF CHAIN LINK FENCE

E11.1 The Contractor shall relocate the existing 1.2m – 1.8 m high chain link fence between Regent Ave. and Ravelston Ave. and remove and dispose of it in other areas as indicated on the drawings. It is anticipated the fence relocations will generally be within 5.0 -10.0 m of the existing location.

The Contractor shall install new 1.8 m high chain link fence at locations indicated on the drawings. The Contractor shall install lockable 3.0 m wide double access gates approximately every 250 m along the CMER chain link fence in Phase IA and install one 1.8m wide lockable gate in Phase IB in the vicinity of Larche Avenue.

E12. PATHWAY CONSTRUCTION (DITCHING AND CONSTRUCTION ACCESS)

E12.1 Preliminary Ditch Construction - Transcona Trail Phase IA - The Contractor is advised that Transcona Trail Phase IA is situated on low lying and wet ground within the CEMR rail property along most of its entire length. It is the intention of the design that the Contractor begin this section of the project by first re-establishing a small swale ditch between the proposed pathway subgrade and the rail embankment to drain the low lying work area to the extent possible before returning to complete the pathway construction. It is believed that it may take several days for this drainage to occur. However, this will be monitored by the Contract Administrator and the Contractor to minimize the deferral of the balance of the pathway construction.

The re-establishment of the swale ditch will generally entail excavation of the pathway subgrade and a new swale closer to the rail embankment. Suitable excavated material will be used to fill the existing ditch bottom as indicated on the drawing cross sections.

E12.2 Pathway Construction Access – The Contractor is advised that the pathway design provides for a 3.0m wide construction access “road” to be constructed immediately adjacent to the pathways

in several locations for construction equipment and material access. The intent is for the Contractor to strip this area and maintain it as his main materials and equipment access to the pathway subgrade minimizing direct construction traffic on the pathways themselves as they are constructed.

E13. ROADWAY WORKS AT RAVELSTON/CEMR RAIL CROSSING

E13.1 The Contractor shall excavate the existing chip sealed roadway surface and remove the existing asphalt pavement up against the tracks to the limits indicated on the drawings. He shall construct a new Type 1A Asphaltic Concrete Pavement structure (RAS modification will not be allowed for the roadway pavement) up to and across the CEMR rail tracks as part of the Transcona Trail Phase IA works.

The Contractor shall contact the CEMR representative (to be identified at the preconstruction meeting) 48 hrs in advance of any works adjacent to the rail/road or rail/pathway crossing in order to coordinate traffic control and construction activities. The contractor shall maintain at least one lane of traffic on Ravelston Avenue at all times during work on the rail crossing.

E14. 100MM CRUSHED SUB-BASE MATERIAL WITH GEOTEXTILE FABRIC AND GEOGRID FOR UNSTABLE SUB-GRADES

DESCRIPTION

E14.1 Further to CW 3110, this specification covers the supply and placement of 100mm crushed sub-base material for unstable sub-grades.

E14.2 Referenced Standard Construction Specifications

E14.2.1 CW 3110 – Sub-grade, Sub-base and Base Course Construction

E14.2.2 CW 3120 – Installation of Subdrains

E14.2.3 CW 3130 – Supply and Installation of Geotextile Fabrics

E14.2.4 CW 3135 – Supply and Installation of Geogrid

MATERIALS

E14.3 100mm crushed sub-base material will be supplied in accordance with CW 3110.

E14.4 Separation geotextile fabric will be non-woven fabric supplied in accordance with CW 3120.

E14.5 Geogrid will be supplied in accordance with CW 3135.

CONSTRUCTION METHODS

E14.6 Prepare the subgrade in accordance with CW 3110.

E14.7 Place separation geotextile fabric (non-woven) over the accepted subgrade in accordance with CW 3130.

E14.8 Place geogrid over the separation fabric (non-woven) in accordance with CW 3135.

E14.9 Place sub-base material by end dumping down the centre of the excavation. The sub-base shall be pushed forward and levelled using a track type dozer where possible, to build a thickened section to support the hauling operations and avoid damage to the subgrade, geotextile fabric or geogrid. This procedure shall continue until all sub-base material has been placed down the centre of the excavation.

E14.10 Spread the sub-base material to final grades utilizing a track type dozer.

- E14.11 Initial compaction of the sub-base material shall consist of two complete passes utilizing vibratory type equipment capable of compacting the material. Each pass shall be over lapped by half the width of the roller. All additional compaction shall be completed utilizing static type equipment. No trucks, rubber tire loaders or graders will be allowed to travel on the sub-base material until the Contract Administrator has approved the compaction of the sub-base.
- E14.12 The final compacted thickness of the sub-base material shall be a minimum of 300 mm thickness or as shown on the drawings.

MEASUREMENT AND PAYMENT

- E14.13 Supply and installation of separation geotextile fabric (non-woven) will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Separation Geotextile Fabric". The area to be paid for will be the total number of square metres of separation geotextile fabric, supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.
- E14.14 Supply and installation of geogrid will be measured and paid in accordance with CW 3135.
- E14.15 Supply, placement and compaction of crushed sub-base material will be measured and paid in accordance with CW 3110.
- E14.16 No measurement or payment will be made for materials rejected by the Contract Administrator.

E15. RECYCLED CONCRETE BASE COURSE MATERIAL

DESCRIPTION

- E15.1 General
- E15.1.1 Further to CW 3110, this specification covers supply and placement of recycled concrete base course material for Full-Depth Partial Slab Patches (Class A, B, C, & D), miscellaneous concrete slabs and sidewalks.
- E15.2 Definitions
- E15.2.1 Deleterious material – are materials such as vegetation, organic material, wood, glass, plastic, metal, reinforcing steel, building rubble, brick, salvaged asphalt materials, clay, shale, and friable particles.
- E15.3 Referenced Standard Construction Specifications
- (a) CW 3110 – Sub-Grade. Sub-Base and Base Course Construction.
 - (b) CW 3230 – Full-Depth Patching of Existing Pavement Slabs and Joints.
 - (c) CW 3235 – Renewal of Existing Miscellaneous Concrete Slabs.
 - (d) CW 3325 – Portland Cement Concrete Sidewalk.

MATERIALS

- E15.4 Recycled Concrete Base Course Material
- E15.4.1 Recycled concrete base course material when used for Full-Depth Partial Slab Patches (Class A, B, C, & D), miscellaneous concrete slabs and sidewalks will be considered equal to granular or limestone base course material specified in Section 2.2 of CW 3110.
- E15.4.2 Recycled concrete base course material will be approved by the Contract Administrator.
- E15.4.3 Recycled concrete base course material will consist of sound durable particles produced by crushing, screening, and grading of recovered concrete materials, free from soft material that would disintegrate through decay or weathering.

E15.4.4 The recycled concrete base course material will be well graded and conform to the following grading requirements:

Recycled Concrete Base Course Material Grading Requirements

CANADIAN METRIC SIEVE SIZE	PERCENT OF TOTAL DRY WEIGHT PASSING EACH SIEVE
20 000	100%
5 000	40% - 70%
2 500	25% - 60%
315	8% - 25%
80	6% - 17%

E15.4.5 Recycled concrete base course material when subjected to the abrasion test will have a loss of not more than 35% when tested in accordance with grading B of ASTM C131, Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

E15.4.6 The amount of deleterious material will be limited to a maximum of two percent of the total dry weight.

CONSTRUCTION METHODS

E15.5 Placement of Recycled Concrete Base Course Material

E15.5.1 Place and compact recycled concrete base course material as a levelling course to a maximum thickness of 50 millimetres.

E15.5.2 Spread materials uniformly to avoid segregation free of pockets of fine and coarse material.

E15.5.3 Level and compact to the finished elevation. Compact to 100% Standard Proctor Density for Full-Depth Partial Slab Patches (Class A, B, C, & D) and 90% Standard Proctor Density for miscellaneous concrete slabs and sidewalks.

E15.5.4 Maintain the finished material until the pavement or sidewalk is placed.

MEASUREMENT AND PAYMENT

E15.6 Recycled Concrete Base Course Material

E15.6.1 The supplying, placing and compaction of recycled concrete base course material will be measured on a volume basis and paid for at the Contract Unit Price per cubic metre for the "Supplying and Placing Base Course Material" as specified in accordance with CW 3110.

E15.6.2 No measurement or payment will be made for material placed as a levelling course under miscellaneous concrete slabs and sidewalks where the costs are included in accordance with CW 3235 and CW 3325.

E15.6.3 No measurement or payment will be made for materials rejected by the Contract Administrator.

E16. RAS (RECYCLED ASPHALT SHINGLE) MODIFIED ASPHALT

DESCRIPTION

E16.1 General

E16.1.1 Further to CW 3410, this specification covers supply and placement of RAS modified asphalt for asphaltic concrete base course, asphaltic concrete pavement and asphaltic pavement overlays.

E16.2 Definitions

E16.2.1 Contaminants – are materials such as vegetation, organic material, wood, glass, plastic, metal, reinforcing steel, building rubble, brick, salvaged asphalt materials, clay, shale, and friable particles.

E16.3 Referenced Standard Construction Specifications

(a) CW 3410 – Asphaltic Concrete Pavement Works

MATERIALS

E16.4 RAS (Recycled Asphalt Shingle) Modified Asphalt

E16.4.1 RAS material is subject to approval by the Contract Administrator.

E16.4.2 RAS material may be incorporated to a maximum of 3% by weight of total mix into Type 1A mix design asphalt for asphalt pavements top lift overlays constructed on local residential street pavements and multi-use paths. This mix will be known as RAS modified Type 1A Asphalt.

E16.4.3 RAS material may be incorporated to a maximum of 5% by weight of total mix into Type III mix design asphalt for asphalt pavement base layer constructed on local residential street pavements and multi-use paths. This mix will be known as RAS modified Type III Asphalt.

E16.4.4 Blending of RAS material will be during production and the mix produced will consist of a uniform blend of all materials.

E16.4.5 A mix design statement in accordance with section 6.1 will be submitted to the Contract Administrator for approval.

E16.4.6 All physical requirements and combined aggregate gradation limits will be in accordance with Table 1 - CW 3410-R5.1 and Tables 2 - CW 3410-R5.2.

E16.4.7 RAS material will consist of sound durable particles produced from recovered asphalt shingles, free from contaminants.

E16.4.8 The recycled asphalt shingle material particles will be a maximum size of 10mm.

E16.4.9 Testing of materials will be in accordance with CW 3410.

E16.4.10 The amount of organic material in a final mix of hot mix asphalt and RAS will be limited to a maximum of one percent by weight for Type 1A (Surface Course) and a maximum of two percent by weight for Type III (Base Course).

CONSTRUCTION METHODS

E16.5 Construction methods shall be in accordance with CW 3410.

MEASUREMENT AND PAYMENT

E16.6 Construction of RAS Modified Type 1A Asphaltic Concrete Pavement

E16.6.1 Construction of RAS Modified Type 1A Asphaltic Concrete Pavement will be measured on a weight basis and paid for at the Contract Unit Price per tonne for the "Items of Work" listed here below. The weight to be paid for will be the total number of tonnes of RAS Modified Type 1A Asphaltic Concrete Pavement placed and compacted in accordance with this specification, accepted by the Contract Administrator as measured on a certified weigh scale.

Items of Work:

Construction of RAS Modified Type 1A Asphaltic Concrete Pavement

- i) Main Line Paving
- ii) Tie-ins and Approaches

E16.7 Construction of RAS Modified Type 1A Asphaltic Concrete Pavement Overlay

E16.7.1 Construction of RAS Modified Type 1A Asphaltic Concrete Pavement Overlay will be measured on a weight basis and paid for at the Contract Unit Price per tonne for the "Items of Work" listed here below. The weight to be paid for will be the total number of tonnes of RAS Modified Type 1A Asphaltic Concrete Pavement Overlay placed and compacted in accordance with this specification, accepted by the Contract Administrator as measured on a certified weigh scale.

Items of Work:

Construction of RAS Modified Type 1A Asphaltic Concrete Pavement Overlay

- i) Main Line Paving
- ii) Tie-ins and Approaches

E16.8 Construction of RAS Modified Type III Asphaltic Concrete Base Course

E16.8.1 Construction of RAS Modified Type III Asphaltic Concrete Base Course will be measured on a weight basis and paid for at the Contract Unit Price per tonne for the "Items of Work" listed here below. The weight to be paid for will be the total number of tonnes of RAS Modified Type III Asphaltic Concrete Base Course placed and compacted in accordance with this specification, accepted by the Contract Administrator as measured on a certified weigh scale.

Items of Work:

Construction of RAS Modified Type III Asphaltic Concrete Base Course

- i) Main Line Paving
- ii) Tie-ins and Approaches

E17. SUPPLY AND INSTALLATION OF NEW BOLLARDS

E17.1 General

E17.1.1 This specification covers the supply and installation of new pathway bollards.

E17.2 Materials

E17.2.1 Wooden Bollards

- (a) The (uprights) shall be 8"(in) x 8'(ft) timbers, S4S, square edge to CAS 080, pressure treated pine or fir to National Lumber Grades Authority standard grading rules, all kiln dried to a moisture content of 19%;
- (b) Detailing shall be ¼"(in) radius on all exposed edges except on reveille and top peak, 1"(in) dado reveille 4"(in) from the top of timber on all four sides, peaked 1"(in) relief on top of timer, equal distant front and back;
- (c) The colour finish shall be a solid colour deck & siding stain (Floor # 428 Pebblestone Clay) or an approved alternate;
- (d) All timber bollards shall be free of defects, warping, checking or bent materials as they will be rejected;
- (e) The timber bollards shall be identified by an official grade mark, continuing symbol of grading agency, mill number or name, grade of lumber, species or species grouping or combination designation, rules under which grade and conditions of seasoning at the time of manufacture.

E17.2.2 Crushed Limestone Base Backfill

- (a) Supply crushed limestone base course in accordance with CW 3110-R12.

E17.3 Construction Methods

- E17.3.1 Wooden pathway bollards shall be installed in a careful workman like manner to grade and alignment as directed by the Contract Administrator. A 500mm diameter hole shall be augured into the ground to the specified depth. The bollards shall be set exactly vertical into the augured hole and backfilled with crushed limestone base, installed 6" lifts, tamped thoroughly on each lift to an elevation within 75mm of boulevard grade. Ensure posts are plumb.

E17.4 Measurement and Payment

- E17.4.1 The Supply and Installation of the Wooden Pathway Bollards shall be paid for at a Contract Unit Price per bollard, for "Supply and Installation of New Bollards" and will cover all other items incidental to the work included in the specification.

E18. CONSTRUCTION OF CONTROL ACCESS GATES

E18.1 Description

- E18.1.1 This specification covers the construction of the control access gates at various locations as indicated on the drawings.
- E18.1.2 The work to be done under this specification shall include the supply of all materials, and the furnishing of all superintendence, overhead, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all work as hereinafter specified.

E18.2 Materials

- E18.2.1 All materials are as outlined and detailed on the construction drawings.
- E18.2.2 The Contractor shall be responsible for the supply, safe storage and handling of all materials set forth in this specification.
- E18.2.3 All materials supplied under this Specification shall be subject to inspection by the Contract Administrator.

E18.3 Construction Methods

- E18.3.1 Prior to commencing installation of the concrete piles, the Contractor shall verify that the piles can be installed in strict accordance with the drawings.
- E18.3.2 This shall include contacting all Utilities and other owners of the underground facilities in order to ensure that the proposed location of the piles is not in conflict with the location of any water pipe, gas line, electrical wire, cable, conduit, sewer, sprinkler system, or other existing facilities or equipment.
- E18.3.3 Should there be a conflict between a proposed pile location and any underground facility, the Contract Administrator must be notified immediately.
- E18.3.4 Construction of control access gates shall be done as detailed and specified on the construction drawings to the satisfaction of the Contract Administrator.

E18.4 Measurement and Payment

- E18.4.1 Construction of Control Access Gates will be paid for at the Contract Unit Price per "Construct Control Access Gate", 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.

E19. SALT TOLERANT GRASS SEEDING

DESCRIPTION

- E19.1 Further to CW 3520 and CW3540, this specification shall cover sub-grade preparation and the supply and placement of Salt Tolerant Grass Seed.

MATERIALS

E19.2 Salt Tolerant Grass Seed

E19.2.1 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 Nuttalls Alkaligrass (*Puccinellia* spp.), twenty percent (20%) Audubon or Aberdeen Creeping Red Fescue and ten percent (10%) Perennial Ryegrass.

EQUIPMENT

E19.3 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

E19.4 Preparation of Existing Grade

E19.4.1 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.

E19.4.2 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).

E19.5 Salt Tolerant Grass Seeding

E19.5.1 Salt Tolerant Grass Seed shall be sown at a rate of 2.2 kilograms per 100 square meters.

MEASUREMENT AND PAYMENT

E19.6 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.

E20. SURFACE RESTORATIONS

E20.1 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.

E21. ASPHALT TRAFFIC BARRIER

E21.1 The Contractor shall construct an asphalt traffic barrier to the grade and profile shown on the plans. The barrier shall consist of Type IA Asphaltic Concrete or RAS Modified Type IA Asphaltic Concrete.

E21.2 The Asphalt Traffic Barrier will be paid for at the Contract Unit Price per "Asphalt Traffic Barrier", 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.

E22. SUPPLY AND INSTALL DETECTABLE WARNING TILES

DESCRIPTION

- E22.1 This specification covers the supply and installation of detectable warning surface tiles in sidewalk ramps and multi-use path ramps.

SPECIFICATIONS AND DRAWINGS

- E22.2 Referenced Standard Construction Specifications and Standard Details

- (a) CW 3235 - Renewal of Existing Miscellaneous Concrete Slabs
- (b) CW 3240 - Renewal of Existing Curbs
- (c) CW 3310 - Portland Cement Concrete Pavement Works
- (d) CW 3325 - Portland Cement Concrete Sidewalk
- (e) SD-229C - Curb Ramp for Concrete Pavement
- (f) SD-229D - Curb Ramp for Asphalt Overlay

- E22.3 Attached; SDE Drawings and Installation Manual

- (a) SDE-229A - Curb Ramp Layout for Intersections
- (b) SDE-229AA - Detectable Warning Surface in Curb Ramps for Intersections
- (c) SDE-229AB - Curb Ramp Layout for Offset Intersections
- (d) SDE-229BB - Detectable Warning Surface in Curb Ramps for Medians
- (e) SDE-229E - Curb Ramp Depressed Curb
- (f) Manufacturer's Installation Manual – Armor-Tile Cast in Place Inline Dome Detectable/Tactile Warning Surface Tile.

MATERIALS

- E22.4 Acceptable Detectable Warning Surface Tile product is:

2'x 4' (610 x 1220mm) Armor-Tile Cast in Place (yellow).

Available from:

Engineered Plastics Inc.
1400 Cornwall Road Unit 6
Oakville, Ontario L6J 7W5

Attention: Manny Burgio
Ph: 800-682-2525
Fax: 800-769-4463

or

Alsip's Building Products
1 Cole Avenue
Winnipeg, Manitoba

Attention: Jason Alsip
Ph. 204-667-3330

- E22.4.1 Detectable warning surface tiles shall be Highway Yellow (USA) or Safety Yellow (Canada).
- E22.4.2 Detectable warning surface tiles shall be cast in place type.
- E22.4.3 Truncated domes on detectable warning surface tiles shall be in accordance with ADA Accessibility Guidelines (ADAAG).

CONSTRUCTION METHODS

E22.5 General

- E22.5.1 Construct curb ramps, sidewalk ramps and multi-use path in accordance with referenced Standard Construction Specifications, Standard Details, and SDE drawings (attached).
- E22.5.2 Construct the lip of the depressed curb in accordance with SDE-229E.
- E22.5.3 Construct sidewalk ramp grades in accordance with SD-229C and SD-229D.
- E22.5.4 Install the detectable warning surface tile in accordance with the amended Manufacturer's Installation Manual (attached). Drill additional 6mm air vent holes in ribs under the tile as required and use vibration to help seat the tile, to facilitate the installation process.
- E22.5.5 Trim the corner of the tile at radii in accordance with SDE-229A, SDE-229AA and SDE-228AB
- E22.5.6 Install and orient the detectable warning surface tiles as shown on the referenced drawings or as directed by the Contract Administrator.

E22.6 Medians and Refuge Islands:

- E22.6.1 Where the distance from back of curb to back of curb is 1.32m or greater, install one detectable warning surface tile 50mm from the back of each curb.
- E22.6.2 Where the distance from back of curb to back of curb is less than 1.32m, leaving 50mm between the back of curb and the tile, cut the tile(s) to fill the remaining area between the curbs.

E22.7 Multi-use Paths

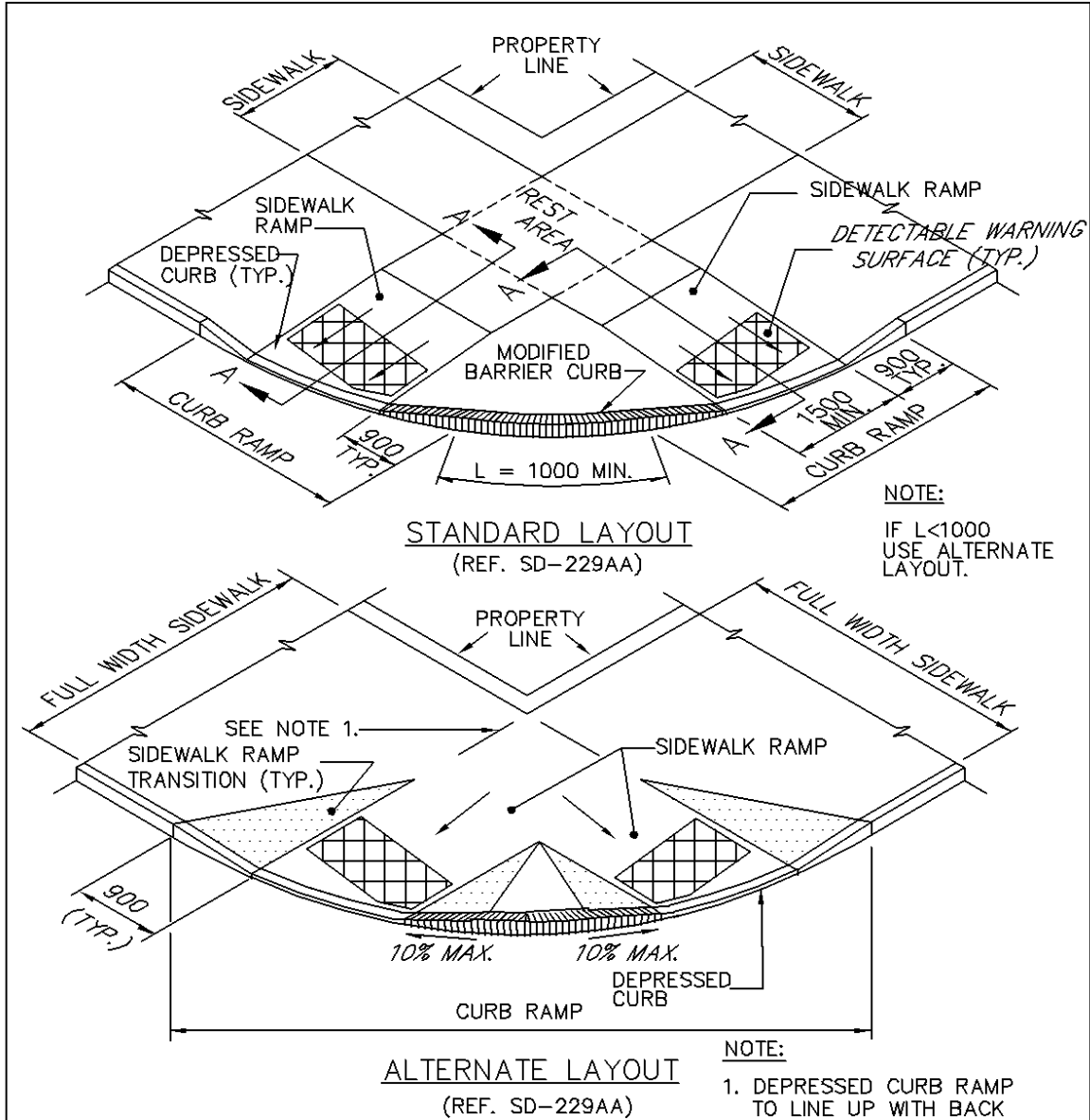
- E22.7.1 Construct a curb ramp with a depressed curb to the full width of the multi-use path in accordance with SDE-229E.
- E22.7.2 Construct a concrete ramp the width of the multi-use path and a minimum of 1.50m deep from back of curb in accordance with SD-229C and SD-229D.
- E22.7.3 Install two (2) tiles in each concrete ramp, one (1) on each side for each direction. Place the short edge of each tile 150mm from the edge of the concrete ramp, with both tiles in line with each other transversely across the concrete ramp. The tile(s) nearest the curb must be 50mm from back of curb similar to tile placement in SDE-229A.
- E22.7.4 Saw cut the middle of the concrete slab, perpendicular to the curb and to a depth of D/4. Cut additional sawcuts as directed by the Contract Administrator.

MEASUREMENT AND PAYMENT

- E22.8 Supply and installation of detectable warning surface tiles will be measured on a unit basis and paid for at the Contract Unit Price for "Detectable Warning Surface Tiles". The number of units to be paid for will be the total number of full or trimmed tiles supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.
- E22.8.1 The area under the detectable warning surface tile is part of the concrete sidewalk ramp and will be paid in accordance with CW 3235 and CW 3325.

- E22.8.2 The concrete sidewalk ramp and the concrete ramp for multi-use paths will be paid as 100mm sidewalk in accordance with CW 3235 or CW 3325.
- E22.8.3 Curb ramp will be paid in accordance with CW 3240 or CW 3310.

DRAWINGS AND INSTALLATION MANUAL



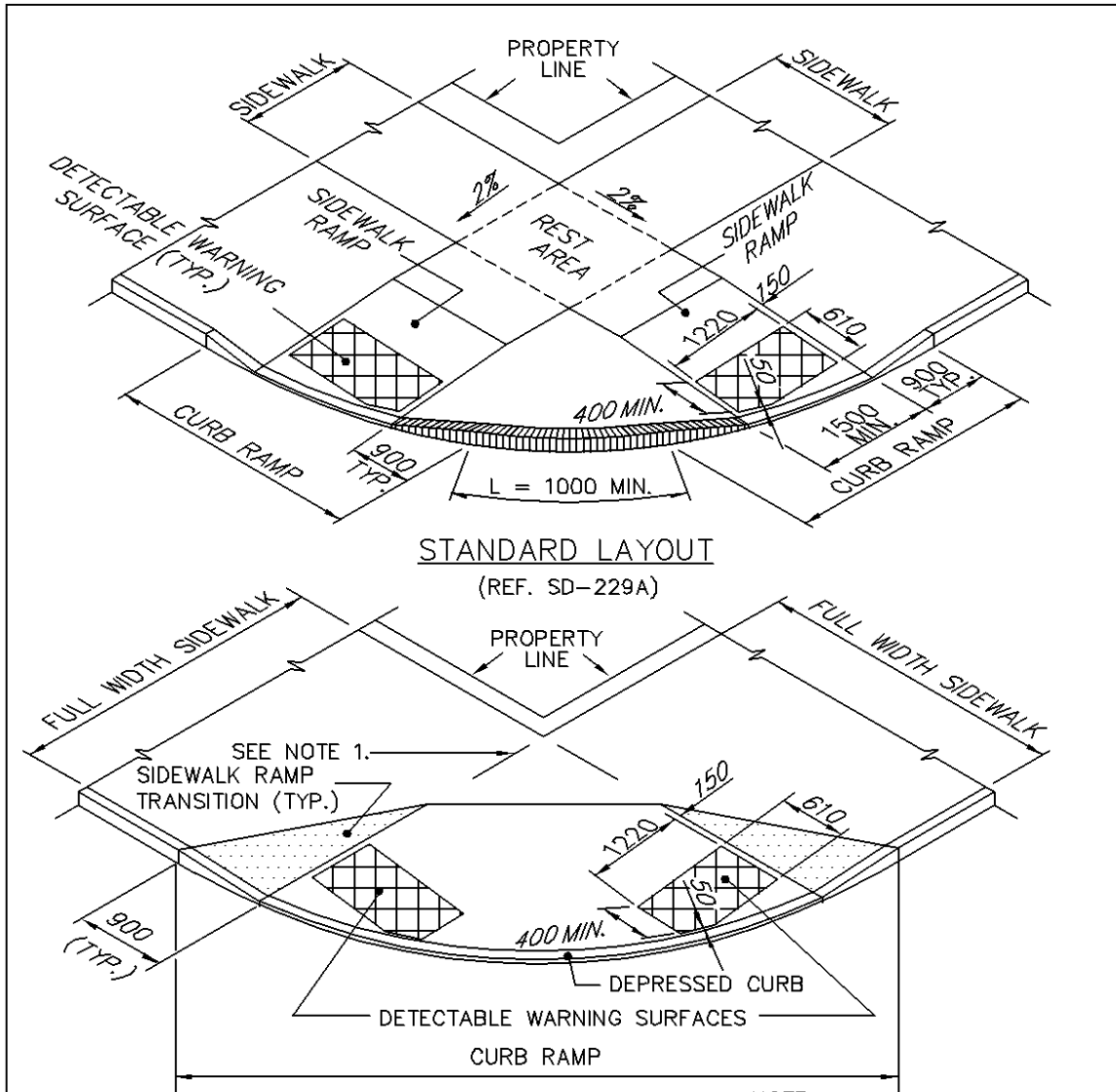
- NOTE:**
1. DEPRESSED CURB RAMP TO LINE UP WITH BACK OF SIDEWALK.
 2. FOR SECTION A-A SEE SD-229C & SD-229D
 3. SEE SDE-229AA, SDE-229BB & SDE-229E FOR DETECTABLE WARNING SURFACES.
- DIMENSIONS ARE IN MILLIMETRES

 **THE CITY OF WINNIPEG**
 PUBLIC WORKS DEPARTMENT


Reference Spec. No.
 CW 3235, CW 3310, CW 3325
 E-SUPPLY & INSTALL DETECTABLE WARNING SURFACE

CURB RAMP LAYOUT FOR INTERSECTIONS

Designed By: B.P.	Drawn By: T.G.A.	Scale : N.T.S.
Checked By: F.W.C.	Date: 10-02-18	Drawing No.
Approved:	SDE-229A	



- NOTE:**
1. DEPRESSED CURB RAMP TO LINE UP WITH BACK OF SIDEWALK.
 2. FOR A 1.83m WIDE SIDEWALK USE A DETECTABLE WARNING SURFACE MEASURING 610 X 1520

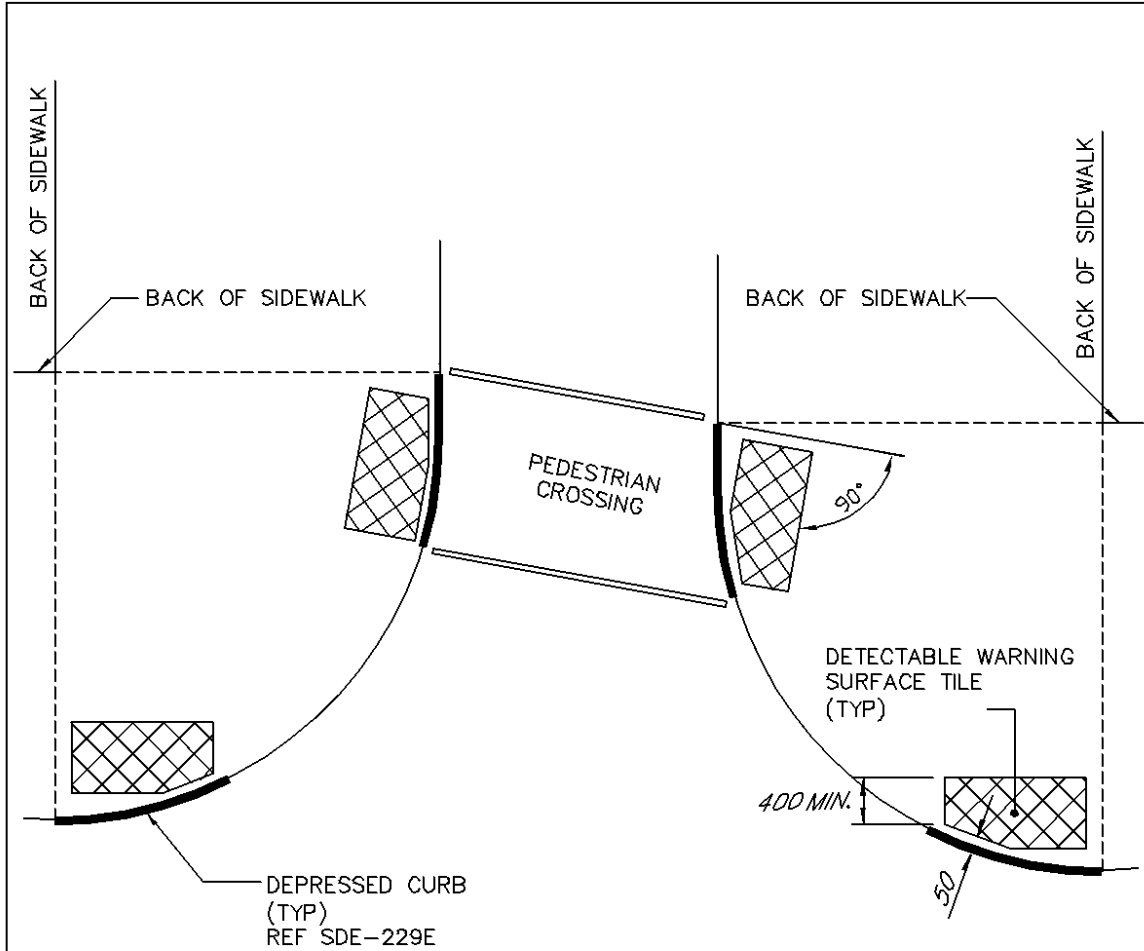
 **THE CITY OF WINNIPEG**
 PUBLIC WORKS DEPARTMENT

Reference Spec. No.
 CW 3235, CW 3310, CW 3325
 E-SUPPLY & INSTALL DETECTABLE WARNING SURFACE

**DETECTABLE WARNING SURFACE
 IN CURB RAMPS FOR
 INTERSECTIONS**


Designed By: B.P.	Drawn By: T.G.A.	Scale: N.T.S.
Checked By: F.W.C.	Date: 10-02-18	Drawing No.
Approved:	SDE-229AA	

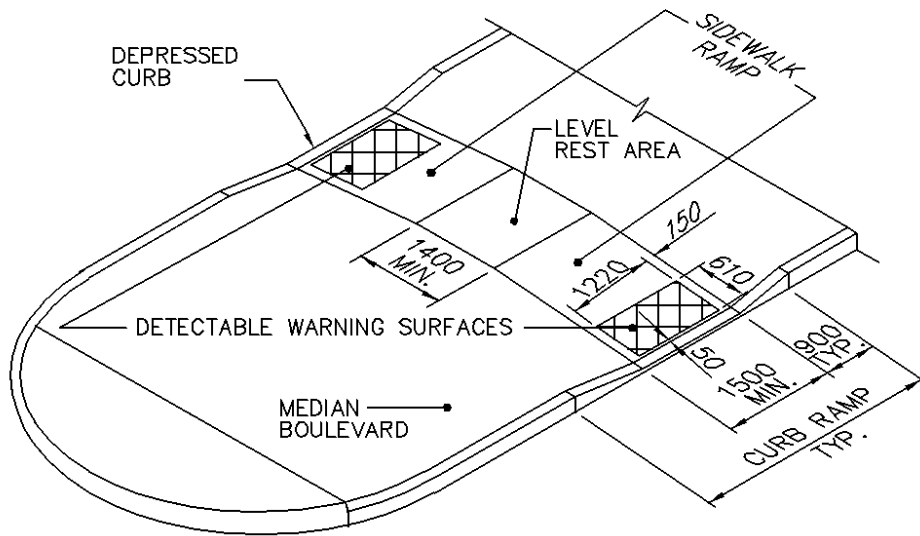
DIMENSIONS ARE IN MILLIMETRES



NOTES:

1. LOCATE GRATINGS, ACCESS COVERS AND OTHER APPURTENANCES OUTSIDE OF CURB RAMPS, DEPRESSED CURBS, CLEAR SPACE LANDINGS AND GUTTERS AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
2. LOCATE END OF DEPRESSED CURB IN LINE WITH PROJECTED BACK OF SIDEWALK.


 THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT		DIMENSIONS ARE IN MILLIMETRES		
Reference Spec. No. CW 3235, CW 3310, CW 3325 E—SUPPLY & INSTALL DETECTABLE WARNING SURFACE		Designed By: B.P.	Drawn By: T.G.A.	Scale : N.T.S.
CURB RAMP LAYOUT FOR OFFSET INTERSECTIONS		Checked By: F.W.C.	Date: 10-02-18	Drawing No. SDE-229AB
		Approved:		

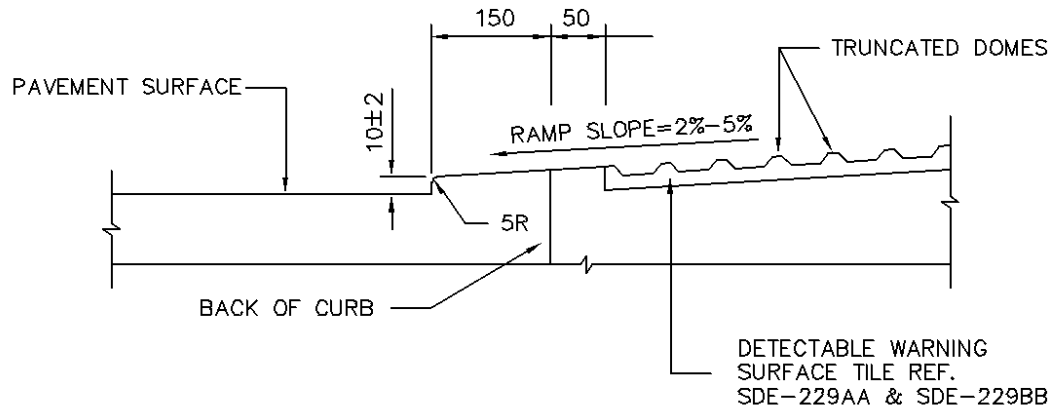


MEDIAN SIDEWALK CROSSING
 (REF. SD-229B)

NOTE:

1. FOR NARROW MEDIANS AND REFUGE ISLANDS < 1.32m IN WIDTH, PLACE DETECTABLE WARNING SURFACE FULL WIDTH, MAINTAINING 50mm SPACING FROM BACK OF CURB.
2. DETECTABLE WARNING SURFACE SHALL NOT BE PLACED AT PRIVATE APPROACHES OR ALLEYS.


 THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT		DIMENSIONS ARE IN MILLIMETRES		
Reference Spec. No. CW 3235, CW 3310, CW 3325 E-SUPPLY & INSTALL DETECTABLE WARNING SURFACE		Designed By: B.P.	Drawn By: T.G.A.	Scale : N.T.S.
DETECTABLE WARNING SURFACE IN CURB RAMPS FOR MEDIANS		Checked By: F.W.C.	Date: 10-12-18	Drawing No. SDE-229BB
		Approved:		



DEPRESSED CURB

NOTES:

- 1) SIDEWALK RAMP SURFACE SHALL BE GIVEN A PARALLEL TEXTURED BROOM FINISH.
- 2) INSTALL DETECTABLE WARNING SURFACE SO THAT THE TOP OF THE TRUNCATED DOMES ARE FLUSH WITH THE SURFACE OF THE ADJACENT SIDEWALK.

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	Reference Spec. No. CW 3235, CW 3310, CW 3325 E-SUPPLY & INSTALL DETECTABLE WARNING SURFACE	Designed By: B.P.	Drawn By: T.G.A.
CURB RAMP DEPRESSED CURB	Checked By: F.W.C.	Date: 10-02-18	Drawing No. SDE-229E
	Approved:		

Manufacturer's Installation Manual Armor-Tile Cast In Place

Inline Dome Detectable/Tactile Warning Surface Tile

- A. During Cast In Place Detectable/Tactile Warning Surface Tile installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.
- B. The specifications of the structural embedment flange system and related materials shall be in strict accordance with the contract documents and the guidelines set by their respective manufacturers. Not recommended for asphalt applications.
- C. The physical characteristics of the concrete shall be consistent with the contract specifications while maintaining a slump range of 4 - 7 to permit solid placement of the Cast In Place Detectable/Tactile Warning Surface Tile system. An overly wet mix will cause the tile to float. Under these conditions, suitable weights such as 2 concrete blocks or sandbags (25 lb) shall be placed on each tile.
- D. Prior to placement of the Cast In Place Detectable/Tactile Warning Surface Tile system, the contract drawings shall be reviewed.
- E. The concrete pouring and finishing operations require typical mason's tools, however, a 4' long level with electronic slope readout, 25 lb. weights, and a large non-marring rubber mallet are specific to the installation of the Cast In Place Detectable/Tactile Warning Surface Tile system. A vibrating mechanism such as that manufactured by Vibco can be employed, if desired. The vibrating unit should be fixed to a soft base such as wood, at least 1 foot square.
- F. The factory-installed plastic sheeting must remain in place during the entire installation process to prevent the splashing of concrete onto the finished surface of the tile.
- G. When preparing to set the tile, it is important that NO concrete be removed in the area to accept the tile. It is imperative that the installation technique eliminates any air voids under the tile. Holes in the tile perimeter allow air to escape during the installation process. Concrete will flow through the large holes in each embedment flange on the underside of the tile. This will lock the tile solidly into the cured concrete.
- H. The concrete shall be poured and finished true and smooth to the required dimensions and slope prior to the tile placement. Immediately after finishing concrete, the electronic level should be used to check that the required slope is achieved. The tile shall be placed in accordance with the contract drawings. The Cast In Place Detectable/Tactile Warning Surface Tiles shall be tamped (or vibrated) into the fresh concrete to ensure that the field level of the tile is flush to the adjacent concrete surface. The embedment process should not be accomplished by stepping on the tile as this may cause uneven setting which can result in air voids under the tile surface. The contract drawings indicate that the tile field level (base of truncated dome) is flush to adjacent surfaces to permit proper water drainage and eliminate tripping hazards between adjacent finishes.
- I. In cold weather climates it is recommended that the Cast In Place Detectable/Tactile Warning Surface Tiles be set deeper such that the top of domes are level to the adjacent concrete on the top and sides of ramp and that the base of domes allow water drainage. This installation will reduce the possibility of damage due to snow clearing operations.
- J. Immediately after placement, the tile elevation is to be checked to adjacent concrete. The elevation and slope should be set consistent with contract drawings to permit water drainage to curb as the design dictates.
- K. While concrete is workable, a 3/8" radius edging tool shall be used to create a finished edge of concrete, then a steel trowel shall be used to finish the concrete around the tile's perimeter, flush to the field level of the tile.
- L. During and after the tile installation and the concrete curing stage, it is imperative that there is no walking, leaning or external force placed on the tile that may rock the tile causing a void between the underside of tile and concrete.
- M. Following tile placement, review installation tolerances to contract drawings and adjust tile before the concrete sets. Two suitable weights of 25 lb each shall be placed on each tile as necessary to ensure solid contact of the underside of tile to concrete.
- N. Following the concrete curing stage, protective plastic wrap is to be removed from the tile surface by cutting the plastic with a sharp knife, tight to the concrete/tile interface. If concrete bled under the plastic, a soft brass wire brush will clean the residue without damage to the tile surface.
- O. If desired, individual tiles can be bolted together using 1/4 inch or equivalent hardware. This can help to ensure that adjacent tiles are flush to each other during the installation process. Tape or caulking can be placed on the underside of the bolted butt joint to ensure that concrete does not rise up between the tiles during installation. Any protective plastic wrap which was peeled back to facilitate bolting or cutting, should be replaced and taped to ensure that the tile surface remains free of concrete during the installation process.
- P. Tiles can be cut to custom sizes, or to make a radius, using a continuous rim diamond blade in a circular saw or mini-grinder. Use of a straightedge to guide the cut is advisable where appropriate.
- Q. Any sound-amplifying plates on the underside of the tile, which are dislodged during handling or cutting, should be replaced and secured with construction adhesive. The air gap created between these plates and the bottom of the tile is important in preserving the detectability properties of the Armor-Tile system as required in various jurisdictions.