



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 360-2011

**2011 LOCAL AND REGIONAL STREETS PROGRAM: LOGAN AVENUE –
MCPHILLIPS STREET TO TRINITY STREET, PAVEMENT RECONSTRUCTION /
MCPHILLIPS STREET NORTHBOUND – NOTRE DAME AVENUE TO LOGAN
AVENUE, MILL AND FILL**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

- B1.1 **2011 LOCAL AND REGIONAL STREETS PROGRAM: LOGAN AVENUE – MCPHILLIPS STREET TO TRINITY STREET, PAVEMENT RECONSTRUCTION / MCPHILLIPS STREET NORTHBOUND – NOTRE DAME AVENUE TO LOGAN AVENUE, MILL AND FILL**

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, June 10, 2011.
- B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.
- B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. ENQUIRIES

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

B4. ADDENDA

- B4.1 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.
- B4.2 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.
- B4.2.1 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>
- B4.2.2 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.
- B4.3 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.

B5. SUBSTITUTES

- B5.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B5.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B5.3 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.
- B5.4 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.
- B5.5 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.
- B5.6 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.
- B5.6.1 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.
- B5.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B5.8 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 B14.
- B5.9 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.
- B5.10 Notwithstanding B5.2 to B5.9, in accordance with B6.6, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B14.1(a).

B6. BID COMPONENTS

B6.1 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;

B6.2 Further to B6.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B5.

B6.3 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.

B6.4 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.

B6.4.1 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.

B6.4.2 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.

B6.5 Bidders are advised not to include any information/literature except as requested in accordance with B6.1.

B6.6 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 B14.1(a).

B6.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B6.8 Bids shall be submitted to:

The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B7. BID

B7.1 The Bidder shall complete Form A: Bid, making all required entries.

B7.2 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.

B7.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B7.2.

B7.3 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.

B7.4 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.

B7.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B7.5 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.

B8. PRICES

B8.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B8.1.1 For the convenience of Bidders, and pursuant to B6.4.2 and B14.4.3, 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>

B8.2 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.

B8.3 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.

B8.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B9. QUALIFICATION

B9.1 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.

- B9.2 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>
- B9.3 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);
- B9.4 Further to B9.3(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>)
- B9.5 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.
- B9.6 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.

B10. BID SECURITY

- B10.1 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.
- B10.1.1 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.
- B10.1.2 All signatures on bid securities shall be original.

- B10.1.3 The Bidder shall sign the Bid Bond.
- B10.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.
- B10.2 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.
- B10.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B10.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.
- B10.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.
- B10.3 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.

B11. OPENING OF BIDS AND RELEASE OF INFORMATION

- B11.1 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.
- B11.1.1 Bidders or their representatives may attend.
- B11.1.2 Bids determined by the Manager of Materials, or his designate, to not include the bid security specified in B10 will not be read out.
- B11.2 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>
- B11.3 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>
- B11.4 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.

B12. IRREVOCABLE BID

- B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B12.2 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.

B13. WITHDRAWAL OF BIDS

- B13.1 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.
- B13.1.1 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.
- B13.1.2 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.
- B13.1.3 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 B13.1.3(b), declare the Bid withdrawn.
- B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 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.

B14. EVALUATION OF BIDS

- B14.1 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 B9 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B5.
- B14.2 Further to B14.1(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.
- B14.3 Further to B14.1(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.
- B14.4 Further to B14.1(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.
- B14.4.1 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.
- B14.4.2 Further to B14.1(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.
- B14.4.3 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. AWARD OF CONTRACT

- B15.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B15.2 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.
- B15.2.1 Without limiting the generality of B15.2, 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.
- B15.3 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 B14.
- B15.3.1 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.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

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

- (a) Pavement Reconstruction, Related Works and Geometric Pavement Modifications on Logan Avenue between the CP rail line crossing on Logan Avenue west of Trinity Street and Yeomans Street.
- (b) Mill and Fill - McPhillips Street Northbound, Logan Avenue to Notre Dame Avenue

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

- (a) Logan Avenue Pavement Reconstruction
 - (i) Construction of temporary asphaltic concrete pavements as applicable
 - (ii) Removal of the existing Portland Cement Concrete Pavement including all overlays and all sidewalk
 - (iii) Excavation and placement of separation geotextile, sub-base and base course materials
 - (iv) Construction of new 230 Plain Dowelled Portland Cement Concrete Pavement on Logan Avenue, using slip form paving where applicable. The exception is in the eastbound gutter lane of Logan Avenue, where the existing utilities prevent the use of slip form paving equipment. The eastbound median lane may use slip form paving equipment but it should be noted there are work area restrictions. Construction of new westbound lane west of McPhillips Street including realignment of right turn yield on southbound McPhillips Street.
 - (v) Construction of new 200 mm Plain Dowelled Portland Cement Concrete Pavement on all side street connections and new 200 mm Reinforced Portland Cement Concrete Pavement on all approaches
 - (vi) Installation of new catchbasins, lead pipe and sub-drains
 - (vii) Adjustment of existing manholes and water valve boxes
 - (viii) Construction of new monolithic curb and sidewalk
 - (ix) Construction of monolithic concrete median slab, bullnose and monolithic concrete safety median
 - (x) Planing of existing asphalt overlay and construction of new asphalt overlay on Logan Avenue west of McPhillips Street including the intersection of McPhillips Avenue and Logan Avenue
 - (xi) Boulevard restoration and site clean-up
- (b) Mill and Fill - McPhillips Avenue Northbound, Logan Avenue to Notre Dame Avenue
 - (i) Planing of existing asphalt overlay
 - (ii) Full and partial depth repair of existing concrete joints and slabs as required
 - (iii) Adjustment of existing manholes, catchbasins and water valves as required
 - (iv) Replacement of existing drainage inlets with catch pits or curb inlet boxes, as required
 - (v) Repair of sections of curb and sidewalk as required
 - (vi) Placement of asphalt overlay (average thickness 60 mm)
 - (vii) Boulevard restoration as required

D3. CONTRACT ADMINISTRATOR

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

Mr. Kevin Rae, P.Eng.
Senior Transportation Engineer
99 Commerce Drive, Winnipeg, Manitoba R3P 0Y7
Telephone No. (204) 928-8430
Facsimile No. (204) 284-2040

D3.2 At the pre-construction meeting, Mr. Kevin Rae, P.Eng. 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, the Contractor shall 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 facsimile number:

The City of Winnipeg
Chief Financial Officer
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
Legal Services Department
Attn: Director of Legal Services
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 B10.1(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 detailed work schedule shall consist of the following:

- (a) a Gantt chart for the Work;
all acceptable to the Contract Administrator.

D12.2 Further to D12.1(a), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

D12.3 All dates and time periods in the detailed work schedule shall be consistent with the Bid except that:

- a) if the actual completion date(s) of the work by others on Logan Avenue is later than the stated assumed date(s) indicated in D16 - Work by Others, the Contractor may adjust the dates on the Detailed Work schedule, by not more than the difference between the aforementioned assumed and actual date(s).

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.
 - (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 Contractor shall not commence the work on Logan Avenue east of McPhillips Street before July 1, 2011, the anticipated Total Performance of Bid Opportunity No. 325-2011, 2011 Watermain Renewals Contract 1.
- D13.5 The City intends to award this Contract by June 20, 2011.
- D13.5.1 If the actual date of award is later than the intended date, the dates specified for Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D14. WORKING DAYS

- D14.1 Further to C1.1(gg);
- D14.1.1 The Contract Administrator will determine daily if a Working Day has elapsed and will record his assessment. On a weekly basis the Contract Administrator will provide the Contractor with a record of the Working Days assessed for the preceding week. The Contractor shall sign each report signifying that he agrees with the Contract Administrator's determination of the Working Days assessed for the report period.
- D14.1.2 Work done to restore the Site to a condition suitable for Work, shall not be considered "work" as defined in the definition of a Working Day.
- D14.1.3 When the Work includes two or more major types of Work that can be performed under different atmospheric conditions, the Contract Administrator shall consider all major types of Work in determining whether the Contractor was able to work in assessing Working Days.

D15. RESTRICTED WORK HOURS

- D15.1 Further to clause 3.10 of CW 1130, the Contractor shall require written permission forty-eight (48) hours in advance from the Contract Administrator for any work to be performed between 2000 hours and 0700 hours, or on Saturdays, Sundays, Statutory Holidays and or Civic Holidays.
- D15.2 In accordance with the Manual of Temporary Traffic Control, Sections 2.03, 2.04, 2.05 and 2.06, should the Traffic Management Branch of the Public Works Department require that work on regional and residential streets be carried out at night or on Sundays or on public holidays, where permitted by the City of Winnipeg Police Department, or that work be restricted or suspended during peak traffic hours, no additional compensation will be considered to meet these requirements.

D16. WORK BY OTHERS

- D16.1 Work by others on or near the Site will include but not necessarily be limited to:
- (a) City of Winnipeg, Water and Waste Department – Abandonment of existing 500 mm Watermain and installation of two new 300 mm waterlines, three metres south of the north property line of Logan Avenue and three metres north of the south property line of Logan Avenue. Limits of the watermain renewal are from the west side of the rail crossing west of

Trinity Street, to the east side of McPhillips Street. Expected start date is May 9, 2011, expected completion date July 1, 2011.

- (b) Manitoba Hydro - Removal of existing wood poles on the north and south sides of Logan Avenue, from McPhillips Street to west of the CP Rail crossing west of Trinity Street. Installation of new steel light standards and associated electrical conductor on Logan Avenue within the limits of pole removal. Expected start date is unknown at this time, the Contractor will be required to coordinate his work with Manitoba Hydro's work.
- (c) Manitoba Hydro – Adjustment of existing manhole frames on the south side of Logan Avenue. Scheduling to be coordinated with reconstruction work.
- (d) Manitoba Telecom Services – Adjustment of existing manhole frame on the north side of Logan Avenue. Scheduling to be coordinated with reconstruction work.
- (e) City of Winnipeg, Traffic Signals Department – Installation of new traffic signals at the Logan Avenue and McPhillips Street intersection. Traffic Signals work will be coordinated with the pavement reconstruction.
- (f) Manitoba Hydro Gas Division – Lowering and rock wrapping of gas main and services, on an as-required basis, to be coordinated with the pavement reconstruction.
- (g) City of Winnipeg, Traffic Services Department – Placement of signage for diversion of traffic on Logan Avenue west of Yeomans Street to Trinity Street. Scheduling to be coordinated with reconstruction work. Placement of signage for lane closures on northbound McPhillips Street from Notre Dame Avenue to Logan Avenue. Scheduling of closures through the intersection of Logan and McPhillips to be coordinated with reconstruction work.

D17. SEQUENCE OF WORK

D17.1 Further to GC 6.1, the sequence of work shall be as follows:

D17.2 The Work shall be divided into two stages: Stage 1 and Stage 2. Stage 1 will be further divided into two sub-stages, Stages 1A and 1B. Sub-stages are further subdivided into major items of work.

- (a) Stage 1A: Stage 1A will include: construction of eastbound lanes on Logan Avenue, 65 m from the CP rail line, construction of right turn lane from southbound McPhillips Street to westbound Logan Avenue and westbound through lane, Mill and Fill northbound McPhillips Street from Logan Avenue to Notre Dame Avenue, and construction of a 1.0 metre wide temporary asphalt pavement.
 - (i) Close the westbound gutter lane on Logan Avenue in order to construct the temporary asphalt pavement, maintain one lane of traffic in each direction in the median lanes.
 - (ii) Remove the existing curb on the north side of Logan Avenue from the rail crossing west of Trinity Street to the first approach east of McPhillips Street. Remove sufficient sidewalk to allow for construction of temporary asphalt pavement, remainder of sidewalk to remain until construction of new sidewalk in Stage 2. Excavate and place sub-base material and temporary asphalt pavement.
 - (iii) Remove island on northeast corner of Logan Avenue and McPhillips Street and place temporary asphalt for traffic detour.
 - (iv) Eastbound and westbound traffic to be diverted to westbound lanes of Logan Avenue to construct new eastbound gutter lane approximately 65 m from the CP rail line.
 - (v) Remove eastbound gutter lane pavement 65 m from the CP rail line, excavate, install new catchbasin and connect lead to existing 375 combined sewer. Construct eastbound gutter lane 65 m from the CP tracks.
 - (vi) Install lead pipe north under the eastbound centre lane of Logan Avenue and cap off beyond limits of excavation for the eastbound centre lane. This lead will be continued under the westbound lanes of Logan Avenue during Stage 2, for

- connection to the new catchbasin installed in the westbound gutter lane of Logan Avenue.
- (vii) Construct eastbound median lane 65 m from the CP tracks; provide CP and traffic flagperson to alert vehicles of trains and traffic during this stage.
 - (viii) Construct new southbound McPhillips Street to westbound Logan Avenue right turn and westbound through lane including new approaches, catchbasin relocations, removal and replacement of existing sidewalk and reconstruction of island. Install new catchbasin in the north gutter lane of Logan Avenue and connect new lead to the 750 concrete sewer at the centreline of Logan Avenue.
 - (ix) The Contractor shall delay placing the final lift of asphalt on Logan Avenue west of McPhillips Street so that the final lift of all lanes is placed in one operation when the intersection is closed.
 - (x) Complete mill and fill on northbound McPhillips Street from Logan Avenue to Notre Dame Avenue including full and partial depth repairs of concrete joints and slabs, as required. Adjustment of manholes, valves and slabs, as required. Installation of drainage inlets, curb and sidewalk repairs, placement of asphalt overlay 60 mm average thickness and boulevard restoration as required.
- (b) Stage 1B: Stage 1B will include installation of new catchbasins and lead pipe, removal of the existing concrete pavement in the eastbound lanes of Logan Avenue and construction of new concrete pavement, from 65 m west of the CP rail crossing west of Trinity Street to McPhillips Street.
- (i) Install new catchbasins in the south gutter lane of Logan Avenue and connect new leads to the sewer at the centreline of Logan Avenue. Install lead pipe north under the eastbound centre lane of Logan Avenue and cap off beyond limits of excavation for the eastbound centre lane. These leads will be continued under the westbound lanes of Logan Avenue during Stage 2, for connection to the new catchbasins installed in the westbound gutter lane of Logan Avenue.
 - (ii) Remove existing concrete pavement, excavate, install subdrains, place sub-base and base course material from 65 m west of the CP rail crossing west of Trinity Street to McPhillips Street.
 - (iii) Construct new concrete pavement including; Logan Avenue from 65 m west of the CP rail crossing west of Trinity Street to McPhillips Street and side-street connections to Maude and Warnock Streets.
 - (iv) Remove existing concrete sidewalk and construct new monolithic curb and private approaches on the south side of Logan Avenue from the tracks west of Trinity Street to McPhillips Street.
 - (v) At the completion of Stage 1B divert one lane of traffic in the eastbound direction to the new pavement in the eastbound gutter lane of Logan Avenue. No westbound traffic will be accommodated in Stage 2.
- (c) Stage 2: Stage 2 will include; removal of the remaining existing concrete pavement and temporary asphalt pavement, installation of remaining catchbasins, leads and subdrains and construction of new concrete pavement in the westbound lanes of Logan Avenue, construction of side-streets and private approaches, monolithic curb and sidewalk, and monolithic concrete medians and safety median.
- (i) Install remaining catchbasins, leads and subdrains. New leads to be connected to capped leads installed in Stages 1A and 1B.
 - (ii) Remove existing concrete pavement and temporary asphalt pavement, excavate and place sub-base and base course material.
 - (iii) Construct new concrete pavement including side-streets, private approaches and monolithic curb and sidewalk on Logan Avenue from the CP rail crossing west of Trinity Street to McPhillips Street.
 - (iv) Construct monolithic concrete medians and safety median for left turn lanes at McPhillips Street and overlay Logan Avenue west of McPhillips Street to accommodate new left turn lane.

- (v) Complete site clean-up and boulevard restoration.
- (vi) Open all closed lanes to traffic.
- (vii) During Stage 2, the intersection of McPhillips Street and Logan Avenue may be closed to complete the mill and fill through the intersection. This closure is to occur overnight or on a weekend to minimize traffic disruption.
- (viii) All watermain restoration patches in the intersection to be completed a minimum of 3 days prior to the intersection closure.

D18. CRITICAL STAGES

- D18.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) Stage 1A Substage: Reconstruction of Eastbound Lanes 65 m From the CP Tracks. The Contractor shall achieve completion of Stage 1A Substage by July 22, 2011.
- D18.2 When the Contractor considers the Work associated with Stage 1A Substage to be completed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Completion. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D18.3 The date on which eastbound traffic is using the new eastbound median lane 65 m from the CP tracks is the date on which completion of Stage 1A Substage has been achieved.

D19. SUBSTANTIAL PERFORMANCE

- D19.1 The Contractor shall achieve Substantial Performance within seventy-five (75) consecutive Working Days of the commencement of the Work as specified in D13.
- D19.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D19.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D20. TOTAL PERFORMANCE

- D20.1 The Contractor shall achieve Total Performance within eighty (80) consecutive Working Days of the commencement of the Work as specified in D13.
- D20.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D20.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D21. LIQUIDATED DAMAGES

- D21.1 If the Contractor fails to achieve Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the

City the following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:

- (a) Stage 1A Substage eastbound lanes 65 m from the CP tracks – two thousand dollars (\$2,000);
- (b) Substantial Performance – three thousand dollars (\$3,000).
- (c) Total Performance – one thousand dollars (\$1,000)

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

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

D22. SCHEDULED MAINTENANCE

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

- (a) Reflective Crack Maintenance during two year warranty period as specified in CW 3250-R7;
- (b) Maintenance of seeded areas as specified in CW 3520-R7.

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

CONTROL OF WORK

D23. JOB MEETINGS

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

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

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

D24.1 For the purpose of determining Prime Contractor, Phase I shall be the 2011 Watermain Renewals Contract 1 – Logan Avenue, Bid Opportunity No. 325-2011. Phase II shall be the 2011 Local and Regional Streets Program: Logan Avenue – McPhillips Street to Trinity Street, Pavement Reconstruction / McPhillips Street Northbound – Notre Dame Avenue to Logan Avenue, Mill and Fill, Bid Opportunity No. 360-2011, limits as shown on the Drawings.

D24.2 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), as follows:

- (a) For the Construction Project Site, Phase II, upon the Contractor mobilizing to the site or Total Performance of Bid Opportunity No. 325-2011 (2011 Watermain Renewals –

Contract 1, Logan Avenue), whichever occurs first, as notified in writing by the Contract Administrator. Upon assuming the role of Prime Contractor, the Contractor shall assume responsibility for safety and maintenance of all temporarily restored watermain shafts.

WARRANTY

D25. WARRANTY

- D25.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) years thereafter for asphalt resurfacing, and two (2) years thereafter for pavement reconstruction works, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.
- D25.2 Notwithstanding C13.2 or D25.1, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if:
- (a) a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use; or
 - (b) Substantial Performance has been achieved.
- D25.2.1 In such case the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See 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. 360-2011

2011 LOCAL AND REGIONAL STREETS PROGRAM: LOGAN AVENUE – MCPHILLIPS STREET TO TRINITY STREET, PAVEMENT RECONSTRUCTION / MCPHILLIPS STREET NORTHBOUND – NOTRE DAME AVENUE TO LOGAN AVENUE, MILL AND FILL

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

RE: PERFORMANCE SECURITY – BID OPPORTUNITY NO. 360-2011

**2011 LOCAL AND REGIONAL STREETS PROGRAM: LOGAN AVENUE – MCPHILLIPS
STREET TO TRINITY STREET, PAVEMENT RECONSTRUCTION / MCPHILLIPS STREET
NORTHBOUND – NOTRE DAME AVENUE TO LOGAN AVENUE, MILL AND FILL**

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

August 9, 2011
(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)

FORM J: SUBCONTRACTOR LIST
(See D11)

2011 LOCAL AND REGIONAL STREETS PROGRAM: LOGAN AVENUE – MCPHILLIPS STREET TO TRINITY STREET, PAVEMENT RECONSTRUCTION / MCPHILLIPS STREET NORTHBOUND – NOTRE DAME AVENUE TO LOGAN AVENUE, MILL AND FILL

<u>Portion of the Work</u>	<u>Name</u>	<u>Address</u>
<i>SURFACE WORKS:</i>		
<i>Supply of Materials:</i>		
<i>Concrete</i>		
<i>Asphalt</i>		
<i>Base Course & Sub-Base</i>		
<i>Sod</i>		
<i>Installation/Placement:</i>		
<i>Concrete</i>		
<i>Asphalt</i>		
<i>Base Course & Sub-Base</i>		
<i>Sod</i>		
<i>UNDERGROUND WORKS:</i>		
<i>Supply of Materials:</i>		
<i>Catchbasins</i>		
<i>Catch Pits</i>		
<i>Frames & Covers</i>		
<i>Installation/Placement:</i>		
<i>Catchbasins</i>		
<i>OTHERS:</i>		
<i>Sewer Televising</i>		

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
60212147-CT01 R0	Cover Sheet P-3326-01	A1
60212147-CT02 R0	Construction Staging P-3326-02	A1
60212147-CT03 R0	Geometric Sta. 0+70 to Trinity Street P-3326-03	A1
60212147-CT04 R0	Plan/Profile Sta. 0+70 to Sta. 1+60 P-3326-04	A1
60212147-CT05 R0	Plan/Profile Sta. 1+60 to Sta. 2+60 P-3326-05	A1
60212147-CT06 R0	Plan/Profile Sta. 2+60 to Sta. 3+70 P-3326-06	A1
60212147-CT07 R0	Plan/Profile Sta. 3+70 to Sta. 4+50 P-3326-07	A1
60212147-CT08 R0	Plan/Profile Sta. 4+50 to Sta. 5+60 P-3326-08	A1
60212147-CT09 R0	Plan/Profile Sta. 5+60 to Sta. 6+70 P-3326-09	A1
60212147-CT10 R0	Plan/Profile Sta. 6+70 to Trinity Street (Railway) P-3326-10	A1
60212147-SK-1	McPhillips Street Northbound – Notre Dame Avenue to Logan Avenue, Mill & Fill	A3
60212147-SK-2	McPhillips Street Northbound – Notre Dame Avenue to Logan Avenue, Mill & Fill	A3
60212147-SK-3	McPhillips Street Northbound – Notre Dame Avenue to Logan Avenue, Mill & Fill	A3

E2. GEOTECHNICAL REPORT

- E2.1 Further to C3.1, the geotechnical report is provided to aid the Contractor's evaluation of the pavement structure and/or existing soil conditions. The geotechnical report is contained in Appendix 'A'.

E3. OFFICE FACILITIES

- E3.1 The Contractor shall supply office facilities meeting the following requirements:
- E3.1.1 The field office shall be for the exclusive use of the Contract Administrator.
- E3.1.2 The building shall be conveniently located near the site of the Work.
- E3.1.3 The building shall have a minimum floor area of 25 square metres, a height of 2.4 m with two windows for cross ventilation and a door entrance with a suitable lock.

- E3.1.4 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.
- E3.1.5 The building shall be adequately lighted with fluorescent fixtures and have a minimum of three wall outlets.
- E3.1.6 The building shall be furnished with one desk, one drafting table, one table 3m x 1.2m, one stool, one four drawer legal size filing cabinet, and a minimum of twelve chairs.
- E3.1.7 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.
- E3.1.8 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.
- E3.2 The Contractor shall be responsible for all installation and removal costs, all operating costs, and the general maintenance of the office facilities.
- E3.3 The office facilities will be provided from the date of the commencement of the Work to the date the Contract is completed.
- E3.4 On a one time basis, where directed by the Contract Administrator, the Contractor shall relocate the office facilities to a location more convenient for the remaining Work.

E4. PROTECTION OF EXISTING TREES

- E4.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing boulevard trees within the limits of the construction area:
- E4.1.1 The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.
- E4.1.2 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.
- E4.1.3 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.
- E4.1.4 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.
- E4.1.5 Work on-site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.
- E4.2 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the City Forester or his designate.
- E4.3 No separate measurement or payment will be made for the protection of trees.
- E4.4 Except as required in clause E4.1.3 and E4.1.5, Elm trees shall not be pruned at any time between April 1 and July 31.

E5. TRAFFIC CONTROL

E5.1 Further to clauses 3.6 and 3.7 of CW 1130:

E5.1.1 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.

E5.1.2 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.

E6. TRAFFIC MANAGEMENT

E6.1 Further to clause 3.7 of CW 1130:

E6.1.1 Stage 1A

- (a) One lane of traffic in each direction will be maintained in the median lanes during construction of the temporary asphalt pavement in the westbound gutter lane and during construction of the eastbound gutter lane 65 m from the tracks.
- (b) No right turns permitted from southbound McPhillips to westbound Logan during construction of the right turn yield.
- (c) Traffic will be diverted into the westbound lanes during construction of the eastbound median lane 65 m from the tracks. Traffic flagperson and a CP flagperson will be required during this sub-stage.
- (d) On northbound McPhillips during mill and fill operation only one lane may be closed at a time, the Contractor may be permitted to close one additional lane during asphalt paving operations only.
- (e) Intersecting street and private approaches shall be maintained at all times.

E6.1.2 Stage 1B

- (a) Traffic will be diverted to the westbound lanes during construction of the eastbound lanes except 65 m from the CP tracks, one lane eastbound will be diverted to the eastbound median lane.
- (b) Right in/right out access to all intersecting streets and private approaches on the north side and south side of Logan Avenue shall be maintained at all times.
- (c) Access to businesses on the south side of Logan at Maude will be maintained from Alexander. The Contractor shall not be allowed to stockpile material or store equipment on any side street between Logan and Alexander Avenue, throughout the project limits and for one block beyond the project limits.

E6.1.3 Stage 2

- (a) One lane of traffic eastbound shall be maintained on Logan Avenue in the eastbound gutter lane. The eastbound centre lane shall remain closed to allow for construction of the westbound lanes. No westbound traffic will be accommodated during Stage 2.
- (b) Access to all intersecting streets and private approaches on the south side of Logan Avenue shall be maintained at all times.
- (c) Access to all residences and businesses on the north side of Logan Avenue shall be maintained from side streets and Henry Avenue. The Contractor shall not be allowed to stockpile material or store equipment on any side street between Logan Avenue and Henry Avenue.

E6.2 Should the Contractor be unable to maintain pedestrian or vehicular access to a residence or business, he shall review the planned disruption with the business or residence and the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 24 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.

E6.3 Pedestrian and ambulance/emergency vehicle access must be maintained at all times.

E7. REFUSE AND RECYCLING COLLECTION

E7.1 While access to refuse and/or recycling collection vehicles is restricted, on collection day(s) the Contractor shall move all of the affected property owners refuse and/or recycling materials to a nearby common area, prior to an established time, in accordance with E7.2 to permit the normal collection vehicles to collect the materials. Immediately following recycling collection the Contractor shall return recycling receptacles to the addresses marked on the receptacles.

E7.2 Collection Schedule:

Logan Avenue from McPhillips Street to Trinity Street

Collection Day(s): **Garbage and Recycling Day 5**
Collection Time: **7:00 a.m. to 6:00 p.m.**
Common Collection Area: **Back lane pick up access to side streets required**

McPhillips Street North from Notre Dame Avenue to Logan Avenue.

Collection Day(s): **Recycling Day 5, Garbage when required (autobin)**
Collection Time: **7:00 a.m. to 6:00 p.m.**
Common Collection Area: **Access to side streets and businesses required**

Logan Avenue from McPhillips Street to Yeomans Street

Collection Day(s): **Recycling Day 2, Garbage when required (autobin)**
Collection Time: **7:00 a.m. to 6:00 p.m.**
Common Collection Area: **Back lane pick up access to side streets required**

E7.3 No measurement or payment will be made for the work associated with this specification.

E8. PEDESTRIAN SAFETY

E8.1 During the project, on the north side of Logan Avenue from the rail crossing west of Trinity Street to McPhillips Street, a temporary snow fence shall be erected and maintained between the temporary asphalt paving and the sidewalk. This fence shall be maintained for the duration of Stage 1 and through Stage 2 until the commencement of sidewalk construction. The Contractor shall also erect and maintain a temporary snow fence between the excavation and the sidewalk on the south side of Logan Avenue during Stage 1, until the commencement of sidewalk construction. No measurement for payment shall be made for this work.

E9. WATER OBTAINED FROM THE CITY

E9.1 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.

E10. SURFACE RESTORATIONS

E10.1 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.

E11. INFRASTRUCTURE SIGNS

E11.1 The Contractor shall obtain a minimum of four 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.

E12. SALT TOLERANT GRASS SEEDING

E12.1 Description

E12.1.1 Further to CW 3520 and CW3540, this specification shall cover sub-grade preparation and the supply and placement of Salt Tolerant Grass Seed.

E12.2 Materials

E12.2.1 Salt Tolerant Grass Seed

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

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

E12.3 Equipment

E12.3.1 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.

E12.4 Construction Methods

E12.4.1 Preparation of Existing Grade

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

E12.4.2 Scarification shall consist of breaking up and loosening the sub-grade. No scarification shall occur within the edge of a tree canopy (or drip line).

E12.5 Salt Tolerant Grass Seeding

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

E12.6 Measurement and Payment

E12.6.1 Supply, placement and maintenance of Salt Tolerant Grass Seed will be paid for at the Contract Unit Price per square metre for "Salt Tolerant Grass Seeding", measured as

specified herein, which price shall be payment in full for supplying all materials and for completing all operations herein described and all other items incidental to the work included in this Specification. Payment for Salt Tolerant Grass Seeding shall be in accordance with the following:

- (a) Sixty five (65%) percent of quantity following supply and placement.
- (b) Remaining thirty five (35%) percent of quantity following termination of the Maintenance Period.

E13. SUPPLY AND INSTALL DETECTABLE WARNING SURFACE TILES

E13.1 Description

E13.1.1 This specification covers the supply and installation of detectable warning surface tiles in sidewalk ramps and multi-use path ramps.

E13.2 Specifications and Drawings

E13.2.1 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

E13.2.2 Attached; SDE Drawings and Installation Manual

- (a) SDE-229A - Curb Ramp Layout for Intersections
- (b) SDE-229AA - Detectable Warning Surface Tile in Curb Ramps for Intersections, Layout Option 1
- (c) SDE-229AC - 300x300 Detectable Warning Surface Tile, Layout Option 3
- (d) SDE-229AD - 300x300 Detectable Warning Surface Tile, Layout Option 3 DETAIL
- (e) SDE-229AE - Curb Ramp for Pedestrian Corridor with a Traffic Control Device
- (f) SDE-229AF - Detectable Warning Surface Tile Orientation for Offset Intersections
- (g) SDE-229BB - Detectable Warning Surface Tile in Curb Ramps for Medians
- (h) SDE-229E - Curb Ramp Depressed Curb
- (i) Installation Instructions for Cast in Place Inline Dome Detectable/Tactile Warning Surface Tile.

E13.3 Materials

E13.3.1 Acceptable Detectable Warning Surface Tile product is:

- (a) 610 x 1220 mm (2'x 4') Armor-Tile Cast in Place (Federal Yellow).
- (b) 300 x 300 mm (1'x1') Armor-Tile cast in Place (Federal 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

E13.3.2 Detectable warning surface tiles shall be Federal Yellow (USA); or Safety Yellow (Canada).

E13.3.3 Detectable warning surface tiles shall be cast in place type.

E13.3.4 Truncated domes on detectable warning surface tiles shall be in accordance with ADA Accessibility Guidelines (ADAAG).

E13.4 Construction Methods

E13.4.1 Selection of Layout Options

- (a) Select the appropriate design layout for detectable warning surface tiles according to the following prioritized order:
- (b) Layout Option One - Install detectable warning surface tiles in accordance with SDE-229A and SDE-229AA.
- (c) If two 610 x 1220 mm tiles would physically overlap each other, or would be within 150mm of each other, or if one tile would lie within the circulation path towards the other tile, then install the detectable warning surface tiles according to the following order, Layout Option Two(2) or Three(3).
- (d) Layout Option Two – Separate the tiles by moving either one or both tiles along the curb line in opposite directions, in accordance with this Specification, and keeping the ramp and pedestrian road crossing as perpendicular to the road as is possible, as directed by the Contact Administrator.
- (e) Layout Option Three – Install detectable warning surface tiles in accordance with SDE-229AC and SDE-229AD.

E13.5 General

E13.5.1 Construct curb ramps, sidewalk ramps and multi-use paths in accordance with the referenced Standard Construction Specifications, Standard Details, and SDE drawings.

E13.5.2 Detectable warning surface tile shall not be placed at private approaches or alleys.

E13.5.3 All curb ramps opposite each other shall have the same width.

E13.5.4 Construct the lip of the depressed curb in accordance with SDE – 229E.

E13.5.5 Construct ramp slopes in accordance with SD-229C and SD-229D. Use a ramp slope with preference for a slope as close to 5% maximum as possible.

E13.5.6 Construct flare and curb taper slopes according to the following:

- (a) If the curb taper is within a grassed area, construct the curb taper 900mm in length.
- (b) When the flare and curb taper are in a full width sidewalk and the sidewalk area at the top of the ramp is <1500mm in width, construct the flare and curb taper at 5% slope to allow safe passage for wheelchairs in this area.
- (c) When the flare and curb taper are in a full width sidewalk and the sidewalk area at the top of the ramp is ≥ 1500mm in width, construct the flare and curb taper at 10% slope.

- E13.5.7 Install the detectable warning surface tile in accordance with the attached Installation Instructions. Drill additional 6mm air vent holes in the ribs under the tile as required, and use vibration to help seat the tile, to facilitate the installation process.
- E13.5.8 Trim the corner of the tile at curb radii in accordance with SDE-229AA and SDE-229AD.
- E13.5.9 Install the detectable warning surface tiles as shown on the referenced drawings or as directed by the Contract Administrator.
- E13.5.10 Orient the detectable warning surface tiles perpendicular to the crossing direction.
- E13.5.11 Locate gratings, access covers and other appurtenances outside of the sidewalk ramps, depressed curbs, rest areas, and gutters in front of the depressed curbs, as directed by the Contact Administrator.
- E13.6 Medians and Refuge Islands
- E13.6.1 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.
- E13.6.2 Where the distance from back of curb to back of curb is less than 1.32m, place the tiles 50mm from the back of curb and cut the tile(s) to fill the remaining area between the curbs.
- E13.7 Multi-Use Paths
- E13.7.1 2.0 m Wide Depressed Curb for Multi-use Paths
- Construct a curb ramp with a 2.0m depressed curb at high volume collector and regional street intersections in accordance with SDE-229E, in accordance with Public Works Department guidelines and as directed by the Contract Administrator.
 - Construct the concrete ramp 2.0m wide and a minimum of 1.50m deep from back of curb.
 - Construct the curb ramp in accordance with SD-229C and SD229D.
 - Install one (1) 610mm x 1220mm tile centered to the 2.0m wide depressed curb. The part of the tile nearest the curb must be 50mm from the back of curb similar to tile placement in SDE-229AA.
- E13.7.2 3.5 m Wide Depressed Curb for Multi-use Paths
- Construct a curb ramp with a 3.5m depressed curb at low volume collector and residential street intersections in accordance with SDE-229E, in accordance with Public Works Department guidelines and as directed by the Contact Administrator.
 - Construct the concrete ramp 3.5m wide and a minimum of 1.50m deep from back of curb.
 - Construct the curb ramp in accordance with SD-229C and SD229D.
 - 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-229AA.
 - 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.
- E13.8 Measurement and Payment
- E13.8.1 610 x 1220 mm Detectable Warning Surface Tiles
- Supply and installation of detectable warning surface tiles will be measured on a unit basis and paid for at the Contract Unit Price for "610 x 1220mm 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.

E13.9 300 x 300 mm Detectable Warning Surface Tiles

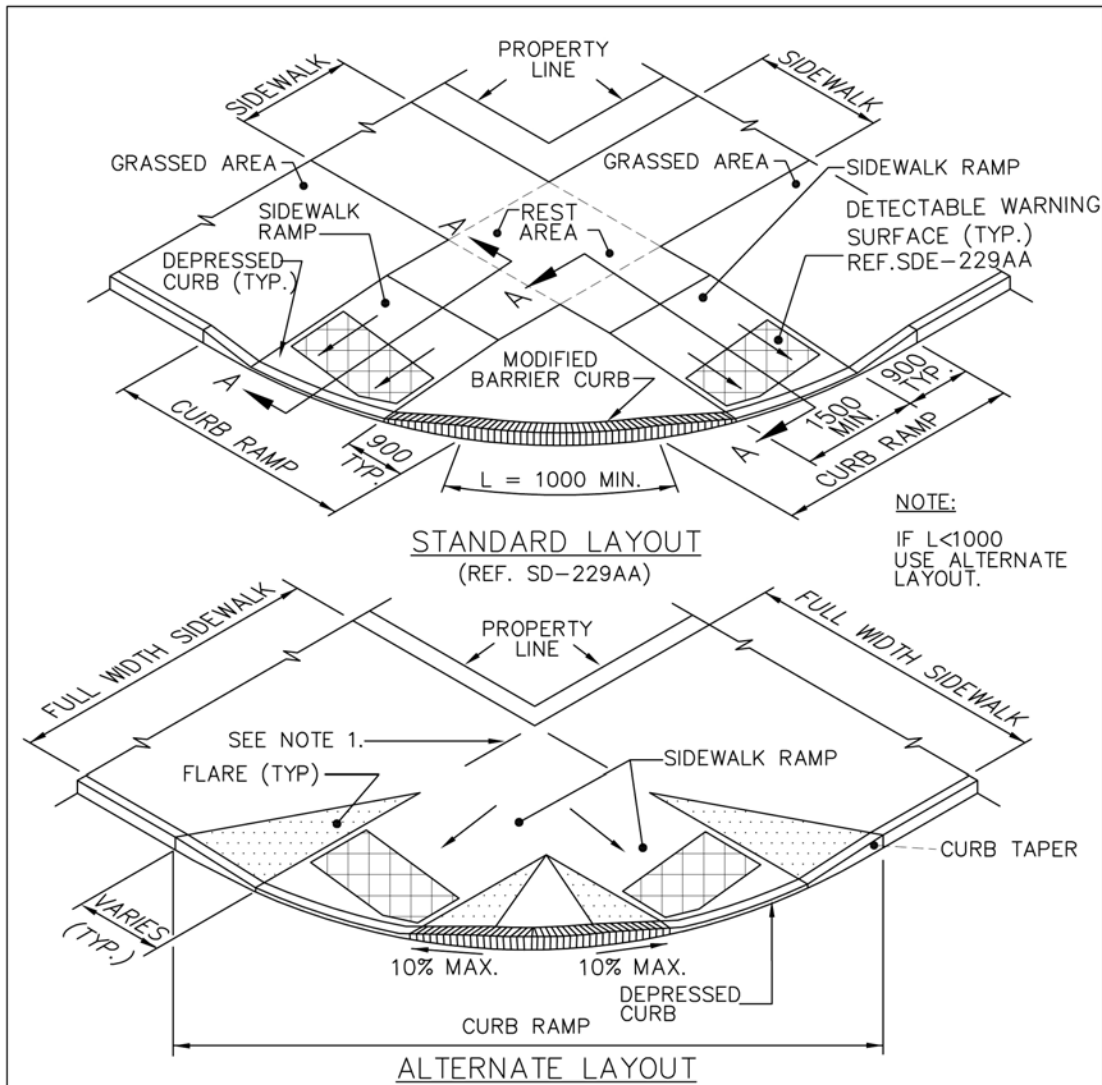
E13.9.1 Supply and installation of detectable warning surface tiles will be measured on a unit basis and paid for at the Contract Unit Price for “300 x 300mm Detectable Warning Surface Tiles”. The number of units to be paid for will be the total number of full or trimmed tiles supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

E13.9.2 The area under the detectable warning surface tile is part of the concrete sidewalk ramp and will be paid in accordance with CW 3235 or CW 3325.

E13.9.3 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.

E13.9.4 Curb ramp will be paid in accordance with CW 3240 or CW 3310.


DRAWINGS AND INSTALLATION MANUAL



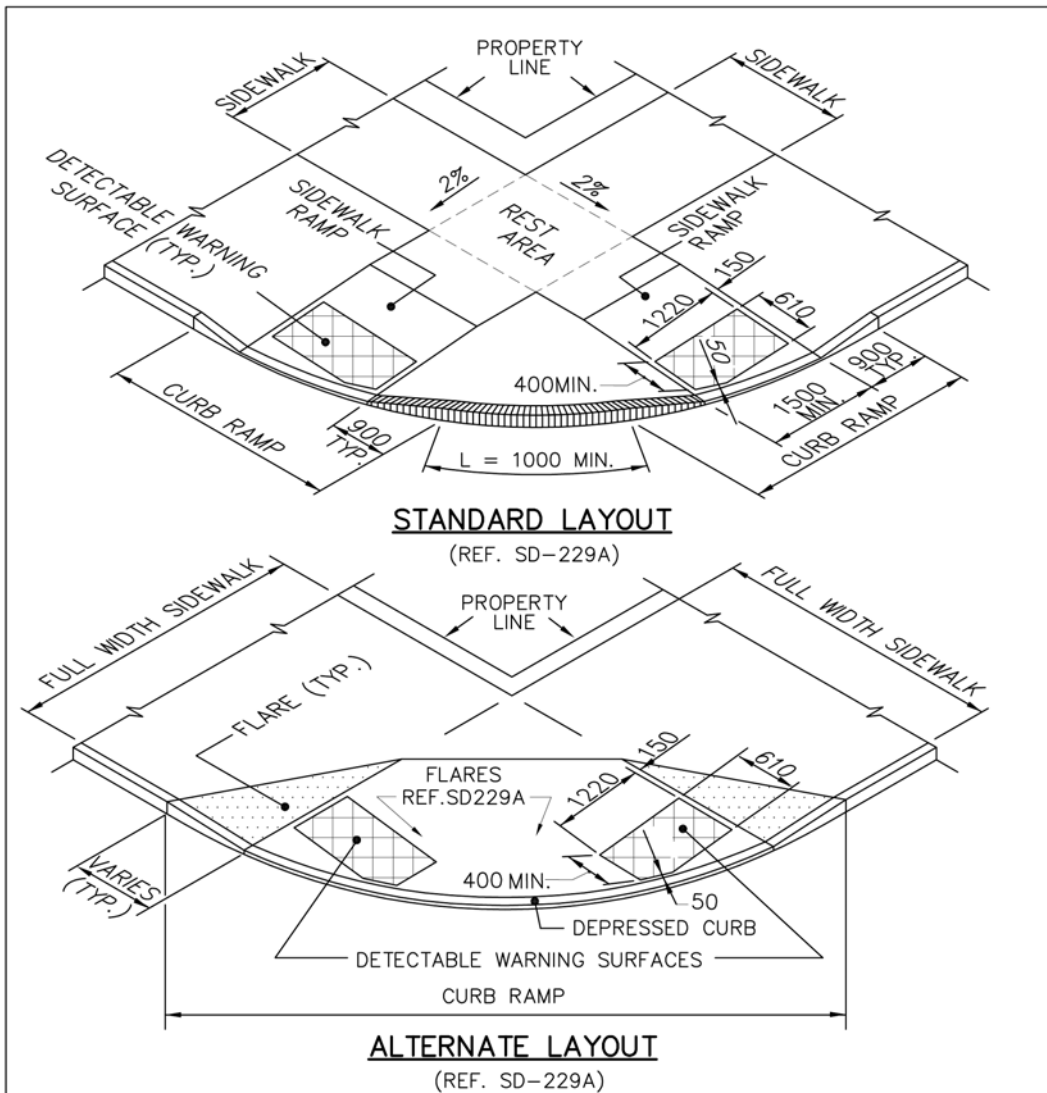
NOTE:
 IF L < 1000
 USE ALTERNATE
 LAYOUT.


- NOTE:**
1. LINEUP DEPRESSIBLE CURB WITH BACK OF SIDEWALK.
 2. FOR SECTION A-A SEE SD-229C & SD-229D
 3. CONSTRUCT FLARE AND CURB TAPER SLOPE IN ACCORDANCE WITH SECTION 1.6 OF THIS SPECIFICATION
 4. REST AREA MINIMUM 1500 X 1500

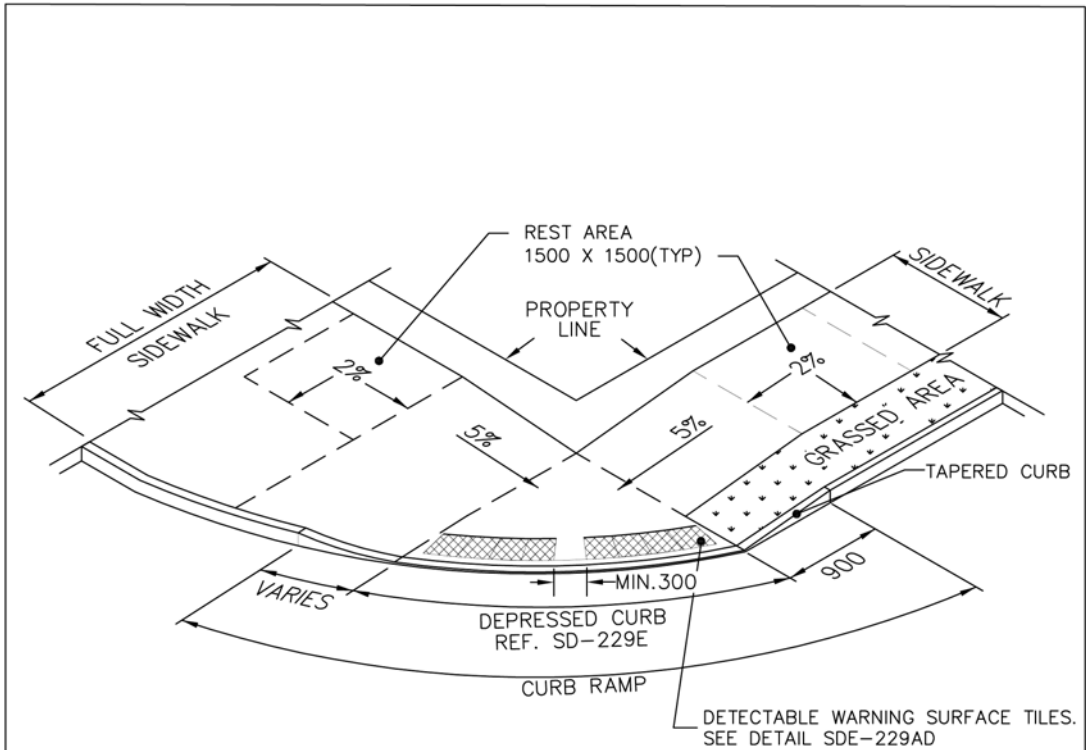
DIMENSIONS ARE IN MILLIMETRES

 THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT	Reference Spec. No. 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: 11-02-10	Drawing No.
Approved:		SDE-229A

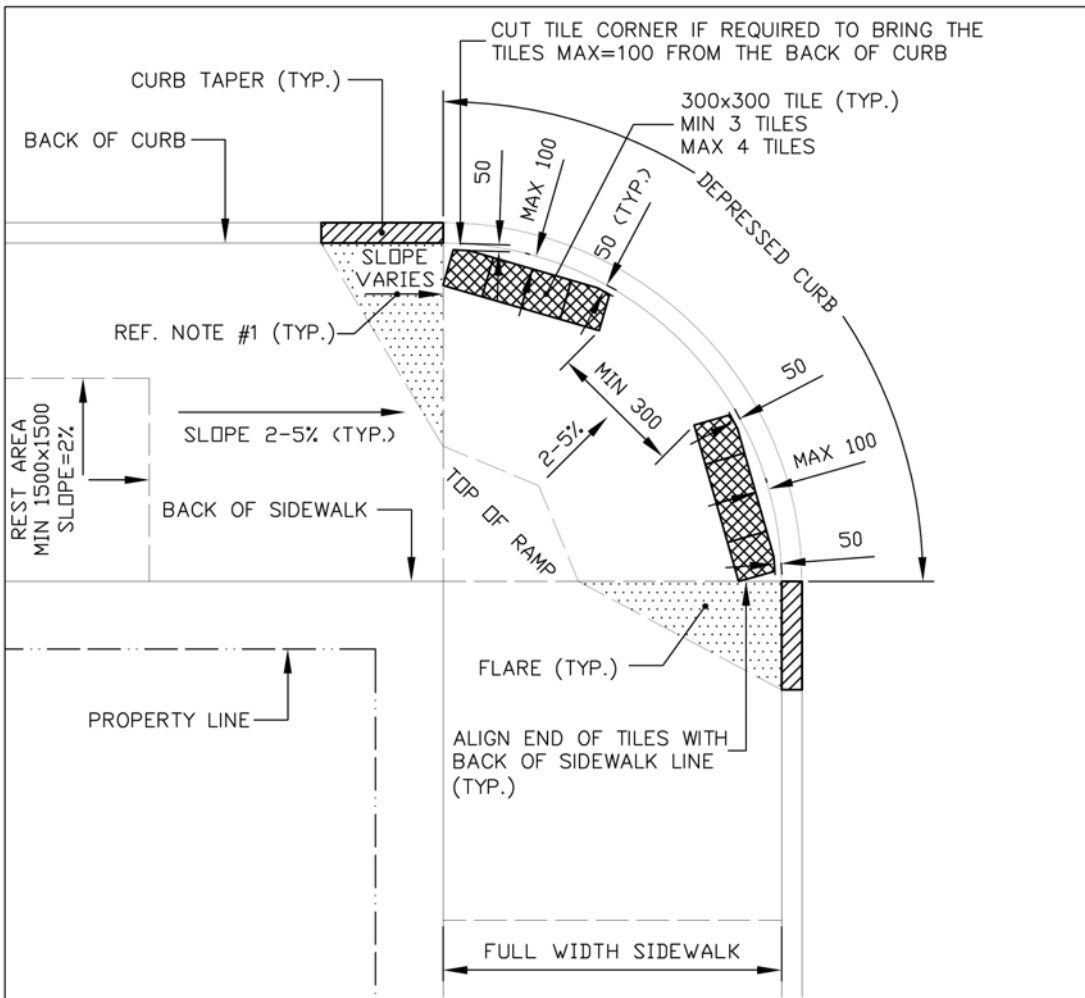


 THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT		DIMENSIONS ARE IN MILLIMETRES	
Reference Spec. No. CW 3235, CW 3310, CW 3325 E-SUPPLY & INSTALL DETECTABLE WARNING SURFACE		Designed By: B.P.	Drawn By: T.G.A.
DETECTABLE WARNING SURFACE TILE SURFACE IN CURB RAMPS FOR INTERSECTIONS. LAYOUT OPTION 1		Checked By: F.W.C.	Date: 11-02-10
		Scale : N.T.S.	
		Drawing No. SDE-229AA	
Approved:			



NOTES:
 1. PLACE 300x300 DETECTABLE WARNING SURFACE TILES IN ACCORDANCE WITH "SELECTION OF LAYOUT OPTIONS" IN THIS SPECIFICATION.

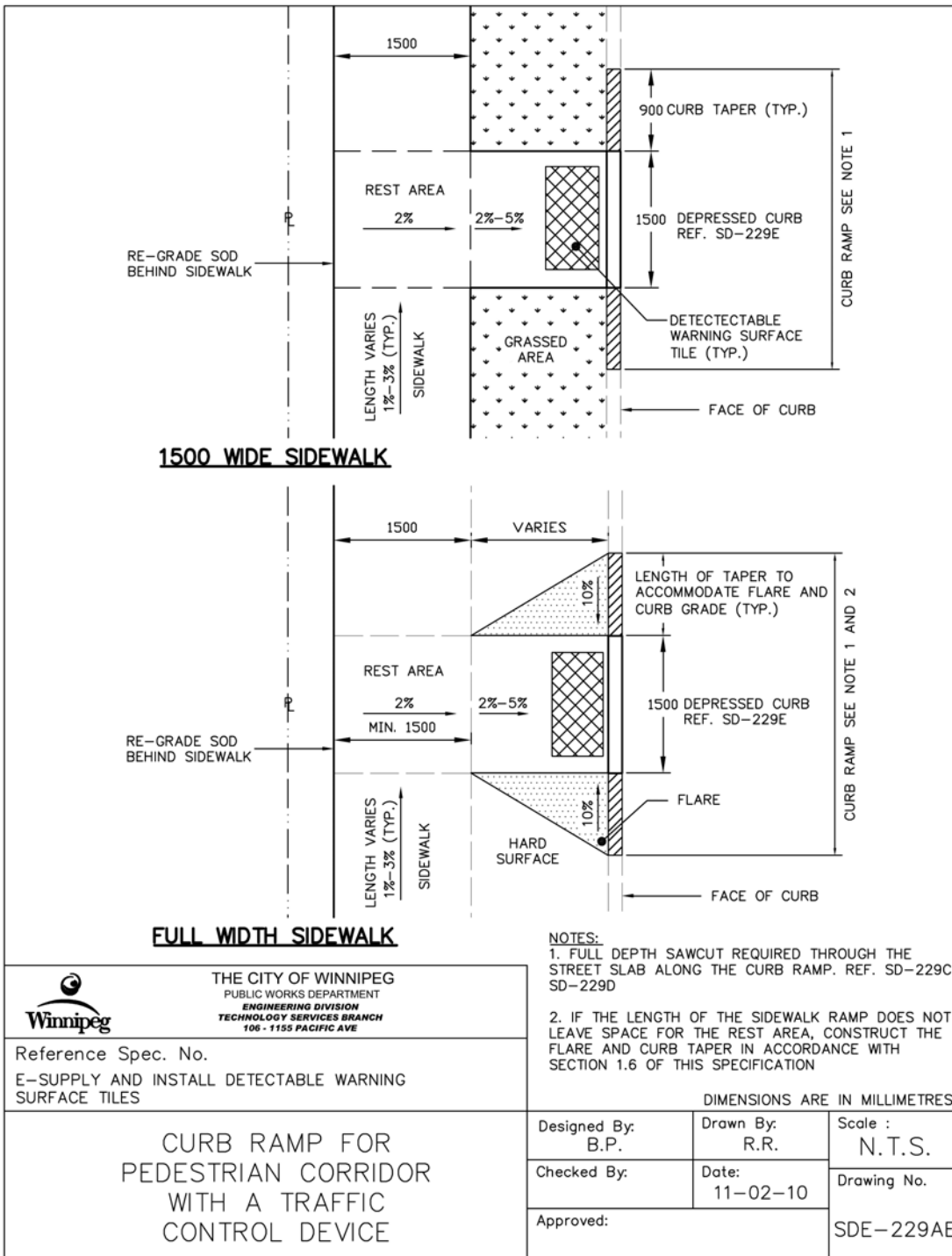
 THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT	DIMENSIONS ARE IN MILLIMETRES		
	Reference Spec. No. E-SUPPLY AND INSTALL DETECTABLE WARNING SURFACE TILES	Designed By: B.P.	Drawn By: R.R.
300 X 300 mm DETECTABLE WARNING SURFACE TILE LAYOUT OPTION 3	Checked By:	Date: 11-02-10	Drawing No.
	Approved:	SDE-229AC	




NOTES:
 1. WHEN THE SIDEWALK AREA AT THE TOP OF THE RAMP IS $\geq 1500\text{mm}$ OR $< 1500\text{mm}$ IN WIDTH, CONSTRUCT THE SLOPE OF THE CURB RAMP AND THE CURB TAPER IN ACCORDANCE WITH SECTION 1.6 OF THIS SPECIFICATION.

 <p>THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION TECHNOLOGY SERVICES BRANCH 106 - 1155 PACIFIC AVE</p>	Reference Spec. No. E-SUPPLY AND INSTALL DETECTABLE WARNING SURFACE TILES		
	<p>300x300mm DETECTABLE WARNING SURFACE TILE LAYOUT OPTION 3 DETAIL</p>		

DIMENSIONS ARE IN MILLIMETRES		
Designed By: B.P.	Drawn By: R.R.	Scale : N.T.S.
Checked By:	Date: 11-02-10	Drawing No.
Approved:		SDE-229AD




 THE CITY OF WINNIPEG
 PUBLIC WORKS DEPARTMENT
 ENGINEERING DIVISION
 TECHNOLOGY SERVICES BRANCH
 106 - 1155 PACIFIC AVE

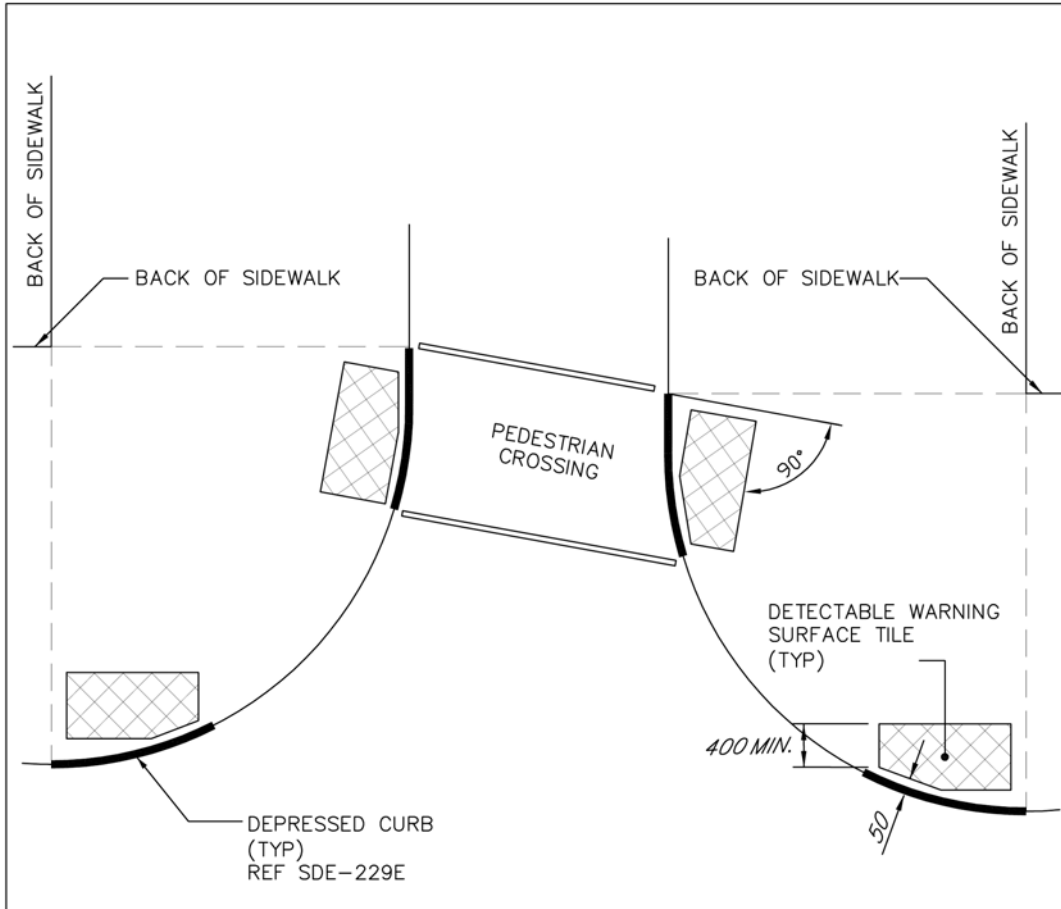
Reference Spec. No.
 E-SUPPLY AND INSTALL DETECTABLE WARNING SURFACE TILES

1. FULL DEPTH SAWCUT REQUIRED THROUGH THE STREET SLAB ALONG THE CURB RAMP. REF. SD-229C, SD-229D


2. IF THE LENGTH OF THE SIDEWALK RAMP DOES NOT LEAVE SPACE FOR THE REST AREA, CONSTRUCT THE FLARE AND CURB TAPER IN ACCORDANCE WITH SECTION 1.6 OF THIS SPECIFICATION

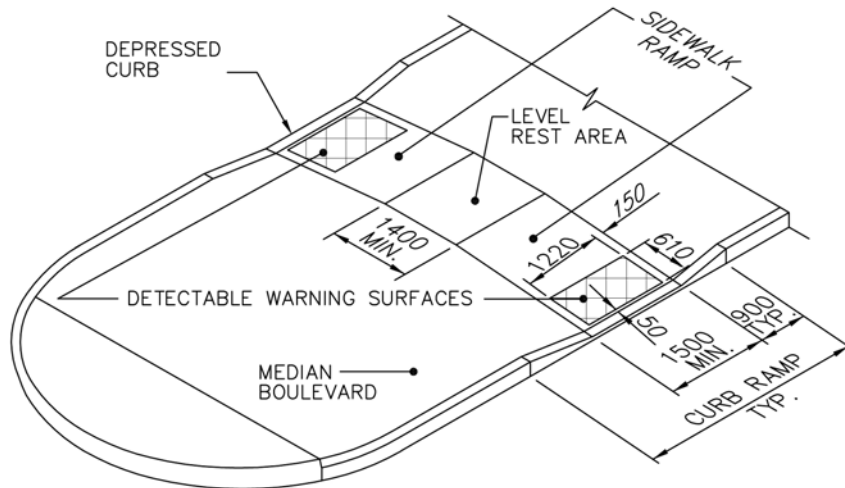
DIMENSIONS ARE IN MILLIMETRES

Designed By: B.P.	Drawn By: R.R.	Scale: N.T.S.
Checked By:	Date: 11-02-10	Drawing No.
Approved:	SDE-229AE	



- NOTES:**
 1. LOCATE END OF DEPRESSED CURB IN LINE WITH PROJECTED BACK OF SIDEWALK.
 2. CONSTRUCT FLARES IN ACCORDANCE WITH SDE-229A


 THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT		
Reference Spec. No. CW 3235, CW 3310, CW 3325 E-SUPPLY & INSTALL DETECTABLE WARNING SURFACE TILES		
DIMENSIONS ARE IN MILLIMETRES		
DETECTABLE WARNING SURFACE TILE ORIENTATION FOR OFFSET INTERSECTIONS	Designed By: B.P.	Drawn By: T.G.A.
	Checked By: F.W.C.	Date: 11-02-10
	Approved:	
		Scale : N.T.S. Drawing No. SDE-229AF

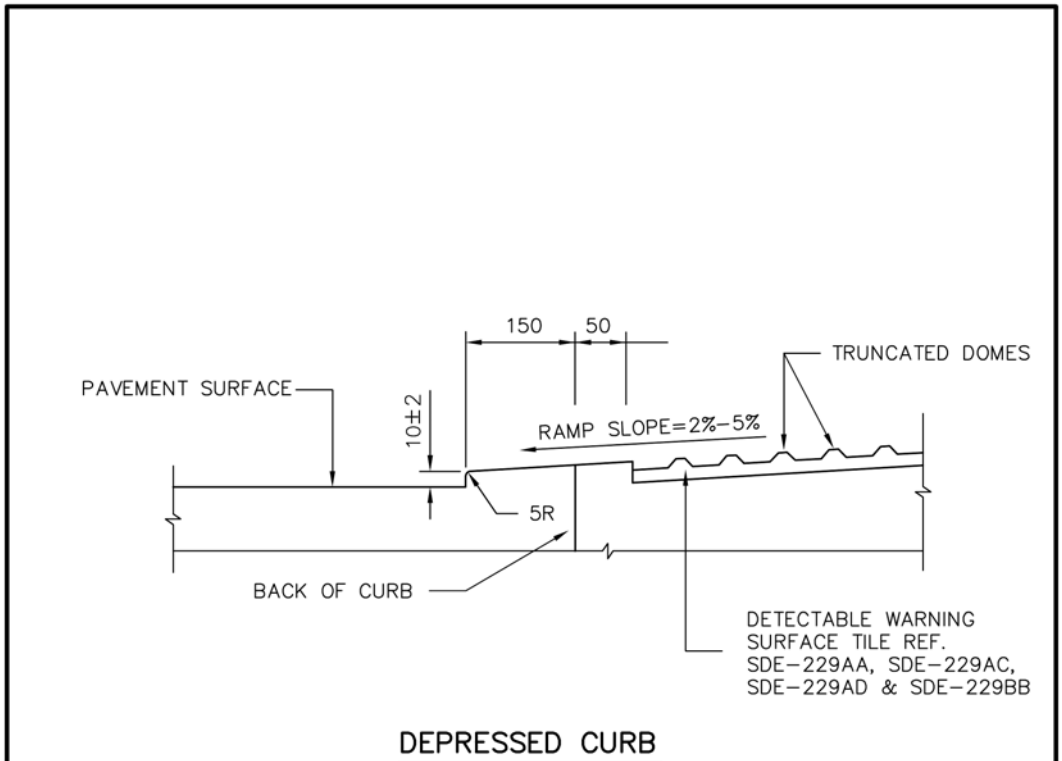


MEDIAN SIDEWALK CROSSING
 (REF. SD-229B)

NOTE:


- FOR NARROW MEDIANS AND REFUGE ISLANDS < 1.32m IN WIDTH, PLACE DETECTABLE WARNING SURFACE FULL WIDTH, MAINTAINING 50mm SPACING FROM BACK OF CURB.

 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.
DETECTABLE WARNING SURFACE TILE IN CURB RAMPS FOR MEDIANS	Checked By: F.W.C.	Date: 11-02-10	Drawing No. SDE-229BB
	Approved:		



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 FO THE ADJACENT 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.
CURB RAMP DEPRESSED CURB	Checked By: F.W.C.	Date: 11-02-10	Drawing No. SDE-229E
	Approved:		

INSTALLATION INSTRUCTIONS FOR 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. Do not set Cast in Place tiles in asphaltic concrete.
- (c) The physical characteristics of the concrete shall be consistent with the contract specifications. An overly wet mix will cause the tile to float. Under these conditions, suitable weights such as 2 concrete blocks or sandbags (12 kg) 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, 12 kg 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 can be employed, if desired. The vibrating unit should be fixed to a soft base such as wood, at least 0.3m 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. The tile shall be placed in accordance with the contract drawings.
- (i) The Cast In Place Detectable/Tactile Warning Surface Tiles shall be tamped (or vibrated) into the fresh concrete to ensure that the surface of the truncated domes are flush to the adjacent concrete surface. Embedment of the tile so the top of the truncated domes are flush with the adjacent concrete will reduce the possibility of damage due to snow clearing operations. 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.
- (j) While concrete is workable, a 3/8" radius edging tool shall be used to create a finished edge of concrete, a steel trowel shall then be used to finish the concrete around the tile's perimeter.
- (k) 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.
- (l) Following tile placement, review installation tolerances to contract drawings and adjust tile before the concrete sets. Two suitable weights of 12kg each shall be placed on each tile as necessary to ensure solid contact of the underside of tile to concrete.
- (m) 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.
- (n) If required, individual tiles can be bolted together using ¼ 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.

- (o) Tiles can be cut 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.

E14. SAWCUTTING

E14.1 Further to CW 3240-R8, the Contractor will be required to sawcut the existing concrete pavement or sidewalk full depth as follows:

- (a) Transversally across Logan Avenue at the east and west reconstruction limit.
- (b) Longitudinally on Logan Avenue for the full length of the project to separate Stage 1 Pavement Removal from Stage 2 Pavement Removal.
- (c) Longitudinally, as required, along the sidewalk on the north side of Logan Avenue to separate sidewalk required to remain, from sidewalk removed for the temporary asphalt paving.
- (d) Longitudinally along westbound Logan Avenue for construction of right turn yield and westbound through lane west of McPhillips Street.

E14.2 All costs in connection with the above sawcutting are incidental and shall be included in the Contract Unit Price for "Removal of Existing Pavements, i) Concrete" and "Miscellaneous Concrete Slab Removal, i) Sidewalk".

E15. CONCRETE PAVEMENT JOINTS

E15.1 Further to CW 3310-R14, Portland Cement Concrete Pavement Works, Clause 9.3, all transverse and longitudinal concrete pavement joints shall be sand-cleaned or approved equal using sand blasting equipment of a type approved by the Contract Administrator and capable of removing any dirt, loose material, form release agents, curing compound, cement residue or any foreign materials which might prevent bonding. The sandblasting nozzle shall be mounted on a mechanical frame on wheels and shall direct the sand spray towards the face of the pavement joint at an angle of 30 degrees to the face of the joint. Both faces of the pavement joint shall be cleaned in this manner.

E15.2 Immediately prior to the sealing operation, the joint shall be cleaned and blown dry with compressed air that is water and oil free with a minimum pressure of 0.6 MPa (90 Psi). The joint must be surface dry at the time of filling and the ambient temperature must be at least 4 degrees C. and rising.

E15.3 All costs associated with the sand cleaning shall be incidental to the applicable type of pavement construction.

E16. ADJUSTMENT OF EXISTING CATCHBASINS

E16.1 Further to CW 3210-R7, Adjustment or Abandonment of Existing Pavement and Boulevard Structures and Appurtenances, the Contractor shall be required to adjust the existing catchbasin frames in the north boulevard of Logan Avenue, within the limits of the temporary asphalt pavement, to the elevation of the temporary asphalt pavement. The Contractor shall supply grated manhole covers for installation on the adjusted catchbasin frames. Upon removal of the temporary asphalt pavement and abandonment of the existing catchbasins, the Contractor shall deliver the grated manhole covers to a City of Winnipeg Yard as directed by the Contract Administrator. There shall be no measurement or payment made for removal and delivery of the grated manhole covers. This work shall be considered incidental to the "Adjustment of Existing Catchbasins/Manholes.

E17. EXCAVATION

E17.1 Further to CW3110-R14, all excavation on this project shall be performed with backhoe type equipment.

E18. INSULATION IN SUBDRAIN TRENCHES AND CATCHBASIN EXCAVATIONS

E18.1 Description

E18.1.1 General

- (a) This specification shall cover the placement of insulation in subdrain trenches and catchbasin excavations identified by the Contract Administrator. Insulation shall be required in the bottom of subdrain trenches and catchbasin excavations, which occur longitudinally along the north and south gutters of Logan Avenue, within project limits.

E18.1.2 Definitions

- (a) Insulation in subdrain trenches and catchbasin excavations – insulation to be installed in the bottom of subdrain trenches and catchbasin excavations prior to installation of the subdrains or catchbasins to prevent frost penetration.

E18.2 Referenced Standard Construction Specifications

E18.2.1 CW 2030 – Excavation, Bedding and Backfill

E18.2.2 CW 2130 – Gravity Sewers

E18.2.3 CW 3120 – Installation of Subdrains

E18.3 Referenced Standard Details

E18.3.1 SD 024 Catchbasin with Curb and Gutter Inlet

E18.3.2 SD 025 Standard Catchbasin

E18.3.3 SD 245 Subdrain Installation Detail

E18.4 Materials

E18.4.1 Insulation

- (a) Insulation shall be 50 mm thick Styrofoam HI-40 Brand extruded polystyrene sheets or approved equal.

E18.5 Sand

E18.5.1 Sand shall be supplied in accordance with Section 2.1 of CW 2030.

E18.6 Construction Methods

E18.6.1 Excavation

- (a) Excavate for the catchbasins and subdrains in accordance with CW 2130 and CW 3120.

E18.7 Installation of Insulation

E18.7.1 Place insulation one sheet in thickness on the bottom of the subdrain trench or catchbasin excavation. The insulation shall extend the full length of the subdrain trench and cover the entire bottom of the catchbasin excavation. Ensure that the bottom of the trenches are trimmed smooth to allow the insulation to lay flat on the bottom. Utilize sand bedding to correct any deformities in the base of the subdrain trench as required. Place the insulation in the catchbasin excavations on 50 mm of sand bedding, following which, place the sand bedding as specified in SD 024 or SD 025 for the catchbasin.

E18.8 Installation of Subdrains

E18.8.1 Following installation of the insulation, install subdrains in accordance with CW 3120 and SD 245.

E18.9 Installation of Catchbasins

E18.9.1 Following installation of the insulation, install catchbasins in accordance with CW 2130 and SD 024 and SD 025.

E18.10 Measurement and Payment

E18.10.1 Insulation in Subdrain Trenches and Catchbasin Excavations

- (a) Insulation in subdrain trenches and catchbasin excavations will be measured on an area basis and paid for at the Contract Unit Price per square metre for insulation in subdrain trenches and catchbasin excavations. The area to be paid for will be the total number of square metres of insulation installed in accordance with this specification, accepted and measured by the Contract Administrator.

E19. CONCRETE CURB

E19.1 Further to CW 3240 – R8 and CW 3310 – R14, the Contractor shall construct modified barrier curb on side-street and private approach turnouts in conjunction with monolithic curb and sidewalk. Slope faced bullnoses will be constructed on island bullnoses and monolithic median slab as directed by the Contract Administrator.

E19.2 Further to CW 3240 – R8 and CW 3310 – R14, the Contractor shall not be allowed to drill into the new roadway slab to brace curb face forms for new monolithic curb and sidewalk.

E19.3 All costs associated with construction of slope faced bullnoses at locations of “Construction of Monolithic Concrete Median Slab”, or construction of modified barrier curb at locations of “Construction of Monolithic Concrete Curb and Sidewalk” are considered incidental to the “Construction of Monolithic Concrete Median Slab” and “Construction of Monolithic Concrete Curb and Sidewalk” and no additional payment shall be made.

E20. EXISTING STREET CAR TRACK BEDDING

E20.1 Description

E20.1.1 General

- (a) This Specification covers the removal of existing street car track bedding on Logan Avenue within project limits.

E20.2 Definitions

E20.2.1 Street Car Track Bedding – The concrete bedding, including wooden ties, for the two sets of street car tracks previously located in the centre lanes of Logan Avenue. The concrete bedding is estimated to be approximately 2.7 metres wide by 0.6 metres thick.

E20.3 Referenced Standard Construction Specifications

E20.3.1 CW 1130 – Work Site Requirements.

E20.4 Construction Methods

E20.4.1 Removal of Existing Street Car Track Bedding

- (a) Remove the existing concrete bedding by demolishing, loading, hauling and disposing of the existing concrete bedding, including ties and any other materials encountered from the site.

E20.4.2 Due to the requirement for staged pavement construction take appropriate measures such as sawcutting or pneumatic breaking, as approved by the Contract Administrator, to ensure

that sections of bedding under adjacent traffic lanes required to remain in service are not removed, until use of the adjacent lane is no longer required.

E20.4.3 Dispose of the removed bedding in accordance with Section 3.4 of CW 1130.

E20.5 Measurement And Payment

E20.5.1 Removal of Existing Street Car Track Bedding

- (a) Removal of Existing Street Car Track Bedding shall be measured on a cubic metre basis. The number of cubic metres paid for shall be the total number of cubic metres of street car track bedding removed, in accordance with this Specification, as accepted and measured by the Contract Administrator.

E21. ASPHALT PATCHING OF FULL DEPTH CONCRETE REPAIRS

E21.1 Description

E21.1.1 General

- (a) This specification covers the construction of asphalt patches over full depth concrete joint repairs on streets to be resurfaced where the entire existing asphalt overlay is not removed.

E21.1.2 Referenced Standard Construction Specification

- (a) CW 3410-R8 – Asphaltic Concrete Pavement Works

E21.2 Asphalt Materials

E21.2.1 Asphalt material supplied shall be as per CW 3410-R8 Clause 5, 6 and 7 for Type 1A asphalt.

E21.3 Equipment

E21.3.1 Equipment

- (a) Equipment as per CW 3410-R7 Clause 8.

E21.4 Construction Methods

E21.4.1 Full Depth concrete Repairs

- (a) Place asphaltic concrete over the newly constructed joint repair where there is a minimum of 35 mm of existing overlay remaining. Remove any loose or debonded asphalt at the joint perimeter and place new asphaltic concrete in these areas as well.
- (b) Dispose of all material in accordance with Section 3.4 of CW 1130.
- (c) Prior to placement of asphaltic concrete patching material ensure surface is clean and dry.
- (d) Prepare the joint surface with a uniform application of Tack Coat applied in small quantities sufficient to wet the concrete surface.
- (e) Place and compact asphaltic concrete over the joint repair in accordance with CW 3410 Clause 9.3 and to the satisfaction of the Contract Administrator so that the finished elevation of the patch is flush with surrounding asphalt surface.
- (f) Compact the asphalt material to an average 95% of the 75 blow Marshall Density of the paving mixture with no individual test being less than 90%.
- (g) Ensure that no traffic is allowed to cross the patched area until the asphalt has cooled to atmospheric temperature.

E21.5 Partial Depth Concrete Repairs

E21.5.1 Prior to placement of asphaltic concrete patching material blow planed area clean, remove any loose material and ensure the surface is dry.

- E21.5.2 Prepare the planed surface with a uniform application of Tack Coat applied in small quantities sufficient to wet the concrete surface.
- E21.5.3 Place and compact asphaltic concrete in the planed area in accordance with CW 3410 Clause 9.3 and to the satisfaction of the Contract Administrator so that the finished elevation of the patch is flush with surrounding pavement surface.
- E21.5.4 Compact the asphalt material to an average 95% of the 75 blow Marshall Density of the paving mixture with no individual test being less than 90%.
- E21.5.5 Ensure that no traffic is allowed to cross the patched area until the asphalt has cooled to atmospheric temperature.
- E21.6 Measurement and Payment
- E21.6.1 Asphalt Patching of Full-Depth Concrete Repairs
- (a) Asphalt Patching of Full-Depth Concrete Repairs will be measured on a weight basis and paid for a the Contract Unit Price per tonne for “Asphalt Patching of Full-Depth Concrete Repairs”. The weight to be paid for will be the total number of tonnes of asphalt placed and compacted in accordance with this Specification and accepted by the Contract Administrator, as measured on a certified weigh scale.

E22. REMOVAL AND SALVAGE OF BANNER POLES

E22.1 Description

- E22.1.1 This Specification shall cover the removal and salvage of the existing banner poles on the northwest corner of Logan Avenue and McPhillips Street.
- E22.1.2 The work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E22.2 Material

E22.2.1 Storage and Handling

- (a) All materials shall be handled and stored in a careful and workmanlike manner to the satisfaction of the Contract Administrator.
- (b) Any damaged or missing material or components resulting from handling and storage operations shall be replaced at the Contractor’s expense, to the satisfaction of the Contract Administrator.

E22.3 Construction Methods

E22.3.1 Pre-Removal Inspection

- (a) Prior to the removal and dismantling of the banner poles, the Contractor and Contract Administrator shall jointly inspect the poles taking note of any damage above ground level.
- (b) The banner poles shall be carefully dismantled in a workmanlike manner. Material damaged through negligent operations shall be replaced by the Contractor at his expense.
- (c) The existing banner poles are mounted on “screw-in” metal foundations. The foundations shall be removed with equipment appropriate to these types of foundations and shall not be removed by pulling from the ground with a chain and backhoe or loader.

E22.3.2 Salvaged Banner Poles

- (a) All surplus salvaged material (poles and foundations) shall be delivered to 1277 Pacific Avenue. Contact Andrew Stecy at (204) 224-2152 to arrange a suitable time and date for delivery.
- (b) The salvaged material shall be properly placed in the yard at a location determined by City personnel in a manner accepted by the City.

E22.4 Measurement and Payment

- E22.4.1 The removal and salvage of the existing banner poles will be measured on a unit basis and will be paid for at the Contract Unit Price for "Removal and Salvage of Existing Banner Poles". The number of banner poles paid for shall be the total number of banner poles removed and salvaged in accordance with this Specification, accepted and measured by the Contract Administrator.

E23. ADJUSTMENT OF SPRINKLER HEADS

E23.1 Description

- E23.1.1 Further to CW 3210, this specification covers the adjustment of existing sprinkler heads within the City of Winnipeg right-of-way to match proposed boulevard grading requirements.

E23.2 Materials

E23.2.1 Sprinkler Heads and Irrigation Piping

- (a) Existing sprinkler heads and irrigation piping to be reused.
- (b) If, in the opinion of the Contract Administrator, new irrigation piping is required it shall be Series 100, High Density Polyethylene pipe and conform to CSA B137.0 and B137.1, CGSB-41-GP-25m and ASTM D-1248-78. Fittings shall be approved brass saddle fittings at head connections and socket-fusion external fittings at pipe connections. All fittings will be sized to fit pipe diameter and of a pressure rating equal to or better than adjacent pipe. Three elbow swing joints shall be unplasticized schedule 80 threaded PVC pipe and schedule 40 fittings.

E23.3 Construction Methods

- E23.3.1 Contractor to locate and mark existing sprinkler heads and irrigation piping prior to undertaking any excavation of boulevards.
- E23.3.2 Contractor to verify with Owner that existing sprinkler heads and piping is functional prior to any grade adjustments.
- E23.3.3 Raise or lower existing sprinkler heads and relocate up to 2.0 metres to match finished grade of grassed area. Ensure sprinkler head is plumb and maintain existing sprinkler head direction.
- E23.3.4 Adjust existing irrigation lines to maintain existing cover requirements. The Contractor may be required to lower or raise irrigation lines or supplement with additional length of pipe. Pipe material to match or exceed existing pipe material.
- E23.3.5 Contractor is responsible to replace any damaged sprinkler heads or irrigation lines as a result of construction activities.
- E23.3.6 Upon completion of adjustments after final acceptance of sodded areas, the Contractor shall arrange for the inspection of sprinkler heads and irrigation system with the Contract Administrator to ensure proper functioning of system.
- E23.3.7 Contractor to repair any deficiencies to the satisfaction of the Contract Administrator.

E23.4 Measurement and Payment

E23.4.1 Adjustment of Sprinkler Heads

- (a) Adjustment of existing sprinkler heads will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Adjustment of Sprinkler Head". The number of units to be paid for will be the total number of existing sprinkler heads adjusted in accordance with this specification, accepted and measured by the Contract Administrator.

E23.4.2 Replace Existing Sprinkler Pipe

- (a) Replacement of existing sprinkler pipe will be measured on a linear metre basis and paid for at the Contract Unit Price for "Replace Existing Sprinkler Pipe". The length to be paid for shall be the total number of metres of pipe supplied and installed in accordance with this Specification, accepted and measured by the Contract Administrator.

E24. TREE REMOVAL

- E24.1 Further to CW 3010 - Clearing and Grubbing, tree removal including the roots shall be measured on a unit basis for the number of trees removed in accordance with CW 3010. Payment shall be at the Contract Unit Price bid for "Tree Removal" measured as specified herein for the total number of trees removed in accordance with this Specification, accepted and measured by the Contract Administrator.

E25. PARKING FENCE

E25.1 Description

- E25.1.1 This section outlines the requirement for relocation of the existing parking fence as indicated on the Drawings.

E25.2 Materials

E25.2.1 Parking Fence Rails

- (a) The Contractor shall supply and install new 150 mm x 150 mm pressure-treated brown fence rails.

E25.2.2 Parking Fence Hardware

- (a) All nuts, bolts, and washers used to relocate the fence shall be galvanized.

E25.3 Construction Methods

E25.3.1 Relocation of Fence

- (a) The Contractor shall carefully dismantle the existing fence and carefully remove and salvage the existing posts.
- (b) The Contractor shall clean all material from the posts in preparation for the reinstallation.
- (c) The Contractor shall reinstall the posts at the new location as shown on the Drawings. Post spacing to match existing.
- (d) The Contractor shall install the new fence rails on the previously installed posts. All rails to have holes pre-drilled to accept nuts and bolts.
- (e) All cut ends of rails and drill holes to be treated with wood preservative prior to installation.

E25.4 Measurement and Payment

- E25.4.1 Relocation of Parking Fence will be measured on a linear measure basis and paid for at the Contract Unit Price per metre for "Relocation of Parking Fence". The total length of parking fence paid for will be the total number of metres of fence relocated in accordance with this Specification as accepted and measured by the Contract Administrator.

E26. CP PROTECTION WORKS

- E26.1 The Contractor shall adhere to the latest edition of CP's "Minimum Safety Requirements for Contractors Working on CP Property in Canada". CP has the right to stop all work that does not comply with their Safety Requirements or that they deem is unsafe.
- E26.2 The Contractor shall at all times conduct his operations in a responsible manner to avoid damage to trackage or property on Railway right-of-way. It shall be his responsibility that all workmen and persons employed by him or his agents, or under his control shall use due care that no person or property is injured, and that no rights are infringed in the execution of the work.
- E26.3 No work that will impede railway traffic shall be undertaken without proper flagging protection. The Contractor will arrange for and provide whatever protection is deemed necessary for the type of Work involved. Should a flagman be provided for any portion of the Work, the Contractor will adhere to the instructions given by the flagman or foreman in charge.
- E26.4 The Contractor's forces shall co-operate fully with the Company flagmen in the regulation of construction machinery and manpower on the Company right-of-way. No work or entry onto the Railway right-of-way at any time shall be undertaken without proper flagging protection. The Contractor shall advise the Company 48 hours in advance of the commencement of the work.
- E26.5 The flagging foreman must be forewarned of any equipment changes or extensions of the Work limits or changes in Work shift time in order that, amongst other things, a determination can be made if additional flagging protection is required. Again, the Contractor shall advise the Company 48 working hours in advance of the commencement of these changes and no extra compensation shall be allowed when a flagman is not available within 48 hours. It will be the responsibility of the Contractor to advise the flagman at the end of each Work day of the next Work day's activities, shift times and durations, including any of the aforementioned changes.
- E26.6 The Work shall be carried out without interference to the passage of trains at their normal operating speeds. Orders restricting train speeds may be issued at the discretion of the Engineer during certain phases of the Work. The Contractor must obtain the approval of the Engineer for temporary closures of the track. Work requiring closure must have the protection of the flagman.
- E26.7 Care must be taken to ensure that no obstructions or hazards are created on the Company's tracks that will interfere with the safe passage of trains. The Contractor shall not erect or allow to be erected any structure nor place any machinery or equipment closer than 3.3m to the gauge side of the nearest rail of a track on which traffic is maintained, without prior approval of the Engineer.
- E26.8 The Contractor is responsible for the proper care and storage of work equipment at night, and at other times when equipment is not in use. All reasonable precaution must be taken to protect the equipment against unauthorized use, damage or tampering. Equipment stored on the right-of-way must be clear of the operation tracks.
- E26.9 The Contractor shall erect markers, barricades or fences as required and post signs to warn all persons working on this project and the general public not to trespass on the work site. The Contractor shall provide at his own expense all other flagmen and signage required to control access to and from public roads and to control traffic within the job site.
- E26.10 Interference with Railway Traffic – The Contractor shall not make any claim for extra payment on account of matter arising from train operations.

E26.11 It is the Contractor's responsibility to make arrangements to comply with all regulations CP Rail may have for the construction activities of the Contractor. It will also be the Contractor's responsibility to pay for these works.

E26.12 A CP contact for clarification is:

Mr. Dale Wilson
Specialist – Public Works
Canadian Pacific
901 Logan Avenue
Winnipeg, MB R3T 1N7
Ph: (204)946-3631
Fax: (204)927-4666
Email: Dale_Wilson@cpr.ca

E26.13 Measurement and Payment

E26.13.1 CP Protection Works will be paid for at the Contract Unit Price per day to a maximum of 15 days for "CP Protection Works", which price shall be payment in full or all works related to CP Protection Works.

E27. OPERATING CONSTRAINTS FOR WORK IN CLOSE PROXIMITY TO THE FEEDERMAINS

E27.1 Description

E27.1.1 This Section details operating constraints for all work to be carried out in close proximity to feeder mains. Close proximity shall be deemed to be any construction activity within a 5 m offset from the centreline of the feeder main.

E27.2 General Considerations for Work in Close Proximity to Feeder mains

E27.2.1 The feeder mains are a critical component of the City of Winnipeg Regional Water Supply System and work in close proximity to the pipeline shall be undertaken with an abundance of caution. The pipe cannot be taken out of service for extended periods to facilitate construction and inadvertent damage caused to the pipe would likely have catastrophic consequences.

Work around the feeder mains shall be planned and implemented to minimize the time period that work is carried out in close proximity to the pipe and to ensure that the pipeline is not subjected to excessive construction related loads, including excessive vibrations and/or concentrated or asymmetrical lateral loads during backfill placement.

E27.2.2 There are several feeder mains and Aqueducts in the vicinity of this project including the Branch I Aqueduct, McPhillips Feeder main, St. James Feeder main and several other sub-feeder mains. The pipelines are constructed of concrete pressure pipe, Prestressed Concrete Cylinder Pipe, Asbestos Cement (AC), cast iron and PVC ranging in vintage from early 1900's to 2010.

E27.2.3 Generally, for thin bituminous overlays, there will be little risk posed to the pipelines, but certain aspects of construction including joint and slab repairs, repairs and installation of drainage appurtenances, and extended vibration of asphaltic concrete directly over pipelines can impose additional stresses on these pipelines, and specifically, loosening on pipe jointing materials including copper water stops, lead caulked joints and aged rubber gasketed joints.

E27.3 Submittals

E27.3.1 Where slab and joint repairs or installation of drainage appurtenances are in close proximity to pipelines, submit a Construction Method Statement with proposed construction plan including haul routes, excavation equipment locations, loading positioning and base construction sequencing, to the Contract Administrator for review seven (7) days prior to

construction. Do not commence construction until the Construction Method Statement has been reviewed and accepted by the Contract Administrator.

E27.4 Protection of Feeder mains During Construction

E27.4.1 Contractors carrying out repair work or working in close proximity to the feeder main shall meet the following conditions and technical requirements:

(a) Pre-Work, Planning and General Execution

- (i) No work shall commence at the site until the Equipment Specifications and Construction Method Statement have been submitted and accepted, and the feeder main location has been clearly delineated in the field. Work over the feeder main shall only be carried out with equipment that has been reviewed and quantified in terms of its loading implications on the pipe. All proposed construction equipment must be submitted to Contract Administrator for review prior to construction. Work in areas in close proximity to the feeder main shall only be carried out with equipment that has been reviewed and quantified in terms of its loading implications by the Contract Administrator.
- (ii) Contact the City of Winnipeg WWD Department, Construction Services Coordinator (Andy Vincent) prior to construction involving removal and placement of pavement slab and joint repairs or installation of drainage appurtenances.
- (iii) Notify WWD well in advance of construction to coordinate required service interruptions
- (iv) Crossings of the feeder main is prohibited in the time period from removal of existing pavement until the completion of granular base construction. At all times prior to completion of final paving; reduce equipment speeds to levels that minimize the effects of impact loading to the pipe
- (v) For construction work activities either longitudinally or transverse to the alignment of the feeder main, work only with equipment and in the manner stipulated in the accepted Construction Method Statement and the supplemental requirements noted herein.
- (vi) Construction operations should be staged in such a manner as to limit multiple construction loads at one time, (e.g. offset crossings sufficiently from each other, rollers should remain a sufficient distance behind spreaders to limit loads. A reasonable offset distance is 3m between loads).
- (vii) The contractor and all site supervisory personnel and equipment operators have to be formally briefed to ensure that they are fully cognizant of the associated restrictions, constraints, and risks associated with working adjacent to and over this pipeline. New personnel introduced after commencement of the project need to be formally orientated as to the significance and constraints associated with working over the feeder main.

(b) Demolition and Excavation

- (i) Use of pneumatic concrete breakers within 3 metres of feeder mains is prohibited. Pavement shall be full depth sawcut and carefully removed. Use of hand held jackhammers for pavement removal will be allowed.
- (ii) Where there is less than 1.6 metres of earth cover over the feeder main and further excavation is required either adjacent to or over the feeder main, utilize only smooth edged excavation buckets, soft excavation or hand excavation techniques. Where there is less than 1 metre of cover over the feeder main, carefully expose the feeder main by hand excavation to delineate the location and depth of the main, and provide full time supervision of the excavation.
- (iii) Where there is less than 2.5 m of earth cover over the feeder mains, offset backhoe or excavation equipment from feeder main, a minimum of 3 m from feeder main centerline, to carry out excavation.
- (iv) Equipment should not be allowed to operate while positioned directly over the feeder main.

(c) Subgrade Construction

- (i) Subgrade compaction shall be prohibited within 2 metres of the feedermain. Subgrade compaction within 3 metres of the feedermain shall be limited to non vibratory methods only.
 - (ii) Subgrade, sub-base and base course construction shall be kept in a rut free condition at all times. Construction equipment is prohibited from crossing pipelines if the grade is insufficient to support the equipment without rutting.
 - (iii) Subgrade conditions should be inspected by personnel with competent geotechnical experience (e.g. ability to adequately visually classify soils and competency of subgrade, subbase, and base course materials). In the event of encountering unsuitable subgrade materials above the feedermain, proposed design revisions shall be submitted to this office for review to obtain approval from the Water and Waste Department relative to any change in conditions.
 - (iv) Construction operations shall be staged to minimize the time period between excavation to subgrade and placement of granular subbase materials. Should bare subgrade be left overnight, measures shall be implemented to protect the subgrade against inadvertent travel over it and to minimize the impact of wet weather.
- (d) Subbase and Base Course Construction
- (i) Granular material, construction material, soil or other material shall not be stockpiled on the pipelines or within 5 metres of the pipe centerline.
 - (ii) Subbase or base course materials shall not be dumped directly on pipelines but shall be stockpiled outside limits noted in these recommendation and shall be carefully bladed in-place.
 - (iii) Subbase compaction within 3 metres of the centreline of the feedermain shall be either carried out by static methods (without vibration) or with smaller approved equipment such as hand held plate packers or smaller roller equipment.
- (e) Asphaltic Concrete Overlays
- (i) When installing asphaltic concrete overlays over critical locations, including The Branch I Aqueduct at Pacific Avenue, non-vibratory compaction only should be used within 3 metres of the centre of the pipeline.

E27.5 All costs associated with the work in close proximity to the feedermain shall be incidental to the applicable type of pavement construction and no additional payment shall be made.

Figure 1: AWWA C301 - 600 mm Class 14 Loading Curves

