



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 165-2010**

**EDMONTON STREET WEST SIDEWALK STREETScape - PORTAGE AVE. TO  
GRAHAM AVE.**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 EDMONTON STREET WEST SIDEWALK STREETScape – PORTAGE AVE. TO GRAHAM AVE.

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, June 22, 2010.

B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.

B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

### **B3. SITE INVESTIGATION**

B3.1 The bidder may view the site without making an appointment.

### **B4. ENQUIRIES**

B4.1 All enquiries shall be directed to the Contract Administrator identified in 4.1.

B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

### **B5. ADDENDA**

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

B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>

B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

**B6. SUBSTITUTES**

B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.

B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.

B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.

B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:

- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
- (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
- (c) identify any anticipated cost or time savings that may be associated with the substitute;
- (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
- (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.

B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.

B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.

B6.6.3 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.

B6.7 If the Contract Administrator approves a substitute as an "approved equal", any Bidder may use the approved equal in place of the specified item.

B6.8 If the Contract Administrator approves a substitute as an "approved alternative", any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.

B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

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

## **B7. BID COMPONENTS**

B7.1 The Bid shall consist of the following components:

- (a) Form A: Bid;
- (b) Form B: Prices;
- (c) Bid Security
  - (i) Form G1: Bid Bond and Agreement to Bond, or  
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or  
a certified cheque or draft;

B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.

B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.

B7.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.

B7.4.4 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.

B7.5 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.

B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B15.1(a).

B7.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B7.8 Bids shall be submitted to:

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

## **B8. BID**

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

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

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

B8.2.5 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.

- B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B8.4 Paragraph 12 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
  - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
  - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
  - (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B8.4.6 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.
- B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

## **B9. PRICES**

- B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

## **B10. QUALIFICATION**

- B10.1 The Bidder shall:
- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and
  - (b) be financially capable of carrying out the terms of the Contract; and
  - (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.
- B10.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>
- B10.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) have successfully carried out work similar in nature, scope and value to the Work; and
  - (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and

- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);

B10.4 Further to B10.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:

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

B10.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B10.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

## **B11. BID SECURITY**

B11.1 The Bidder shall provide bid security in the form of:

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

B11.1.7 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.

B11.1.8 All signatures on bid securities shall be original.

B11.1.9 The Bidder shall sign the Bid Bond.

B11.1.10 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.

B11.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

B11.2.11 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B11.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B11.2.12 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.



B11.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

## **B12. OPENING OF BIDS AND RELEASE OF INFORMATION**

B12.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.

B12.1.13 Bidders or their representatives may attend.

B12.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/default.stm>

B12.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/default.stm>

B12.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

## **B13. IRREVOCABLE BID**

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

B13.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

## **B14. WITHDRAWAL OF BIDS**

B14.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B14.1.14 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

B14.1.15 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

B14.1.16 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

- (a) retain the Bid until after the Submission Deadline has elapsed;
- (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
- (c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Bid withdrawn.

B14.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B13.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

## **B15. EVALUATION OF BIDS**

B15.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation there from (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B6.

B15.2 Further to B15.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.

B15.3 Further to B15.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.

B15.4 Further to B15.1 (c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B15.4.17 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B15.4.18 Further to B15.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

## **B16. AWARD OF CONTRACT**

B16.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B16.2.19 Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:

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

**B16.3** Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B15.

## **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.
- C0.1.20 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](http://www.winnipeg.ca/matmgt/gen_cond.stm)
- C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

## **PART D - SUPPLEMENTAL CONDITIONS**

### **GENERAL**

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

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

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

D2.1 The Work to be done under the Contract shall consist of streetscaping in the following areas:

- (a) The west sidewalk of Edmonton Street between Graham Avenue to the south and Portage Avenue to the north.

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

- (a) Demolition of sidewalk and roadway pavements and construction of widened sidewalk;
- (b) Installation of concrete unit pavers;
- (c) Installation of bases for new street lights;
- (d) Supply and installation of site furnishings;
- (e) Planting and landscape maintenance.

#### **D3. CONTRACT ADMINISTRATOR**

D3.1 The Contract Administrator is Hilderman Thomas Frank Cram, represented by:

Glen Manning  
Principal  
500-115 Bannatyne Avenue East  
Winnipeg, MN R3B 0R3  
Telephone No. (204) 944-9907  
Facsimile No. (204) 957-1467

D3.2 At the pre-construction meeting, Glen Manning 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.

#### **D5. NOTICES**

D5.1 Except as provided for in C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.

D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3, D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.

D5.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:

The City of Winnipeg  
Chief Financial Officer  
Administration Building, 3rd Floor  
510 Main Street  
Winnipeg MB R3B 1B9  
Facsimile No.: (204) 949-1174

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

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

## **D6. FURNISHING OF DOCUMENTS**

- D6.1 Upon award of the Contract, the Contractor will be provided with five (5) complete sets of the Bid Opportunity. If the Contractor requires additional sets of the Bid Opportunity, they will be supplied to him at cost.

## **SUBMISSIONS**

### **D7. AUTHORITY TO CARRY ON BUSINESS**

- D7.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

### **D8. SAFE WORK PLAN**

- D8.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D8.2 The Safe Work Plan should 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 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) all risks course of construction insurance in the amount of one hundred percent (100%) of the total Contract Price, written in the name of the Contractor and The City of Winnipeg, at all times during the performance of the Work and until the date of Total Performance.

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 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.

D10.1.21 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 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 but in no event later than the date specified in 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 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 C4.1 for the return of the executed Contract.

## **D12. DETAILED WORK SCHEDULE**

D12.1 The Contractor shall provide the Contract Administrator with a detailed work schedule (Form L: Detailed Work Schedule) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract..

## **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 safe work plan specified in D8;
    - (iv) evidence of the insurance specified in D9;
    - (v) the performance security specified in D10;
    - (vi) the subcontractor list specified in D11; and
    - (vii) 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.

### **D14. WORKING DAYS**

- D14.1 Further to C1.1(gg), the Contract Administrator's determination of whether or not atmospheric and Site conditions are such that a Working Day is deemed to have elapsed may be based at one time on one type of work while at another time a Working Day may be based on another type of work. When more than one type of major work is involved, the quantity of equipment that must be able to work in order to meet the requirements of a Working Day may vary considerably from that specified in the General Conditions.
- D14.2 In the event that incidental work is behind schedule which, in the opinion of the Contract Administrator, should have been or could have been carried out by the Contractor in conjunction with or immediately following work of a major type, the City hereby reserves the right to charge Working Days on the incidental work until such time as it is up to schedule.
- D14.3 When the major type of work involves restoration of the site to the condition it was prior to rainfall, Working Days shall not be charged.
- D14.4 The Contract Administrator will furnish the Contractor with a daily record for each major type of work showing various information concerning the equipment, the time it worked, could have worked and Working Days charged. This report is to be signed each day by an authorized representative of the Contractor.

### **D15. RESTRICTED WORKING HOURS**

- D15.1 Further to clause 3.10 of CW 1130, The Contractor shall require written permission 48 hours in advance from the Contract Administrator for any work to be performed between 2000 hours and 0700 hours, or on Saturdays, Sundays, Statutory Holidays and/or Civic Holidays.

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

- D16.1 Further to C 6.25 and C 8:
- (a) "other Contractors" include utilities, commercial tenants and other agencies.
- D16.2 Work by others on or near the Site will include but not necessarily be limited to:



- (a) Manitoba Hydro
- (b) City of Winnipeg Forestry Department – removal of existing tree.
- (c) City of Winnipeg Traffic Services- various works on signs.
- (d) City of Winnipeg Signals System Branch – confirm location of traffic signals.
- (e) City of Winnipeg Parking Authority – removal and relocation of parking pay station.
- (f) City of Winnipeg Streets Maintenance – coordination of salvaged unused pavers and granite curb.

D16.3 The Contract Administrator will attempt to arrange and coordinate work to be performed by others so that such work does not interfere with the Work Schedule of the Contractor. Where work by others interferes, as determined by the Contract Administrator, with the Contractor's planned work, the Contractor shall modify their plans. Unless the Contract Administrator determines there was no opportunity for the contractor to do a similar amount of work, no consideration will be made to extend the Contract time.

#### **D17. SEQUENCE OF WORK**

D17.1 Further to C 6.1, the sequence of work shall be managed to minimize disruption to businesses and traffic through the course of construction.

#### **D18. SUBSTANTIAL PERFORMANCE**

D18.1 The Contractor shall achieve Substantial Performance within 80 consecutive Working Days of the commencement of the Work as specified in D13.

D18.2 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 reinspected.

D18.3 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.

#### **D19. TOTAL PERFORMANCE**

D19.1 The Contractor shall achieve Total Performance within 100 consecutive Working Days of the commencement of the Work as specified in D13.

D19.2 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 reinspected.

D19.3 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.

#### **D20. LIQUIDATED DAMAGES**

D20.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City one thousand dollars (\$1000) per Working Day for each and every Working Day following the day fixed herein for Substantial Performance during which such failure continues.

D20.2 The amount specified for liquidated damages in D21.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Substantial Performance by the day fixed herein for same.

D20.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

#### **D21. SCHEDULED MAINTENANCE**

D21.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

(a) Maintenance of trees as specified in E13.

D21.2 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**

##### **D22. JOB MEETINGS**

D22.1 Regular 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.

D22.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

##### **D23. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)**

D23.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

#### **WARRANTY**

##### **D24. WARRANTY**

D24.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire two (2) years thereafter unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

D24.2 Notwithstanding C13.2 or D24.1, 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) the portion or portions of the work involve the supply and installation of plant material which have separate warranty requirements.

D24.2.22 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. 165-2010

EDMONTON STREET WEST SIDEWALK STREETScape - PORTAGE AVE. TO GRAHAM AVE.

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

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

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

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

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

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

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

SIGNED AND SEALED  
in the presence of:

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

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

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

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

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

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

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

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

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 165-2010  
EDMONTON STREET WEST SIDEWALK STREETSCAPE - PORTAGE AVE. TO GRAHAM  
AVE.

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

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

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

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

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

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

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

Partial drawings are permitted.

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

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

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

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

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

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

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

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

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

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

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

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







## **PART E - SPECIFICATIONS**

### **GENERAL**

#### **E1. APPLICABLE SPECIFICATIONS AND DRAWINGS**

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
	Cover Sheet
L-1.1	Existing Conditions & Demolition Plan - South
L-1.2	Existing Conditions & Demolition Plan - North
L-2.1	Layout Plan – South
L-2.2	Layout Plan – North
L-3.1	Civil Plan, Grading Plan & Profile - South
L-3.2	Civil Plan, Grading Plan & Profile - North
L-4	Planting Plan – South & North
L-5	Sections & Details
L-6	Details

#### **E2. LOCATION OF WORK**

- E2.1 Work is located along the west side of Edmonton Street between Portage Avenue and Graham Avenue. Refer to the cover sheet for more detail on the location of work.

#### **E3. LAYOUT OF WORK**

- E3.1 Further to CW 1130, Paragraph 3.15 - Stakes and Marks, the Contractor shall set all necessary control lines, benchmarks, survey elevation stakes and layout in consultation with the Contract Administrator as required.

#### **E4. PEDESTRIAN AND TRAFFIC CONTROL**

- E4.1 General Description
- E4.1.1 This Specification shall supplement Specification CW 1130 and shall cover the supply, installation, maintenance, and removal of temporary traffic and pedestrian control.
- E4.1.2 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.
- E4.2 Materials
- E4.2.1 General

- .1 All barricades, signs, flashers, and other equipment shall be in accordance with the "Manual of Temporary Control in Work Areas on City Streets."

#### E4.2.2 Snow Fence

- .1 Plastic netting, UV stabilized, high density polyethylene, international orange colour, 1.22 m height, complete with steel stakes to suit size.

#### E4.3 Construction Methods

##### E4.3.1 General

- .1 Traffic control shall be provided and staged in accordance with the "Manual of Temporary Traffic control and Work Areas on City Streets" and this Specification. No more than two (2) blocks are to be under construction at one time, unless otherwise approved by the Contract Administrator.
- .2 The Contractor shall maintain safe pedestrian access to buildings within the area under construction at all times.
- .3 The Contractor will be responsible for the placement of all required signing and barricades, for traffic control in the construction area.

##### E4.3.2 Snow Fencing

- .1 Erect snow fencing surrounding the areas under construction and any excavations deeper than 500 mm.
- .2 Snow fencing shall be placed so as to present no hazard to vehicles or pedestrians and shall be kept securely fastened and neat in appearance at all times.

##### E4.3.3 Temporary Ramps

- .1 Where any aspect of the Work impedes access to buildings, temporary plywood or asphalt ramps shall be erected and the Work shall be staged in such a manner that access is maintained. Notify the affected building owner of the estimated duration of temporary ramping prior to commencing this Work.

#### E4.4 Quality Control

E4.4.1 All workmanship and all materials furnished and supplied under this Specification are subject to the close and systematic inspection and testing by the Contract Administrator including all operations from the selection and production of materials through to final acceptance of the Work. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given. The Contract Administrator reserves the right to reject any materials or works which are not in accordance with the requirements of this Specification. The Contractor shall maintain all traffic control as specified herein.

E4.4.2 If, in the opinion of the Contract Administrator, the traffic control is not in accordance with this Specification, the Work in the affected area shall be stopped and shall not resume until such time as the traffic control deficiencies are corrected to the satisfaction of the Contract Administrator. No contract time extensions will be granted as a result of lost time due to work stoppages because of inadequate traffic control by Contractor.

#### E4.5 Method of Measurement

E4.5.1 The supply, erection and maintenance of all pedestrian and traffic control, including ramps, snow fencing, and signs, shall be included in the cost of the Work. No measurement or payment will be made for this Work.

### **E5. VERIFICATION OF WEIGHT**

E5.1 All material which is paid for on a weight basis shall be weighed on a scale certified by Consumer and Corporate Affairs, Canada.

E5.2 All weight tickets shall have the gross weight and the time and date of weighting printed by an approved electro/mechanical printer coupled to the scale.

- E5.3 The tare weight and net weight may either be hand written or machine printed. All weights, scales and procedures shall be subject to inspection and verification by the Contract Administrator. Such inspection and verification may include, but shall not be limited to:
- (a) Checking contractors scales for Consumer & Corporate Affairs certification seals;
  - (b) Observing weighing procedures;
  - (c) Random checking of either gross or tare weights by having such trucks or truck/trailer(s) combinations as the Contract Administrator shall select weighted at the nearest available certified scale;
  - (d) Checking tare weights shown on delivery tickets against a current tare.
- E5.4 The contractor shall ensure that each truck or truck/trailer(s) combination delivering material which is paid for on a weight basis carries a tare not more than on (1) month old.
- E5.5 The tare shall obtain by weighing the truck/trailer(s) combination on a certified scale as shown:
- (a) Upon which scale the truck or truck/trailer(s) combination was weighted;
  - (b) The mechanically printed tare weight;
  - (c) The license number(s) of the truck trailer(s);
  - (d) The time and date of weighing.

## **E6. TRUCK WEIGHT LIMITS**

- E6.1 The City shall not pay for any portion of material which results in the vehicle exceeding the maximum gross vehicle weight allowed under *The City of Winnipeg Traffic By-Law*, unless such vehicle is operating under special permit.

## **E7. SITEWORK DEMOLITION AND REMOVALS**

### **E7.1 General Description**

- E7.1.1 This Specification shall supplement CW 3010, CW 3110, CW 3235, and CW 3240 and shall cover the requirements for demolition, salvage, removal and disposal wholly or in part of various items designated to be removed or partially removed and for backfilling resulting trenches, holes and pits.
- E7.1.2 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.

### **E7.2 Equipment**

- E7.2.1 All equipment shall be of a type approved by the Contract Administrator and shall be kept in good working order.
- E7.2.2 The size, weight, and destructive capabilities of the equipment shall be matched to the type of removal to be done.

### **E7.3 Construction Methods**

#### **E7.3.1 Scope of Work**

- .1 The Work under this Specification shall include the following items as shown within the limit of Work on the Drawings or otherwise directed by the Contract Administrator:
- (a) Removal and disposal of full depth roadway pavement (asphalt and/or concrete). Granular base to remain;
  - (b) Removal and disposal of sections of existing concrete sidewalk and curb (granular base to remain);

- (c) Removal and disposal of sections of existing pavement sidewalk over Boyd Building Areaway;
- (d) Removal of site furnishings including bike racks and tree well covers;
- (e) Removal and stockpile of sidewalk paving stones for re-use;
- (f) Removal and disposal of pedestrian crosswalk paving stones;
- (g) Removal and stockpile of granite curbing;
- (h) Removal and stockpile of waste receptacle for re-use.

#### E7.3.2 Fees and Permits

- .1 The Contractor shall obtain and pay for all licenses and permits necessary for the demolition work.
- .2 The Contractor shall comply with all Municipal, Provincial, and Federal Government regulations relating to the demolition of structures.

#### E7.3.3 Safety Precautions

- .1 The Contractor shall provide flagmen, barricades, railings, and whenever necessary, warning signs at excavation holes, plywood access ramps and /or other construction necessary to secure the safety of workers, the public, and personnel alike and shall comply with all Provincial Statutes applicable to the Work of this nature. The Contractor shall provide all other protective measures as may be required by any law in force in Manitoba.

#### E7.3.4 Protection of Existing Structures

- .1 Protect existing items designated to remain and materials designated for salvage. In event of damage to such items, immediately replace or make repairs to approval of the City and at no cost to the City.
- .2 Protect Boyd Building Areaway. Refer to specification E.9 for Areaway treatment.

#### E7.3.5 Preparation of Site

- .1 Inspect Site and verify with Contract Administrator items designated for removal, disposal, salvage and items to remain.
- .2 Locate and protect utility lines. Preserve in operating condition active utilities traversing site.
- .3 **Notify utility companies before starting demolition. Utilities to provide clearance before any excavation is done.**
- .4 **Notify Geomatics Service Branch at 986-4826 to obtain clearance and mark survey infrastructure minimum of 72 hours before any excavation.**

#### E7.3.6 Removals by Others

- .1 The Contractor shall note that the removal of some existing site furnishings, plant material and topsoil may be undertaken by others during the Contract period and shall coordinate his efforts with the authorities responsible for such removals.

#### E7.3.7 Removals

- .1 Remove items as indicated on the Drawings and as directed by the Contract Administrator. Do not disturb adjacent items designated to remain in place.
- .2 Remove full depth roadway pavement in accordance with CW 3230.
- .3 Remove sidewalk pavement in accordance with CW 3235.
- .2 In removal of pavements:
  - (a) sidewalk designated for replacement shall be removed to the nearest control or construction joint;
  - (b) square up adjacent surface to remain in place by saw-cutting or other method approved by Contract Administrator;
  - (c) protect adjacent joints and load transfer devices; and
  - (d) protect underlying granular materials.

- E7.3.8 Salvage of Materials
- .1 Materials designated to be salvaged, refurbished and re-installed shall be dismantled and removed and stored off-Site as directed by Contract Administrator.
  - .2 Winnipeg Transit will perform a pre-construction review of granite curbs and identify those suitable for re-use on the project.
- E7.3.9 Disposal of Materials
- .1 The Contractor shall promptly dispose of materials not designated for salvage or re-use in Work, off-site.
  - .2 Trim disposal areas to approval of Contract Administrator.
- E7.3.10 Backfill
- .1 Backfill in areas as indicated in accordance with Excavation Bedding and Backfill - CW 2030.
- E7.3.11 Restoration
- .1 Restore areas and existing works outside areas of demolition to match condition of adjacent undisturbed areas.
- E7.3.12 Site Cleanup
- .1 Upon completion of Work, remove debris, trim surfaces and leave Work Site clean.
- E7.4 Measurement and Payment
- E7.4.1 Removal and Disposal of Roadway Pavement
- .1 The removal and disposal of existing roadway pavement, including concrete and asphalt pavement, shall be measured on a surface area basis and paid for at the Contract Unit Price per square metre. The surface area to be paid for shall be the number of square metres removed in accordance with this Specification, and accepted by the Contract Administrator, as calculated by measurements made by the Contract Administrator.
- E7.4.2 Removal and Disposal of Concrete Sidewalk
- .1 The removal and disposal of existing concrete sidewalk shall be measured on a surface area basis and paid for at the Contract Unit Price per square metre. The surface area to be paid for shall be the number of square metres removed in accordance with this Specification, and accepted by the Contract Administrator, as calculated by measurements made by the Contract Administrator.
- E7.4.3 Removal and Disposal of Concrete Curb
- .1 The removal and disposal of existing concrete curb shall be measured on a length basis and paid for at the Contract Unit Price per linear metre. The length to be paid for shall be the number of linear metres removed in accordance with this Specification, and accepted by the Contract Administrator, as calculated by measurements made by the Contract Administrator.
- E7.4.4 Removal and Disposal of Site Furnishings
- .1 The removal and disposal of all site furnishings indicated on the Drawings shall be paid for on a lump sum basis. No measurement will be made for this Work.
- E7.4.5 Remove and/or Stockpile Paving Stones
- .1 The removal and/or stockpile of sidewalk and pedestrian crosswalk paving stones for re-use shall be measured on a surface area basis, and paid for at the Contract Unit Price per square metre. The surface area to be paid for shall be the number of square metres removed in accordance with this Specification, and accepted by the Contract Administrator, as calculated by measurements made by the Contract Administrator.
- E7.4.6 Remove and Stockpile Granite Curbing
- .1 The removal and stockpiling of existing granite curb shall be measured on a length basis and paid for at the Contract Unit Price per linear metre. The length to be paid for

shall be the number of linear metres removed and either disposed of or stockpiled in accordance with this Specification and accepted by the Contract Administrator, as calculated from measurements made the Contract Administrator.

E7.4.7 Removal and Stockpiling of Waste Receptacle

- .1 The removal and stockpile of one (1) waste receptacle for re-use shall be paid for on a lump sum basis. No measurement will be made for this Work.

**E8. TREE VAULTS**

E8.1 General Description

E8.1.1 This Specification covers the installation of tree vaults with precast concrete vault covers, tree vaults with tree grates and related excavation, granular drainage material, tree vault drainage pipe, future irrigation / electrical pipe conduit, geotextile, root barrier, planting medium and mulch.

E8.2 Materials

E8.2.1 Granular Drainage Course: Granular drainage material in accordance with Specification CW 3120 - Installation of Sub Drains.

E8.2.2 Drainage Pipe: 150mm diameter perforated PVC pipe.

E8.2.3 Pipe Conduit Between Tree Vaults: 150mm diameter PVC pipe.

E8.2.4 Geotextile: Geotextile in accordance with CW 3120.

E8.2.5 Root Barrier (tree vaults at Boyd Building Areaway only): DeepRoot UB48-2 Root Barrier.

E8.2.6 Concrete Materials and Accessories: Concrete materials and accessories in accordance with Specification CW 3310 – Portland Cement Concrete Pavement Works, to suit loads designed by Engineer.

E8.2.7 Precast Concrete Vault Covers:

- .1 Sidewalk Soil Trench Cover: Min. 150mm thick reinforced precast concrete panel to accommodate AASHTO HS-20 loading.
- .2 Precast Sidewalk Soil Trench Cover supplied by Barkman Concrete Ltd., 909 Gateway Road, Winnipeg, MB , Phone: 667-3310, or approved equal. Manufacturer to supply shop drawings stamped by a structural engineer.
- .3 Medium sandblast finish for tree well cover and sidewalk soil trench covers.

E8.2.8 Planting Medium: In accordance with Specification E11.

E8.2.9 Tree Grates: In accordance with Specification E13, as shown on the drawings.

E8.3 Submittals

E8.3.1 Prior to installation, submit to the Contract Administrator samples of the following materials:

- .1 Geotextile: 1 sq.m.
- .2 Root Barrier: 1 sq.m.

E8.3.2 Prior to installation, arrange for inspection and approval of the following materials:

- .1 Sidewalk soil trench cover: 1 panel

E8.3.3 Approved samples may be used in the Work.

E8.4 Construction Methods

E8.4.1 The Contractor must ensure that all buried utilities and services are located and if necessary, protected and exposed prior to any excavation in accordance with Specification CW 1120.

- E8.4.2 Excavate the tree vault to the dimensions and depth shown on the Drawings. Soft dig/ day lighting process to be used in area of existing underground utilities. Ensure base of tree pit slopes to drain toward roadway drainage system (min 2% slope).
- E8.4.3 Remove sidewalk base and sub base where required to achieve tree pit width indicated on the Drawings. Unless otherwise indicated on the Drawings, do not remove any base or sub-base material within 450mm of back of curb.
- E8.4.4 Clear excavation of all construction debris, trash, rubble and any foreign material. Excavate and remove oil spills and other soil contamination sufficiently to remove the harmful material. Fill over excavations with approved fill and compact to the required subgrade compaction.
- E8.4.5 All excavated material shall be disposed of off site as per CW 1130.
- E8.4.6 Backfill between roadway base gravel and tree vault edge with compacted granular where required.
- E8.4.7 Install 150 mm depth granular drainage course with perforated pipe in accordance with Specification CW 3120 – Installation of Sub Drains and as shown on the Drawings. Ensure pipe has minimum 25mm cover of drainage course above and below. Tie into existing catch basin.
- E8.4.8 Cover drainage course and sides of tree pit with geotextile in accordance with Specification CW 3120 – Installation of Sub Drains and as shown on the Drawings.
- E8.4.9 For tree vaults at Boyd Building Areaway only install Root Barrier as shown on the drawings and as per manufacturers specifications.
- E8.4.10 Coordinate installation of empty sleeves with construction of the tree wells. Sleeves are for future irrigation and electrical by others.
- E8.4.11 After tree planting, ensure that the finished soil level is 100 mm below bottom edge of tree cover and 25mm below bottom edge of sidewalk panel.
- E8.4.12 Install sidewalk panels and tree covers ensuring edges are supported by tree well.
- E8.4.13 Install tree stakes as indicated on the drawings.

#### E8.5 Measurement and Payment

- E8.5.1 Construction of Tree Vaults will be measured on a volume basis and paid for at the Contract Unit Price per cubic metre. The quantity to be paid for will be the total volume constructed in accordance with this specification, accepted and measured by the Contract Administrator. Tree Vault assemblies include excavation, compacted aggregate base, geotextile, root barrier, drainage pipe, and pipe conduit between tree vaults. Planting medium and mulch shall be paid for in other Sections. Over-excavation will not be paid.
- E8.5.2 Supply and installation of Vault Covers: Sidewalk Soil Trench covers will be measured on a unit basis and paid for at the Contract Unit Price for the items of work listed below. The quantity to be paid for will be the total number of Vault Covers supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator. Clay pavers are not included in the assembly.

##### Items of Work:

- (i) Tree Vault
- (ii) Tree Vault along Boyd Building Areaway
- (iii) Vault Cover: Sidewalk Soil Trench Cover

## E9. BOYD BUILDING AREAWAY

- E9.1 General



- E 9.1.1 This Specification shall cover the requirements for the protection, inspection and waterproofing of the existing Boyd Building Areaway Roof.
- E9.2 Materials
- E9.2.1 Xypex Patching Compound: Xypex 'Magamix II'
- E9.2.2 Torch-on membrane: thermofusible modified bitumen, fibreglas reinforced. nom thickness 2.5mm (100 mil.) bakor 'tg' or sopraema elastophene flam (3mm) follow manufacturers installation specifications.
- E9.2.3 Concrete crack sealer: quickcrete concrete crack sealer (grey).
- E9.2.3 Metal flashing: bond breaker (stainless steel 304 24ga.
- E9.3 Protection of Areaway
- E9.3.1 During the excavation, removal and installation of any works within the vicinity of the areaway ( including concrete sidewalk, tree vaults, concrete curbs, and paving stones) the contractor shall take all necessary precautions to protect the areaway from damage.
- E9.3.2 Know areaways are shown on the Drawings. Areaways have been inspected by the consultant. The contractor shall contact the Contract Administrator regarding information on the areaways.
- E9.3.3 Any additional base course, sand, depth of concrete or sawcutting of unit pavers required to adjust the sidewalk grade over an areaway, paid as material used and shall be included in the unit price bid price for "Concrete Sidewalk with blockouts", "Supply and Install New Charcoal Holland Pavers", "Supply and Install of New Mahogany Holland Square Pavers", and "Supply and Install New Clay Paver Indicator Strip in Sidewalk Blockouts".
- E9.3.4 Existing sidewalk pavement and existing fill is to be carefully removed from areaway roof to clean bare concrete.
- E9.3.5 Any portion or portions of the areaway damaged as a result of the Contractor's operation shall be repaired at their own cost. If damaged, the Contractor shall barricade with snow fence and leave open for inspection by Contract Administrator and repair.
- E9.4 Inspection of Areaway
- E9.4.1 Following the removal of sidewalk pavement and existing fill covering the areaway roof, the contractor shall notify the Contract Administrator for a structural inspection.
- E9.3 Waterproofing of Areaway
- E9.3.1 Remove loose material to sound concrete. Patch holes & cracks with Xypex patching compound to provide smooth sound surface acceptable to membrane installation.
- E9.3.4 Install torch-on membrane over entire Areaway and up building face.
- E9.3.4 Install metal flashing bond breaker.
- E9.3.4 Seal gap between building and concrete sidewalk after concrete cure.
- E9.4 Measurement and Payment
- E9.4.1 The waterproofing of the roof of the Boyd Building Areaway shall be measures on a surface area basis and paid for at the Contract Unit Price per square metre. The surface area to be paid shall be based on the square metres of the areaway roof in accordance with this

Specification, and accepted by the Contract Administrator, as calculated by measurements made by the Contract Administrator.

## **E10. UNIT PAVING**

### **E10.1 Description**

E10.1.1 This Specification shall cover the installation of stockpiled unit pavers, and the supply and installation of new concrete unit paving in formed blockouts, as indicated on the Drawings.

### **E10.2 Materials**

E10.2.1 .1 The Contractor shall be responsible for the supply, safe storage and handling of all materials set forth in this Specification.

#### **E10.2.2 Clay Brick Pavers**

.1 Clay brick pavers as manufactured by Endicott Clay Products Company and supplied by Alsip Industrial Products Ltd., Winnipeg, MB, (204) 667-3330. Pavers shall conform to ASTM C902. Type 1, dimensional tolerance: 1/8", wire cut face, 65 x 215 x 65mm depth, solid (not cored). Colour: manganese ironspot.

#### **E10.2.3 Detectable Clay Pavers**

.1 Clay brick pavers with truncated dome surface as manufactured by Endicott Clay Products Company and supplied by Alsip Industrial Products Ltd., Winnipeg, MB, (204) 667-3330. Pavers shall conform to ASTM C902. Type 1, dimensional tolerance: 1/8", wire cut face, 102 x 204 x 60mm depth, solid (not cored). Colour: manganese ironspot.

#### **E10.2.4 Thinset Clay Pavers**

.1 Thin set clay paver as manufactured by Endicott Clay Products Company and supplied by Alsip Industrial Products Ltd., Winnipeg, MB, (204) 667-3330. Pavers shall conform to ASTM C902. Type 1, dimensional tolerance: 1/8", wire cut face, 102 x 204 x 41mm depth, solid (not cored). Colour: manganese ironspot.

#### **E10.2.5 Ebony Holland Concrete Unit Paver**

.1 102 x 204 x 80mm heavy duty precast concrete unit pavers, patterns as shown, uniform in material, colour, and size and from one supplier. Pavers shall conform to ASTM C936. Acceptable products: Holland Designer Series as manufactured by Barkman Concrete Ltd., Winnipeg, Manitoba or approved equal. Colour: Ebony.

#### **E10.2.6 Blue and Mahogany Holland Square Pavers**

.1 209 x 209mm Holland square paver, patterns as shown, uniform in material, colour, and size and from one supplier. Pavers shall conform to ASTM C936. Acceptable products: Holland Designer Series as manufactured by Barkman Concrete Ltd., Winnipeg, Manitoba or approved equal. Colour: Blue or Mahogany, as indicated on the Drawings.

#### **E10.2.7 Blue and Charcoal Holland Pavers**

.1 209 x 102mm Holland paver, patterns as shown, uniform in material, colour, and size and from one supplier. Pavers shall conform to ASTM C936. Acceptable products: Holland Designer Series as manufactured by Barkman Concrete Ltd., Winnipeg, Manitoba or approved equal. Colour: Bleu or Charcoal as indicated on the Drawings.

#### **E10.2.8 Blue Holland Detectable Pavers**

.1 Holland paver, patterns as shown, uniform in material, colour, and size and from one supplier (to match existing). Pavers shall conform to ASTM C936. Acceptable products: Holland Designer Series as manufactured by Barkman Concrete Ltd., Winnipeg, Manitoba or approved equal. Colour: Blue.

#### **E10.2.9 Bedding Sand**

- .1 Bedding sand shall be fine aggregate as specified in Specification CW 3330.

#### E10.2.10 Joint Sand

- .1 Joint sand shall conform to the requirements of Specification CW 3330.

#### E10.2 Construction Method

##### E10.2.1 Preparation of Sand base

- .1 Sand base shall be installed in accordance with the requirements of Specification CW 3330.

##### E10.2.2 Installation of Unit Pavers

- .1 Unit pavers shall be installed in formed concrete blockouts in accordance with the requirements of Specification CW 3335, set in locations and patterns as shown on the Drawings. Spaces between joints shall not exceed 3 mm, and shall be uniform and consistent while maintaining true patterns as indicated on the Drawings.
- .2 If cutting of pavers is required, the sawn edges shall be true, even and undamaged. Cuts shall occur at the end of rows and intersections of lines of paving only.
- .4 Unit pavers shall be compacted into the bedding sand layer using approved vibratory compactors until they are at the proper grade, uniformly level and free of any movement. Joint sand shall be swept into the joints until full.
- .5 Supply and placing of bedding and joint sand shall be incidental to the installation of the paving stones.

##### E10.3.3 RE-leveling of Existing Unit Pavers at Alexandria Place

- .1 Existing unit pavers shall be re-leveled to meet new sidewalk construction and ensure positive drainage away from building face in accordance with the requirements of Specification CW 3330, as shown on the drawings.

#### E10.3 Quality Control

- E10.3.1 All workmanship and all materials furnished and supplied under this Specification are subject to close and systematic inspection and testing by the Contract Administrator including all operations, from the selection and production of materials, through to final acceptance of the Work. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection of approval that may have been previously given. The Contract Administrator reserves the right to reject any materials or works that are not in accordance with the requirements of this Specification.

#### E10.4 Method of Measurement

##### E10.4.1 Unit Pavers

- .1 The supply and installation of new, re-used and re-leveled Unit Pavers shall be measured on a surface area basis. The surface area to be paid for shall be the number square metres constructed in accordance with this Specification and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

#### E10.5 Basis of Payment

##### E10.5.1 Unit Pavers

- .1 The supply and installation of new, re-used and re-leveled Unit Pavers shall be paid for at the Contract Unit Price per square metre for "Unit Pavers," measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

## **E11. PLANTING MEDIUM**

### **E11.1 General Description**

E11.1.1 This Specification shall cover the supply and installation of topsoil in tree vaults.

### **E11.2 Protection**

E11.2.1 Protect elements surrounding the Work of this section from damage or disfiguration.

E11.2.2 Protect landscaping and other features remaining as final Work.

### **E11.3 Source Quality Control**

E11.3.1 Inform Contract Administrator of proposed source of materials to be supplied and provide sample for review by Contract Administrator prior to installation.

E11.3.2 Test topsoil for clay, sand and silt, NPK, Mg, soluble salt content, pH value, growth inhibitors and soil sterilants.

### **E11.4 Submittals**

E11.4.1 Submit 0.5 kg sample of topsoil to National Testing Laboratory or approved alternate and indicate present use and intended use. Prepare and ship sample in accordance with provincial regulations and testing laboratory requirements.

E11.4.2 Submit two (2) copies of soil analysis and recommendations for corrections to Contract Administrator.

### **E11.5 Delivery and Storage**

E11.5.1 Deliver and store fertilizer in waterproof bags accompanied in writing by weight, analysis and name of manufacturer.

### **E11.6 Materials**

E11.6.1 Planting Medium: In accordance with CW 3540-R4, for topsoil, except organic matter shall be in the range of 5 to 10%.

E11.6.2 Fertilizer: synthetic slow release starter fertilizer with a N-P-K analysis of 12:36:15 ratio at a rate of 4 kg/100 m<sup>2</sup> (8 lb./100 sq.ft.).

E11.6.3 Peatmoss: derived from partially decomposed fibrous or cellular stems and leaves of species of sphagnum mosses. Elastic and homogeneous, brown in colour. Free of wood and deleterious material that could prohibit growth. Shredded particle minimum size: 5 mm.

E11.6.4 Sand: clean, hard, fine sand, well washed and free of impurities, chemical or organic matter.

### **E11.7 Construction Method**

#### **E11.7.1 Excavation**

.1 Excavate tree vaults by hand unless otherwise directed by the Contract Administrator, at locations indicated on the Drawings. Dispose of all rock, clay soils and other deleterious materials off site.

.2 Coordinate work with other trades to optimize timing and avoid damage to prior construction.

.2 Protect bottom of excavations against freezing.

.3 Remove water which enters excavations prior to planting. Ensure source of water is not ground water or from a broken water pipe.

#### **E11.7.2 Growing Medium Placement**

- .1 Verify and obtain approval of subdrainage and root growth trenches prior to placing growing medium.
- .2 Place growing medium in uniform layers over approved, unfrozen sub-grade, to the depth indicated on the Drawings.
- .3 Eliminate rough spots and low areas. Prepare a loose, friable bed, boot firm and level.

E11.7.3 Soil Amendments

- .1 Apply lime, sulphur or other soil amendment at rate determined and recommended from growing medium sample test.
- .2 Mix soil amendment well into full depth of topsoil prior to application of fertilizer.

E11.7.4 Finish Grading

- .1 Fine grade entire soil area to elevations as indicated on the Drawings. Eliminate rough spots and low areas and prepare a loose, friable bed, with a smooth, uniform surface, firm against deep foot printing, and a fine loose texture.

E11.7.5 Surplus Material

- .1 Dispose of unused growing medium off site in accordance with CW 1130.

E11.7.6 Site Cleanup

- .1 All sidewalks, streets, approaches, driveways and properties near the Work Site shall be kept clean at all times by the Contractor.
- .2 Upon completion of the project, the Contractor shall immediately remove all excess material and debris from the Work Site.

E11.8 Method of Measurement

- E11.8.1 Supply and placement of growing medium in tree vaults will be measured on an volume basis. The volume to be paid for shall be the number of cubic metres placed in accordance with this Specification and accepted by the Contract Administrator, as calculated from measurements made by the Contract Administrator.

E11.9 Basis of Payment

- E11.9.1 Supply and placement of growing medium in tree vaults will be paid for at the Contract Unit Price per square metre for the Items of Work listed below, measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

Items of Work:

- (i) 900mm depth planting medium in tree vaults

**E12. TREES**

E12.1 General Description

- E12.1.1 This Specification shall cover the supply and install of trees.

E12.2 Source Quality Control

- E12.2.1 Obtain approval of plant material at source.

- E12.2.2 Notify Contract Administrator of source of material at least seven (7) days in advance of shipment. No work under this section is to proceed without approval.

- E12.2.3 Acceptance of plant material at its source does not prevent rejection on site prior to or after planting operation.

- E12.2.4 Imported plant material must be accompanied with necessary permits and import licenses. Conform to federal and provincial regulations.

E12.3 Shipment and Pre-planting Care

- E12.3.1 Coordinate shipping of plants and excavation of holes to ensure minimum time lapse between digging and planting.
- E12.3.2 Tie branches of trees securely and protect plant material against abrasion, exposure and extreme temperature change during transit. Avoid binding of planting stock with rope or wire that would damage bark, break branches or destroy natural shape of plant. Give full support to rootball of large trees during lifting.
- E12.3.3 Cover plant foliage with tarpaulin and protect bare roots by means of dampened straw, peatmoss, saw dust or other acceptable material to prevent loss of moisture during transit and storage.
- E12.3.4 Remove broken and damaged roots with sharp pruning shears. Make clean cut and cover cuts over 20 mm (3/4") diameter with wound dressing.
- E12.3.5 Keep roots moist and protect from sun and wind. Heel-in trees that cannot be planted immediately in shaded areas and water well.
- E12.4 Warranty of Nursery Stock
  - E12.4.1 For trees over 63 mm (2.5") caliper the 18 month warranty period prescribed in Article 43 of the Instructions to Bidders is extended to 24 months. For all other plant material the 18 month warranty period applies.
  - E12.4.2 During the warranty period, upon written notification from the Consultant, the Contractor warrants to replace and replant any nursery stock found dead and/or in poor condition as soon as possible thereafter, without cost to the Owner. "Poor Condition" shall be interpreted as meaning nursery stock on which branches are dead or dying, or have not shown satisfactory growth in leaves. Exempted is nursery stock damaged by accidental causes or vandalism, which stock shall be replaced at the cost of the Owner.
  - E12.4.3 End-of-Warranty inspection will be conducted by Consultant.
  - E12.4.4 Consultant reserves the right to extend Contractor's warranty responsibilities for an additional one (1) year if, at end of initial warranty period, leaf development and growth is not sufficient to ensure future survival.
- E12.5 Replacements
  - E12.5.1 During warranty period, remove from site any plant material that has died or failed to grow satisfactorily as determined by the Consultant. Dispose of material in accordance with Construction Manager's Waste Management Plan.
  - E12.5.2 Extend warranty on replacement plant material for a period equal to the original warranty period.
  - E12.5.3 All required replacements shall be by plants of at least the same size and species as specified, and shall be supplied and planted in accordance with the original Drawings and Specifications.
  - E12.5.4 Should the replaced plant material not survive, the Contractor will be responsible to replace it a third time and guarantee it for a period equal to the original warranty period unless it is determined that unique site conditions or inadequate maintenance causes the death of plants.
- E12.6 Plant Material
  - E12.6.1 During warranty period, remove from site any plant material that has died or failed to grow satisfactorily as determined by the Consultant. Dispose of material in accordance with Construction Manager's Waste Management Plan.
  - E12.6.2 Quality and source: comply with Guide Specifications for Nursery Stock, latest edition of Canadian Nursery Trades Association referring to size and development of plant material and rootball.

- E12.6.3 Additional plant material qualifications:
- (a) Bare root plant material or plant material obtained from areas with milder climatic conditions from those of site are acceptable only when moved to site prior to the breaking of buds in their original location and heeled-in in a protected area until conditions are suitable for planting.
  - (b) Plant material that has come out of dormant stage and is too far advanced will not be accepted for bare root planting unless prior approval is obtained.
  - (c) Use trees with strong fibrous root system free of disease, insects, defects or injuries and structurally sound. Use trees with straight trunks, well and characteristically branched for species. Plants must have been root pruned regularly, but not later than one growing season prior to arrival on site.
- E12.6.4 Cold Storage: approval is required for plant material that has been held in cold storage.
- E12.6.5 Container grown stock: acceptable if containers are large enough for root development. Trees must have grown in container for minimum of one growing season but not longer than two. Root system must be able to "hold" soil when removed from container. Plants that have become root bound are not acceptable. Container stock must have been fertilized with slow releasing fertilizer.
- E12.6.6 Balled and burlapped: coniferous and broad leaf evergreens over 500 mm (1'-8") tall must be dug with soil ball. Deciduous trees in excess of 3 m (10') height must have been dug with large firm ball. Rootballs must include 75% of fibrous and feeder root system. This excludes use of native trees grown in light sandy or rocky soil. Secure rootballs with burlap, heavy twine and rope. For large trees wrap rootball in double layer of burlap and drum lace with minimum 10 mm (1/2") diameter rope. Protect rootballs against sudden changes in temperature and exposure to heavy rainfall.
- E12.6.7 Tree spade dug material: dig plant material with mechanized digging equipment of hydraulic spade or clam-shell type. Rootballs to satisfy CNTA standards. Lift rootball from hole, place in wire basket designed for purpose and line with burlap. Replace rootball and tie basket to ball with heavy rope. Take care not to injure trunk of tree with wire basket ties or rope.
- E12.6.8 Substitutions to plant material as indicated on planting plan are not permitted unless written approval has been obtained as to type, variety and size. Plant substitutions must be of similar species and of equal size as those originally specified.
- E12.6.9 Refer to Plant Specification List on the Drawings for species, quantities, size and quality of plant materials.
- E12.7 Other Materials
- E12.7.1 During warranty period, remove from site any plant material that has died or failed to grow satisfactorily as determined by the Consultant. Dispose of material in accordance with Construction Manager's Waste Management Plan.
- E12.7.2 Water: free of impurities that would hinder plant growth. The Contractor shall provide water, so that
- (a) All costs to provide water for the watering operation and all associated costs shall be borne by the Contractor. These costs may include hydrant permit and meter rental fees.
  - (b) Further to clause 3.7 of CW 1120-R1, the Contractor shall pay for all costs associated with obtaining water in accordance with the Waterworks By-law. Sewer charges will not be assessed for water obtained from a hydrant.
- E12.7.3 Backfill with planting medium as specified in Section E11 – Planting Medium.
- E12.7.4 Rootball burlap: 150 g Hessian burlap, biodegradable.

- E12.7.5 Anti-desiccant: wax-like emulsion to provide film over surfaces reducing evaporation but permeable enough to permit transpiration.
- E12.7.6 Wound dressing: horticulturally accepted non-toxic, non-hardening emulsion.
- E12.7.7 Horticultural bonemeal: raw bonemeal finely ground with minimum analysis of 3% nitrogen and 10% phosphoric acid.
- E12.7.8 Wood Mulch: shredded wood mulch, varying in size from 25 to 125 mm in length, uniform in colour and texture, free of CCA or creosote. Provide sample for approval prior to installation.
- E12.8 Planting Time and Workmanship
- E12.8.1 When planting deciduous plant material after buds have broken, spray plants with anti-desiccant to slow down transpiration prior to transplanting.
- E12.8.2 Trees growing in containers may be planted throughout growing season.
- E12.8.3 Plant only under conditions that are conducive to health and physical conditions of plants.
- E12.8.4 Provide planting schedule. Extending planting operations over long period using limited crew will not be accepted.
- E12.9 Installation of Additional Planting Soil in Tree Vaults
- E12.9.5 Remove all rubble, debris, dust and silt that may have accumulated after the initial installation of the planting medium.
- E12.9.1 Prior to planting trees, install additional planting soil within the tree vault as required to facilitate planting.
- E12.9.2 Assure that the planting soil under the tree root ball is compacted to approximately 85-90% Standard Proctor Density to prevent settlement of the root ball. Plant settlement caused by under-compaction will be repaired at the Contractor's expense.
- E12.10 Tree Planting
- E12.10.1 Cover bottom of each excavation with bonemeal in amount recommended by manufacturer.
- E12.10.2 Plant trees vertically with roots placed straight out in hole. Orient plant material to give best appearance in relation to structure, roads and walks.
- E12.10.3 Ensure tree trunk is centred on opening of tree covers.
- E12.10.4 Place plant material to depth equal to depth they were originally growing in nursery.
- E12.10.5 With balled and burlapped rootballs, loosen burlap and cut away top 1/3 without disturbing rootball. Do not pull burlap or rope from under rootball. With container stock, remove entire container without disturbing rootball. Non-biodegradable wrappings must be removed.
- E12.10.6 Tamp planting soil around root system in layers of 150 mm eliminating air voids. Frozen or saturated planting soil is unacceptable. When 2/3 of planting soil has been placed, fill hole with water. After water has completely penetrated into soil, complete backfilling.
- E12.10.7 Build 100 mm depth saucer around outer edge of hole to assist with maintenance watering.
- E12.10.8 When planting is completed, give surface of planting saucer dressing of slow release 12:36:15 fertilizer at rate recommended by manufacturer, or approved equal. Mix fertilizer thoroughly with top layer of planting soil and water in well.
- E12.11 Pruning
- E12.11.1 Undertake corrective pruning after planting to eliminate torn and broken branches. Do not damage lead branches or remove smaller twigs along main branches. Do not prune to compensate for root loss.



E12.11.2 Postpone pruning of those trees where heavy bleeding may occur, until in full leaf. Employ clean sharp tools and make cut flush with main branch, smooth and sloping as to prevent accumulation of water. Remove projecting stumps on trunks or main branches and branches that rub causing damage to bark. Treat cuts in excess of 20 mm (3/4") diameter and damaged parts with application of wound dressing.

#### E12.12 Mulching

E12.12.1 Undertake corrective pruning after planting to eliminate torn and broken branches. Do not damage lead branches or remove smaller twigs along main branches. Do not prune to compensate for root loss.

E12.12.2 Obtain approval of planting before mulching material is applied. Loosen soil in planting beds and pits and remove debris and weeds. Spread approved mulch to minimum thickness of 75 mm or as indicated on drawing. Mulch material susceptible to blowing must be moistened and mixed with planting medium before applying. When mulching is placed in fall, place immediately after planting. When mulch is placed in spring, wait until soil has warmed up.

E12.12.3 In tree wells, cover the planting soil finished grade with 50 mm of approved mulch, unless otherwise indicated on the Drawings.

#### E12.13 Maintenance

Maintain plant material from date of planting to the end of the warranty period. Refer to Section E14 - Landscape Maintenance.

### **E13. SITE FURNISHINGS AND CUSTOM FABRICATIONS**

#### E13.1 Description

E13.1.1 This Specification shall cover the supply and installation of benches, tree grates, bike racks, stockpiled waste receptacle and banner arms and as indicated on the Drawings.

E13.1.2 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 specified herein.

#### E13.2 Materials

##### E13.2.1 Benches

- .1 Maglin custom surface mounted bench based on Model # MLB720W available from Maglin Site Furniture Inc. (Contact: Owen Jones ph.1-888-271-8666). Bench to be composed of three sections: 2 sections with backs measuring 1174 x 450mm and 1 section without back measuring 649 x 450mm. Finish to be: IPE seat and back, cast aluminium ends, powdercoated onyx. Install as per manufacturers specifications.

##### E13.2.2 Tree Grates

E13.2.3 .1 'Jamison' style 1.5m / 5' square tree grate with powdercoated black finish. Available from PW Siteworks, Edmonton, Alberta (1-800-667-4264). Install as indicated on the drawings.

##### E13.2.4 Waste Receptacle from Stockpile

- .1 Existing waste receptacle from stockpiled.

##### E13.2.5 Bicycle Racks

- .1 Style to be determined (TBD).

##### E13.2.6 Banner Arms

- .1 Bannerflex banner arms, 812 mm (32") length, complete with stainless steel mounting bolts, as supplied by West Four Decor Ltd., #4-1873 Parkview Crescent, Kelowna, BC, V1X 7G7, (250) 763-1519, or approved equal. Provide sample for approval.

### E13.3 Construction Methods

- E13.3.7 All Work is to be located and installed in accordance with the Drawings using approved stainless steel, vandal resistant fasteners to ensure solid, durable, finished Work suitable for the purpose intended.
- E13.3.8 Site furnishings with in-ground mounts, such as the bicycle racks, shall be installed in accordance with manufacturers specifications. Where applicable, unit pavers shall be cut to fit snugly around all embedded furnishings.
- E13.3.9 Site furnishings with surface mounts, such as benches, shall be installed in accordance with manufacturers specifications.
- E13.3.10 All furnishings and fixtures to be installed plumb and true to correct elevations and location, as directed by the Contract Administrator. The Contractor shall confirm proposed locations of all site furnishings with Contract Administrator prior to installation.
- E13.3.11 All furnishings and fixtures to be carefully handled so that no parts will be bent, broken, or otherwise damaged. Hammering, which will injure or distort fixture, is prohibited.
- E13.3.12 Notify the Contract Administrator when all banner arms arrive from the supplier. Installation of all banner arms to poles will be by Manitoba Hydro. The Contract Administrator shall coordinate delivery of banner arms to the installer.
- E13.3.13 All furniture to be installed as per manufacturers specifications, unless otherwise indicated.

### E13.4 Method of Measurement

- E13.4.14 The supply or supply and installation of Site Furnishings and Custom Fabrications shall be measured on a Unit Basis. The number of Site Furnishings and Custom Fabrications to be paid for shall be the total number that are supplied or supplied and installed in accordance with this Specification and accepted by the Contract Administrator, as calculated from measurements made by the Contract Administrator.

### E13.5 Basis of Payment

- E13.5.15 The supply or supply and installation of Site Furnishings and Custom Fabrications shall be paid for at the Contract Unit Price per unit for the "Items of Work" listed below, measured as specified herein, which price shall be payment in full for supplying or supplying and installing all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E13.5.16 Items of Work:

- (i) Benches;
- (ii) Tree Grates;
- (iii) Waste Receptacle from Stockpile;
- (iv) Bicycle Racks;
- (v) Banner Arms.

## E14. LANDSCAPE MAINTENANCE

### E14.1 General Description

- E14.1.17 This Specification shall cover the maintenance of trees, shrubs, and perennials following acceptance of the plant material to start warranty.
- E14.1.18 Contractor shall maintain all landscape areas in accordance with these Specifications from date of installation up to the date they are accepted to start warranty as part of the installation contract.

E14.1.19 In general, the Work shall include:

- .1 Fertilizing
- .2 Watering
- .3 Weed Control
- .4 Pest and Disease Control
- .5 Mowing
- .6 Mulching
- .7 Tree Support
- .8 Winter Preparation

E14.1.20 Maintenance shall be performed on an as required basis.

E14.2 Maintenance and Warranty Period

E14.2.21 Maintenance shall occur between the date of installation and up to a period of two (2) years from date landscaped areas are accepted to start warranty. The warranty period for plant materials will be coincidental to the maintenance period.

E14.2.22 Thirty days after the planting installation has been completed, the Contract Administrator shall perform an inspection of the plant material to determine if the plant material is acceptable to start warranty.

E14.3 Materials and Equipment

E14.3.23 Materials shall conform to the requirements of related Specification sections.

E14.3.24 Provide all equipment to properly execute Work. Maintain such equipment in a workable, safe condition while in use during this project.

E14.3.25 Contract Administrator shall review equipment to be used to execute Work prior to execution.

E14.4 Construction Method

E14.4.26 General

- .1 Provide watering service within 24 hours, weeding services within 48 hours of the request by the Contract Administrator. Monitor the Site and advise the Contract Administrator of conditions that might void the Contractor's warranty responsibilities.
- .2 The Contractor shall maintain a log noting times, dates, equipment used, and quantity of materials used and areas treated for each maintenance application. Forms shall be provided by Contract Administrator. Submit log to Contract Administrator upon request. Contractor shall notify Contract Administrator of the exact time Contractor proposes to commence each application.
- .3 Schedule operations in accordance with growth, health, weather conditions, and use of site.
- .4 Perform each operation continuously and completely within a reasonable time period.
- .5 Store equipment and materials off site.
- .6 Collect and dispose of debris or excess material on the day the maintenance is undertaken.

E14.4.27 Maintenance of Trees

- .1 Fertilizing
  - Apply fertilizer only at frequency, ratio and rates as recommended by manufacturer. Water immediately after fertilizing.
  - Apply fertilizer no later than May 30th of each maintenance year.
- .2 Watering
  - Apply water as required to supplement rainfall and to maintain optimum growing conditions. In general, water once a week to achieve rates as indicated. Allow soil to

adequately dry between watering to prevent over saturation without creating water stress.

Subject to the above-noted requirements, the Contractor must water at least once a week between May 1st and October 15th inclusive. A complete record is to be kept of each series of waterings for all planted trees noting location and date of watering. This record is to be given to the Contract Administrator when requested.

Apply 40 litres of water per 25 mm calliper per application using a deep root feeder or low pressure open flow nozzle and hose. The water stream must not gouge the soil and mulch.

.3 Weed Control

Inspect and undertake weed control weekly during the first year of maintenance and monthly during the second year.

By hand, remove all weeds with their roots from tree pits and tree beds and dispose of off site. When weeding operation is complete, replace and rake displaced mulch to its original condition.

.4 Pests and Diseases

Obtain written approval of Contract Administrator prior to using any pesticide.

Control pests and disease through pruning or application of pesticides. Use species specific pesticides where possible. Use only pesticides of low mammalian toxicity. Strictly follow manufacturer's written instructions.

.5 Pruning

The Contractor shall provide a person with a Manitoba Arborists Certificate for each work crew or Work site.

Prune trees as required to remove dead, broken or damaged limbs. Prune back to healthy growth while maintaining balanced crown shape.

Employ clean sharp tools. Make cuts smooth and flush with outer edge of branch collar near the main stem or branch. Cuts must be smooth and sloping to prevent accumulation of water on cut. Do not leave little stumps ("horns") on trunks or main branches.

Prune trees according to accepted horticultural practices as outline in "The Pruning Manual", Publication No. 1505-1977 by Agriculture Canada.

.6 Mulching

Add mulch as required to maintain original thickness.

Contractor is to provide replacement mulch material.

.7 Winter Preparation

Ensure adequate moisture in tree root zones prior to freeze-up.

Apply anti-desiccant to evergreen trees susceptible to winter desiccation.

E14.5 Method of Measurement

E14.5.28 Landscape maintenance shall be paid for on an annual Lump Sum basis. No measurement shall be made for this Work.

E14.6 Basis of Payment

E14.6.29 Landscape maintenance shall be paid for at the Contract Lump Sum Price for the Items of Work listed below, measured as specified herein, which price shall be payment in full for supplying all material and performing all operations herein described and all other items incidental to the Work included in this Specification.

Items of Work:

- (i) Landscape Maintenance Year 1
- (ii) Landscape Maintenance Year 2