



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 391-2010**

**CITY HALL COURTYARD UNIVERSAL ACCESS UPGRADE**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 CITY HALL COURTYARD UNIVERSAL ACCESS UPGRADE

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, June 9, 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. ENQUIRIES**

B3.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

B3.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B3.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B3.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

### **B4. ADDENDA**

B4.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

B4.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B4.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>

B4.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B4.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

### **B5. SUBSTITUTES**

B5.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.

- B5.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B5.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B5.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
  - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
  - (c) identify any anticipated cost or time savings that may be associated with the substitute;
  - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
  - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B5.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B5.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B5.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B5.7 If the Contract Administrator approves a substitute as an "approved equal", any Bidder may use the approved equal in place of the specified item.
- B5.8 If the Contract Administrator approves a substitute as an "approved alternative", any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B14.
- B5.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B5.10 Notwithstanding B5.2 to B5.9, and in accordance with B6.6 deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B14.1(a).

## **B6. BID COMPONENTS**

- B6.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
  - (b) Form B: Prices;

(c) Bid Security

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

- B6.2 Further to B6.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B5.
- B6.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B6.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B6.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.
- B6.5 Bidders are advised not to include any information/literature except as requested in accordance with B6.1.
- B6.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B14.1(a).
- B6.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B6.8 Bids shall be submitted to:  
The City of Winnipeg  
Corporate Finance Department  
Materials Management Division  
185 King Street, Main Floor  
Winnipeg MB R3B 1J1

**B7. BID**

- B7.1 The Bidder shall complete Form A: Bid, making all required entries.
- B7.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
- (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
- (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
- (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the City of Winnipeg of such business name shall be inserted.
- B7.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B7.2.
- B7.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B7.4 Paragraph 12 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;

- (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, 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 City of Winnipeg of the business name, or by the registered City of Winnipeg's authorized officials if the City of Winnipeg is a partnership or a corporation.

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

B7.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

## **B8. PRICES**

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

B8.1.1 Notwithstanding C.12.2.3(c), prices on Form B: Prices shall not include the Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

B8.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B8.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B8.4 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

## **B9. QUALIFICATION**

B9.1 The Bidder shall:

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

B9.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>

B9.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);

- B9.4 Further to B9.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
- (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
  - (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>)
- B9.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B9.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

## **B10. BID SECURITY**

- B10.1 The Bidder shall provide bid security in the form of:
- (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or
  - (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
  - (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.
- B10.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.
- B10.1.2 All signatures on bid securities shall be original.
- B10.1.3 The Bidder shall sign the Bid Bond.
- B10.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.
- B10.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.
- B10.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B10.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.
- B10.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.



B10.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

### **B11. OPENING OF BIDS AND RELEASE OF INFORMATION**

B11.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.

B11.1.1 Bidders or their representatives may attend.

B11.1.2 Bids determined by the Manager of Materials, or his designate, to not include the bid security specified in B10 will not be read out.

B11.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>

B11.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>

B11.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

### **B12. IRREVOCABLE BID**

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

B12.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

### **B13. WITHDRAWAL OF BIDS**

B13.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B13.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

B13.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

B13.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

- (a) retain the Bid until after the Submission Deadline has elapsed;
- (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
- (c) if the notice has been given by any one of the persons specified in B13.1.3(b), declare the Bid withdrawn.

B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

#### **B14. EVALUATION OF BIDS**

B14.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation there from (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B9 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B5.

B14.2 Further to B14.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.

B14.3 Further to B14.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.

B14.4 Further to B14.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B14.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B14.4.2 Further to B14.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

#### **B15. AWARD OF CONTRACT**

B15.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B15.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B15.2.1 Without limiting the generality of B15.2, the City will have no obligation to award a Contract where:

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

**B15.3** Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B14.

**B15.3.1** Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.

## PART C - GENERAL CONDITIONS

### C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Construction* (Revision 2006 12 15) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](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 the demolition and removal and/or salvaging of the existing stairways and ramps and underlying structural concrete, and construction of new accessible stairs and sloped walkways at the east and west entries to the City Hall Courtyard. Included in the scope of work is the installation of new pile foundations, construction of reinforced concrete beams and slabs, damp-proofing and waterproofing of new and existing surfaces, installation of salvaged and new unit pavers, supply and installation of granite seating surfaces, relocation of existing light standards and flag poles, new base and tie-down anchors for the seasonal Xmas tree, new electrical services, new stainless steel handrails, and planting of shrubs.

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

D3.1 The Contract Administrator is Scatliff+Miller+Murray Inc., represented by:

Mr. Bob St. Goddard  
Contract Administrator  
8<sup>th</sup> floor, 136 Market Avenue  
Winnipeg, Manitoba R3B 0P4  
Telephone No. (204) 927-3444  
Facsimile No. (204) 927-3443

D3.2 At the pre-construction meeting, Mr. St. Goddard 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, broad form property damage cover and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
  - (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;

- (c) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.

D9.2 Deductibles shall be borne by the Contractor.

D9.3 The Contractor shall provide the City Solicitor with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than the date specified in C4.1 for the return of the executed Contract.

D9.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

## **D10. PERFORMANCE SECURITY**

D10.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or
- (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
- (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.

D10.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D10.2 If the bid security provided in his Bid was not a certified cheque or draft pursuant to B10.1(c), the Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

## **D11. SECURITY CLEARANCE**

D11.1 Each individual proposed to perform the following portions of the Work:

- (a) any Work within the Council or Administration Buildings and common areas such as interconnecting tunnels and corridors;

shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his place of residence.

D11.2 The Criminal Record Search shall include a Vulnerable Sector Search. This can be obtained by completing and providing the following in person to the Winnipeg Police Service Bureau of Police Records, 4<sup>th</sup> Floor, 151 Princess Street:

- (a) Form P-612 Check the following boxes: Vulnerable Sector; and Other by inputting the Bid Opportunity Number in the space provided. This form can be found on the website at: [www.winnipeg.ca/police/BPR/forms/Criminal\\_Record\\_Check\\_P612.doc](http://www.winnipeg.ca/police/BPR/forms/Criminal_Record_Check_P612.doc)
  - (i) Individuals will need to state in Section 2 of the form, that they may be working in City of Winnipeg pools, libraries and community centres;
  - (ii) Individuals will need to sign and date Section 3 of the form.

- (b) Two (2) pieces of identification as stated in Bureau of Police Records on the website at: [www.winnipeg.ca/police/BPR/id.stm](http://www.winnipeg.ca/police/BPR/id.stm)
  - (c) Fee for each individual applying for a Criminal Record Search. Fee schedule can be found on the website at: [www.winnipeg.ca/police/BPR/fees.stm](http://www.winnipeg.ca/police/BPR/fees.stm)
- D11.2.1 The original Criminal Record Search Certificate (Form P-253) will be provided by the Winnipeg Police Service to the individual applicant. The original has a validation sticker from the Winnipeg Police Service in the top right hand corner. The applicant shall:
- (a) Provide the original Criminal Record Search Certificate (Form P-253) to the Contract Administrator.
- D11.3 Prior to the commencement of any Work specified in D11.1, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Criminal Record Search Certificate obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform such Work.
- D11.4 Any individual for whom a Criminal Record Search Certificate is not provided, or for whom a Criminal Record Search Certificate indicates any convictions or pending charges related to property offences or crimes against another person, will not be permitted to perform any Work specified in D11.1.
- D11.5 Any Criminal Record Search Certificate obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- D11.6 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated criminal records search. Any individual who fails to provide a satisfactory Criminal Record Search Certificate as a result of a repeated criminal records search will not be permitted to continue to perform any Work specified in D11.1.

## **SCHEDULE OF WORK**

### **D12. COMMENCEMENT**

- D12.1 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.
- D12.2 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; and
    - (vi) the security clearances specified in D11.
  - (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.
- D12.2.1 Further to D12.2(a)(vi), subject to all other requirements being met, the Contractor may commence Work on those portions of the Work not specified in D11.1, prior to submitting the security clearances.
- D12.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.



D12.3 The City intends to award this Contract by July 9, 2010.

D12.3.1 If the actual date of award is later than the intended date, the dates specified for Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

### **D13. SUBSTANTIAL PERFORMANCE**

D13.1 The Contractor shall achieve Substantial Performance by October 1, 2010.

D13.2 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.

D13.3 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.

### **D14. TOTAL PERFORMANCE**

D14.1 The Contractor shall achieve Total Performance by October 15, 2010.

D14.2 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.

D14.3 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.

### **D15. LIQUIDATED DAMAGES**

D15.1 If the Contractor fails to achieve Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City eight hundred dollars (\$800.00) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.

D15.2 The amount specified for liquidated damages in D15.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Total Performance by the day fixed herein for same.

D15.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

### **D16. SCHEDULED MAINTENANCE**

D16.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

(a) Landscape Maintenance as specified in E13;

D16.2 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**

### **D17. JOB MEETINGS**

D17.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

D17.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

### **D18. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)**

D18.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

## **MEASUREMENT AND PAYMENT**

### **D19. PAYMENT**

D19.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

## **WARRANTY**

### **D20. WARRANTY**

D20.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter, except where longer warranty periods are specified in the respective Specification sections, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

D20.1.1 For the purpose of Performance Security, the warranty period shall be one (1) year.

D20.2 Notwithstanding C13.2, 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 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.

D20.3 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. 391-2010

CITY HALL COURTYARD UNIVERSAL ACCESS UPGRADE

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

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

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

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

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

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

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

**SIGNED AND SEALED**  
in the presence of:

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

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

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

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

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

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



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

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

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

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

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

This credit is subject to the Uniform Customs and Practice for Documentary Credit (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, STANDARD DETAILS AND DRAWINGS

E1.1 *The City of Winnipeg Works and Operations Division Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.

E1.1.1 Division 2 - Standard Provisions, Provision CW 1100 of *The City of Winnipeg Works and Operations Division Standard Construction Specifications* shall apply to the Work.

E1.1.2 Further to GC:2.4(d), Specifications included in the Tender Package shall govern over *The City of Winnipeg Works and Operations Division Standard Construction Specifications*.

E1.2 The following Drawings are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing</u>
	Cover Sheet
D1 – Rev 0	Demolition – Existing Ramp and Stair Plan
S1 – Rev 0	Structural – Ramp and Stair Layout Plan
S2 – Rev 0	Structural - Details
S3 – Rev 0	Structural - Details
L01 – Rev 0	Removals/Salvage Plans
L02 – Rev 0	Layout Plans
L03 – Rev 0	Material Plans
L04 – Rev 0	Layout Plans
L05 – Rev 0	Planting Plans
L06 – Rev 0	Details
E01 – Rev 0	Electrical – Ramp and Stair Layout Power Plan

#### E2. MOBILIZATION AND DEMOBILIZATION

### GENERAL

E2.1 Mobilization and demobilization will include but not be limited to equipment setup and removal, storage facilities set-up and removal, access development, access maintenance and removal, site cleanup and restoration.

E2.2 All equipment, implements, tools and facilities used shall be of a size and type as required to complete the Work in a reasonable time, approved by the Contract Administrator. The Contractor shall keep all equipment in good Working order, and have sufficient standby equipment available at all times, as required.

### CONSTRUCTION METHODS

E2.3 Site and Construction Access

E2.3.1 The Contractor shall be responsible to develop suitable Site access. This includes but is not limited to, temporary bridging over structures, etc. Prior to commencing construction the Contractor shall submit their site access plan to the Contract Administrator for approval.

E2.3.2 The Contractor is responsible for obtaining and paying for all required permits and permissions that are necessary for Site access.

## E2.4 General Site Cleanup and Restoration

- E2.4.1 All areas of the construction Site shall be restored to a condition at least equivalent to its original condition prior to initiation of Work, as accepted by the Contract Administrator.

## MEASUREMENT AND PAYMENT

### E2.5 Mobilization and Demobilization

- E2.5.1 Mobilization and Demobilization will be measured on a Lump Sum basis and paid for at the Contract Unit Price for "Mobilization and Demobilization" for supplying all materials and for performing all operations herein described and all other items incidental to the Work included in the Specification, as accepted by the Contract Administrator.

## E3. SEQUENCE OF CONSTRUCTION

### DESCRIPTION

- E3.1 The work to be done by the Contractor shall be performed in the following sequence unless approved by the Contract Administrator;
- (a) All Work on the King Street entrance to be substantially completed, with the exception of planting of shrubs and ground covers prior to commencement of work on the Main street entrance to the courtyard.
  - (b) Work will be considered substantially completed for the purposes of this clause, when unobstructed, safe and secure public access can be provided to the courtyard.

## E4. DEMOLITION AND SALVAGE

### DESCRIPTION

- E4.1 The work to be done by the Contractor under this specification shall include the furnishing of all equipment, tools, supplies and all other things necessary for an incidental to the satisfactory performance and completion of all work as herein after specified.
- (a) Removing concrete slabs, beams and piles within the limits of demolition shown.
  - (b) Removing and salvaging (for re-use where noted) and storing off-site of all unit pavers
  - (c) Removing, salvaging and storing off-site of granite slabs,

## CONSTRUCTION METHODS

### E4.2 General

- E4.2.1 Refer to Structural (S) and Landscape (L) Drawings for details.
- E4.3 The Contractors methodology for demolition shall be submitted for approval prior to the start of the work. Minimal use of vibration equipment will be permitted.
- E4.4 The Contractor shall be responsible for the disposal of all material from the demolition. Concrete rubble shall be delivered to a recycling facility.
- E4.5 Care shall be taken to protect the roof of the below grade tunnels. The load on the tunnels shall be limited to 75 psf during demolition and new construction.
- E4.6 Protected access to the administration and council building shall be maintained for emergency use during demolition and reconstruction.



- E4.7 Signage shall be provided by the Contractor to redirect pedestrian traffic.
- E4.8 All existing granite shall be salvaged. Care shall be taken when removing the granite. The demolition Contractor shall be responsible for transporting of the granite to a designated storage location.
- E4.9 Conditions of Existing Adjacent Property
- E4.9.1 Examine existing adjacent property carefully in conjunction with Contract Administrator before commencement of any Work under this Contract.
- E4.9.2 Maintain surveillance upon said property, report without delay to Contract Administrator in writing any deterioration or structural defects noticed upon adjacent property which could be construed to be caused by Work under this Contract.
- E4.9.3 Cease operations, notify Contract Administrator if at anytime safety to adjacent property appears to be endangered.
- E4.10 Utilities
- E4.10.1 Preserve in operating condition all active utilities traversing the site.
- E4.10.2 Verify all utilities servicing adjacent buildings prior to demolition.
- E4.11 Materials Requested by City of Winnipeg
- E4.11.1 City of Winnipeg reserves the right to remove items that they may, by after thought, desire to retain after premises turned over to Contractor for commencement of Work.
- E4.11.2 Remove, store items in location directed by City of Winnipeg.
- E4.11.3 Arrange with City of Winnipeg for cost of any such item with salvage value of a substantial amount.

## **MATERIALS**

- E4.12 Do not re-use demolished materials for new construction except as noted; refer to salvage schedule.
- E4.13 Remove from job site immediately all materials which become property of Contractor.
- E4.14 Do not allow accumulation of scrap materials on jobsite. Confine materials to be demolished to limits shown on drawings.
- E4.15 Rebuild, restore Work demolished, damaged beyond limits shown, at no cost to City of Winnipeg.
- E4.16 Remove and store those items identified to be salvaged for later incorporation into the construction.
- E4.17 Preparation
- E4.17.1 Obtain, make ready, prepare all equipment, materials for work under this Section to cause no delays to project.
- E4.17.2 Be responsible for all plant, equipment required for demolition purposes.
- E4.17.3 Confine staging, working areas to limits shown on site plan.
- E4.17.4 Do not deposit demolished materials in areas beyond that shown on site plan, in street areas, in areas as defined by Bylaws of City of Winnipeg.

- E4.17.5 Provide protection to ensure no damage to existing facilities, buildings, equipment, natural features, etc. situated on site. Make good any damage.
- E4.17.6 Protect trees indicated on Drawings, marked by Contract Administrator to remain, from damage to trunks, branches, roots. Do not disturb natural grades inside drip line of such trees.
- E4.17.7 Provide adequate protection to persons, property. Execute work in manner to avoid interference with use of, passage to, from adjoining buildings, facilities.
- E4.18 Hoarding
- E4.18.1 Provide all necessary hoarding, protective devices required by City of Winnipeg Bylaws.

#### **METHOD OF MEASUREMENT**

- E4.19 .No measurement will be made for these works

#### **METHOD OF PAYMENT**

- E4.20 All items in this section shall be paid for within the Contract Unit Price for Demolition and Salvage completed in accordance with the drawings and specification and to the satisfaction of the Contractor Administrator.

## **E5. CONCRETE PILES**

### **DESCRIPTION**

- E5.1 This Specification shall cover the supply and installation of concrete piles.
- E5.2 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.

### **MATERIALS**

- E5.3 General
- E5.3.1 Refer to Structural (S) Drawings for details

### **CONSTRUCTION METHODS**

- E5.4 Cast-in-Place Piles
- E5.4.1 The Contractor shall investigate the site conditions, available soil logs and the drawings to determine the best method of installing the piles. The method of installation shall be the responsibility of the Contractor.
- E5.4.2 The Contractor shall satisfy the Contract Administrator that his proposed procedures are in accordance with the best practice and will result in piles being installed as shown on the drawings.
- E5.5 Layout
- E5.5.1 Piles shall be located as shown on the drawings. A qualified Surveyor shall establish a bench mark at readily accessible locations for reference in setting pile elevations.
- E5.6 Installation
- E5.6.1 Piles shall be drilled the size and depth indicated on the drawings. Excavated soil (resulting from the drilling operation) shall be removed from around the pile holes to ensure that it will not fall into the holes before or during concrete placement.
- E5.6.2 Reinforcement and concrete shall be placed as soon as possible after drilling. Clean, dry holes may be left open for up to 2 hours. Under no circumstances are piles to be left overnight prior to filling with concrete.
- E5.6.3 Concrete may be placed by the free fall method providing it is directed vertically on the centre line of the shaft and does not hit the sides of the shaft or reinforcement cage. If the diameter of the reinforcement cage is too small to allow free fall, an elephant trunk shall be used.
- E5.6.4 Sonotube forming, as required shall be used to extend pile shafts and/or to form a neat pile top.
- E5.6.5 The Contract Administrator shall be notified of the readiness of the piles for inspection. Piles will be inspected before reinforcing steel is placed.
- E5.6.6 Tolerances shall be as follows:
- (a) The maximum variation in location 50 mm in any direction from that shown on the drawings.

- (b) Deviation from vertical or indicated batter not be more than 2% out of plumb.
- (c) The surface elevation of the piles to be.  $\pm$  25 mm within the specified elevation.
- (d) Pile diameter not to be less than that specified.

E5.6.7 Reinforce all piles as detailed on the drawings. Refer to concrete notes for concrete requirements. Install each pile in a continuous pour.

E5.6.8 Vibrate top 4600mm of concrete in each pile.

E5.6.9 Sleeving where required shall be included in the piling contract.

E5.7 Quality Control

E5.7.1 Inspection

- (a) 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 the final acceptance of the specified 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.

#### **METHOD OF MEASUREMENT**

E5.8 No measurement will be made for these works

#### **BASIS OF PAYMENT**

E5.9 Concrete piles shall be paid for within the Contract Unit Price for Cast-in-Place Concrete Piles, measured as specified herein, which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this Specification.

## E6. CONCRETE

### DESCRIPTION

- E6.1 This Specification shall cover the preparation of Portland Cement Concrete for, and all concreting operations related to the construction of Portland Cement Concrete works as specified herein.
- E6.2 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.

### MATERIALS

- E6.3 General
- E6.3.1 Refer to Structural (S) Drawings for details
- E6.4 Testing and Approval
- E6.4.1 All materials supplied under this Specification shall be subject to inspection and testing by the Contract Administrator or by the Testing Laboratory designated by the Contract Administrator. There shall be no charge to the City of Winnipeg for any materials taken by the Contract Administrator for testing purposes.
- E6.4.2 All materials shall conform to CSA Standards as indicated on the drawings.
- E6.5 Admixtures
- E6.5.1 No admixtures, other than Air-Entraining Agent, shall be used without the written authorization of the Contract Administrator, unless otherwise specified in this Specification.
- (a) Air-Entraining Agent
    - (i) The air-entraining agent shall conform to the requirements of CSA Standard CAN3-A266.1-M78.
  - (b) Water-Reducing Agent
    - (i) If the Contract Administrator, authorizes the use of a water-reducing agent, it shall be Type WN and shall conform to the requirements of CSA Standard CAN3-A266.2-M78.
  - (c) Other Admixtures
    - (i) No other admixtures will be authorized for use in Portland Cement Concrete, unless authorized in writing by the Contract Administrator.
- E6.6 Curing Compound
- E6.6.1 Curing compound shall be a white-pigment liquid membrane-forming curing compound conforming to the requirements of ASTM Standard C309. Curing compound shall be applied at a rate of not less than one litre per 3.0 m<sup>2</sup> (one gallon per 150 ft<sup>2</sup>).
- E6.7 Formwork
- E6.7.1 Formwork materials shall conform to CSA Standard CAN3-A23.1-M77 and American Concrete Publication SP-4 "Formwork for Concrete".

E6.7.2 Form sheeting plywood shall be exterior Douglas Fir, concrete form grade, conforming to CSA 0121, a minimum of 20 mm thick.

E6.8 Void Form

E6.8.1 Void form shall be wax coated cardboard, honeycomb, 38 mm cell 50 KPa compressive strength at depth indicated.

## CONSTRUCTION METHODS

E6.9 Formwork and Shoring

E6.9.1 Formwork shall be designed, erected, braced and maintained to safely support all vertical and lateral loads until such loads can be supported by the concrete.

E6.9.2 Form accessories to be partially or wholly embedded in the concrete, such as ties and hangers, shall be a commercially manufactured type. The portion remaining within the concrete shall leave no metal within 50 mm of the surface when the concrete is exposed to view. Spreader cones on ties shall not exceed 25 mm in diameter.

- (a) Location of form ties on exposed walls to be reviewed and approved by the Contract Administrator.
- (b) Cones shall be removed from exposed surfaces. Do not patching of exposed cone tie holes unless directed by the Contract Administrator.

E6.10 Finishing of Formed Surfaces

E6.10.1 Final finish shall be as follows:

- (a) Walls, Beams, Stair Nosings, Curbs etc., - light sandblasted finish as directed by the Contract Administrator and as shown on architectural drawings.

E6.10.2 Sandblasting shall be as follows:

- (a) Exposed fine aggregate with occasional coarse aggregate at the surface with uniform colour. Average depth of cut 2 mm.
- (b) An initial test section shall be prepared and approved by the Contract Administrator prior to proceeding.

## METHOD OF MEASUREMENT

E6.11 .No measurement will be made for these works

## BASIS OF PAVMENT

E6.12 The supply and placement of concrete will be paid for at the Contract Unit Price for Cast-in-Place concrete Beams and Slabs, which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this Specification.

## **E7. SUPPLYING AND PLACING REINFORCING STEEL**

### **DESCRIPTION**

- E7.1 This Specification shall cover the supply, fabrication and placement of reinforcing steel.
- E7.2 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.

### **MATERIALS**

- E7.3 General
- E7.3.1 Refer to Structural (S) Drawings for details
- E7.4 Shop Drawings
- E7.4.1 Prior to commencing work on reinforcing steel fabrication, the Contractor shall furnish the Contract Administrator with shop drawings. The Contractor shall submit five (5) copies of the drawings to the Contract Administrator for approval. Two approved copies will be returned to the Contractor and all others retained by the Contract Administrator. When submitting shop and placing drawings, the Contractor shall notify the Contract Administrator in writing of changes made therein from the plans and Specifications.
- E7.4.2 The shop drawings shall include:
- (a) Reinforcing Placing Drawings showing size, location, spacing and identification of all bars and outline drawn to scale of all concrete surrounding steel.
  - (b) Bar lists showing all detail dimensions, number of bars, size, mass and location, prepared in accordance with recommendations of ACI "Manual of Standard Practice for Detailing Reinforcing Concrete Structures", ACI 315.

### **CONSTRUCTION METHODS**

- E7.5 Fabrication of Reinforcing Steel
- E7.5.1 Reinforcing steel shall be fabricated in accordance with CSA Standard G30.12M - Latest Edition the lengths and shapes as shown on the approved shop drawings.
- E7.6 Quality Control
- E7.6.1 Inspection
- (a) A minimum of 24 hours advance notice shall be given to the Contract Administrator prior to pouring of any concrete to allow for inspection of the reinforcement.
  - (b) All workmanship and all materials furnished and supplied under this Specification are subject to close and systematic inspection and testing the Contract Administrator, including all operations from the selection and production of materials through to final acceptance of the specified 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.

## **METHOD OF MEASUREMENT**

E7.7 No measurement will be made for these works

## **BASIS OF PAYMENT**

E7.8 The supplying and placing of Reinforcing Steel will be considered incidental to the supply and placement of Cast-in-Place Concrete and Cast-in-Place Concrete Piles, acceptably installed in accordance with this Specification and accepted by the Contract Administrator, and no separate payment will be made.



## **E8. MOISTURE/THERMAL CONTROL**

### **DESCRIPTION**

- E8.1 This specification shall cover all excavation, backfill and other related works
- (a) Waterproofing membrane (structural slabs and vertical surfaces as noted on the drawings)
  - (b) Damproofing membrane (building walls, planter walls and vertical granite surfaces as noted on the drawings)
  - (c) Insulation
- E8.2 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 other things necessary for and incidental to the satisfactory performance and completion of all work as herein after specified.

### **MATERIALS**

- E8.3 General
- E8.3.1 Refer to Structural (S) Drawings for details
- E8.4 Self-Adhering Sheet Waterproofing:
- E8.4.1 Self-adhering cold applied composite sheet membrane comprised of 1.4 mm of rubberized asphalt integrally bonded to a 0.1 mm film of high density cross laminated polyethylene. Acceptable product: W.R. Grace Bituthene 3000 or approved equal in accordance with B5.
- E8.5 Waterproofing Mastic:
- E8.5.1 Compatible with sheet and liquid waterproofing membrane materials. Single component rubberized asphalt based mastic. Acceptable product W.R. Grace Bituthene plastic or approved equal in accordance with B5.
- E8.6 Damproofing:
- E8.6.1 Solvent type fibrated asphaltic damproofing compound. Baker 710-11 Premium Grade Foundation Coating or approved equal in accordance with B5.
- E8.7 Rigid Insulation Adhesive:
- E8.7.1 Solvent type synthetic rubber-based trowel consistency insulation adhesive. Compatible with damproofing and insulation. Baker 230-21 Rigid Insulation adhesive or approved equal in accordance with B5.
- E8.8 Joint Sealant:
- E8.8.1 Multi-component polyurethane sealant. Sonneborne Sonolastic NP2 or approved equal in accordance with B5..
- E8.9 Rigid Insulation
- E8.9.1 Grade Beam Rigid Insulation shall be CGSB-51.20-M87 (Type 4).
- |                       |                       |
|-----------------------|-----------------------|
| Permeability:         | ASTM E96-80           |
| Compressive Strength: | ASTM D 1621-73 (1979) |
| Water Absorption:     | ASTM C177-76          |
| Thermal Resistance:   | ASTM C518-76          |

## **CONSTRUCTION METHODS**

### **E8.10 Workmanship**

- E8.10.1 Workmanship shall be in accordance with industry standards, and quality control should be exercised related to compatible sealant contact with adjoining materials.
- E8.10.2 Ensure a uniform, continuous thermal and vapour retarding effect. Co-ordinate work with other trades to ensure thermal barrier is achieved.
- E8.10.3 Install insulation to maintain continuity of thermal protection to building elements.
- E8.10.4 Cut and trim insulation neatly to fit. Butt joints tightly, offset vertical joints as required.
- E8.10.5 Mechanical fasteners shall be used and installed according to manufacturer's specifications.

### **E8.11 Quality Control**

- E8.11.1 Submittals
- E8.11.2 Specification sheets shall be submitted for review. Submittal shall indicate material, location of use, colour range, back-up requirements. No work shall be started until final approval by Contract Administrator.

## **METHOD OF MEASUREMENT**

- E8.12 No measurement will be made for this work.

## **BASIS OF PAYMENT**

- E8.13 The supply and placement of Moisture/Thermal Control components will be paid for within the Contract Unit Price for Moisture and Thermal Control, which price shall be payment in full for the supplying all materials and for performing all operations herein described and for all other items, incidental to the work included in this specification.

## **E9. UNIT PAVERS**

### **GENERAL**

E9.1 This Specification shall cover the supply and installation of unit pavers and bedding course of sand for areas as indicated on the Drawing. 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 other things necessary for and incidental to the satisfactory performance and completion of all work as specified and in accordance with CW 3335.

### **MATERIALS**

E9.2 Refer to Landscape (L) Drawings for details

E9.3 All materials shall conform to CW 3335 and this Specification. Where the two do not agree, this Specification shall take precedence.

E9.4 Sand

E9.4.1 In accordance with Specification CW 3335.

E9.5 Equipment

E9.5.1 All equipment shall conform to Specification CW 3335.

### **CONSTRUCTION METHODS**

E9.6 Construction methods shall conform to Specification CW 3335. All joints to be tight and not to be wider than 4mm.

### **METHOD OF MEASUREMENT**

E9.7 The supplying and placing of Unit Pavers shall be measured on a square metre basis for new and salvaged materials.

E9.8 The supply and placement of sand bedding for Unit Pavers is incidental to the works and no separate measurement and payment will be made.

### **BASIS OF PAYMENT**

E9.9 The supplying and placing of Unit Pavers shall be paid for within the Contract Unit Price for Unit Pavers as specified herein, which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this Specification.

## **E10. GRANITE**

### **GENERAL**

E10.1 This Specification shall cover the supply and installation of new granite caps for areas as indicated on the Drawings. 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 other things necessary for and incidental to the satisfactory performance and completion of all work as specified herein.

#### **E10.2 Submittals**

E10.2.1 Contractor to submit sufficient samples of granite to the Contract Administrator to show texture, finish and anticipated range of colour to be supplied.

E10.2.2 Contractor to submit shop drawings for granite caps for review and approval by Contract Administrator. Drawings to show all bedding, bonding, jointing and anchoring details and the dimensions and identifying number of each piece of granite. No final sizing or finishing shall be done until the shop drawings for that part of the work have been approved.

### **MATERIALS**

E10.3 All granite shall be of standard architectural grade, free of cracks, seams, or starts which may impair its structural integrity or function. Colour or other visual characteristics indigenous to the particular material and adequately demonstrated in the sampling will be accepted provided they do not compromise the structural or durability capabilities of the material. Texture and finish shall be within the range of samples approved by the Contract Administrator.

E10.4 Colour shall match existing granite veneer on the Council Building

E10.5 Granite Caps shall be dimensioned and finished as shown on the approved shop drawings.

E10.6 Mortar for setting shall be Kerabond dry-set mortar with Keralastic polymer additive or approved equal in accordance with B5..

### **CONSTRUCTION METHODS**

#### **E10.7 Examination and Verification**

E10.7.1 Inspect and arrange for correction of defects or dimension errors in concrete surfaces which would affect stone work. Cooperate with stone supplier, verify job measurements needed for the preparation of shop drawings:

#### **E10.8 Dimensional Tolerances.**

E10.8.1 Panel thickness tolerance shall be +/- 3mm

E10.8.2 Panel Face Dimension +/- 1.5mm

E10.8.3 Face variation from rectangular +/- 1.5mm (maximum out of square, non-cumulative)

#### **E10.9 Flatness Tolerance**

E10.9.1 Variation from true plane, or flat surfaces, shall be determined by a 1200mm dimension in any direction on the surface.

E10.9.2 Such variations on polish, honed, and fine rubbed surfaces shall not exceed tolerances listed below or 1/3 of the specified joint width, whichever is greater. ON surfaces having

other finishes, the maximum variation from true plane shall not exceed the tolerance listed below or ½ of the specified joint width, whichever is greater.

E10.9.3 Polished, honed, or fine rubbed finishes 1.5mm

#### E10.10 Beds and Joints

E10.10.1 Pieces shall be bedded and jointed as shown on the approved shop drawings, and bed and joint surfaces shall be cut as follows:

- (a) Bed and joint surfaces shall be sawn through the full thickness of the granite piece.
- (b) Bed and joint surfaces shall be within +/-3% of 90 degrees to the face of the piece unless otherwise specified.

#### E10.11 Backs of Pieces

E10.11.1 Backs of all pieces shall be sawn to approximately true planes.

E10.11.2 Wherever clearly shown and detailed on the approved shop drawings, pieces shall be backed off to clear structural and mechanical components or other obstructions.

#### E10.12 Expansion and Control Joints

E10.12.1 Provide expansion and control joints as specified on the approved shop drawings

#### E10.13 Grouting

E10.13.1 Grout colour to match granite and to be approved by Contract Administrator.

#### E10.14 Shipping and Handling

E10.14.1 Finished granite shall be carefully packed and loaded for shipment using all reasonable and customary precautions against damage in transit. No material which may cause staining or discoloration shall be used for blocking or packing.

#### E10.15 Site Storage

E10.15.1 Upon receipt at the building site or storage yard, the granite shall be stacked on timber or platforms at least 75mm above the ground, and extreme care shall be taken to prevent staining during storage. If storage is to be for a prolonged period, polyethylene or other suitable plastic film shall be placed between any wood and finished surfaces, and shall be used also as an overall protective covering. Lewis holes shall be plugged during freezing weather to prevent the accumulation of water. Salt shall not be used for melting of ice formed in Lewis holes or on pieces, or for any purpose involving its contact with the granite.

#### E10.16 Cleaning and Protection

E10.16.1 Granite shall be shop cleaned at the time of final fabrication. After installation and pointing or caulking are completed, the Contractor shall carefully clean the granite, removing all dirt, excess mortar weld splatter, stains, and/or other site incident defacements.

E10.16.2 Stainless steel wire brushes or wool may be used, but the use of other wire brushes or of acid or other solutions which may cause discolouration is expressly prohibited. Fabricator should be contacted before cleaners other than detergents are used.

#### E10.17 Protection of Finished Work

E10.17.1 After the granite work is installed, it shall be the responsibility of the Contractor to see that is properly and adequately protected from damage.

E10.17.2 Boxing or other suitable protection shall be provided wherever required, but no lumber which may stain or deface the granite shall be used. All nails used shall be galvanized or non-rusting.

E10.17.3 All granite work in progress shall be protected at all times during construction by use of a suitable strong, impervious film or fabric securely held in place.

#### E10.18 Defective Work

E10.18.1 Any piece of granite showing flaws or imperfections upon receipt at the storage yard or building site shall be referred to the Contract Administrator for determination as to responsibility and decision as to whether it shall be rejected, patched or redressed for use.

### **METHOD OF MEASUREMENT**

E10.19 No measurement will be made for this work.

### **BASIS OF PAYMENT**

E10.20 The supplying and placing of Granite Caps and Granite Commemorative Stone shall be paid for within the Contract Unit Price for Granite Caps, as specified herein, which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this Specification.

## **E11. PLANTING BED PREPARATION**

### **E11.1 General**

- E11.1.1 This specification shall cover planting bed preparation. 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 other things necessary for and incidental to the satisfactory performance and completion of all work as specified.

## **MATERIALS**

- E11.2 All materials supplied under this Specification shall be of a type acceptable to the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.
- E11.3 The Contractor shall be responsible for the supply, safe storage and handling of all materials as set forth in this Specification. All materials shall be handled in a careful and workmanlike manner, to the satisfaction of the Contract Administrator.
- E11.4 Planting Soil
- E11.4.1 Planting Soil shall consist of black top soil, a fertile friable natural loam containing by volume not less than 4% and no more than 25% of organic matter for clay loams, and not less than 2% and no more than 25% for sandy loams, with an acidity value ranging from pH 6.0 to 8.0 and capable of sustaining vigorous plant growth. Topsoil is to be free of any mixture of subsoil, clay lumps and free of stones and other extraneous matter. It is not to contain couch or crab grass rhizomes.
- E11.5 Bark Mulch
- E11.5.1 Bark Mulch shall be wood chip mulch free of small branches and leaves and ranging in size from 5mm to 75mm long and 5mm to 20mm thick. Submit sample of mulch for approval by the Contract Administrator prior to shipping to site.
- E11.6 Water
- E11.6.1 Water shall be potable and free of minerals which may be detrimental to plant growth.
- E11.7 Weed Barrier
- E11.7.1 Weed Barrier shall be Nilex product DeWitt Pro5 weed barrier or approved equal in accordance with B5.. The fabric shall be supplied to the site in widths no less than 1.8 metres and free of defects.
- E11.8 Fertilizer
- E11.8.1 Fertilizer shall be complete synthetic slow release fertilizer with maximum 35% water-soluble nitrogen.
- E11.9 Filter Cloth
- E11.9.1 Filter cloth to be Terra Fix 270R.
- E11.10 Granular
- E11.10.1 Granular shall be clean and washed granite aggregate free of fines and small particles. Aggregate sizes to be no less than 25mm and no greater than 38mm diameter. Sample of granular material to be provided to Contract Administrator for approval prior to shipment to site.

## CONSTRUCTION METHODS

E11.11 The Contractor shall co-ordinate the installation in accordance with the Drawings and as specified herein.

### E11.12 Planting Bed Preparation

E11.12.1 General Contractor shall co-ordinate excavation and fill works for planting beds to ensure minimal additional excavation for shrub beds required by Landscaper. All remaining areas to be filled shall be in locations and to the depths shown on the drawings.

E11.12.2 Planting beds areas shall be filled with soil mixture. After filling top of bed shall be set to level shown on drawings. Soil should be lightly compacted and indicated soil depths shall be depths after light compaction.

E11.12.3 All areas and locations provided for planting shall be staked according to layout shown on the drawings. Fill / Excavation shall not proceed until the layout has been inspected and approved by the Contract Administrator. Fill / Excavation shall not be undertaken until all underground utilities have been located and protected.

### E11.13 Raised Planter Preparation

E11.13.1 For planting beds in raised planters install waterproofing, granular material, filter cloth, and styrofoam insulation in the planters as shown on the drawings and as described in this specification. Install topsoil to within 100 mm of top planter and bark mulch to within 50mm of top of planter.

### E11.14 Installation of Mulch

- (a) Bark mulch shall be spread to a consistent depth over entire planting bed area, taking care not to damage the plants.

## METHOD OF MEASUREMENT

E11.15 No measurement will be made for this work..

## BASIS OF PAYMENT

E11.16 Payment for Planting Bed Preparation shall be paid for within the Contract Unit Price for Planting Bed Preparation which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this specification.



## **E12. PLANTING OF SHRUBS AND GROUND COVERS**

### **GENERAL**

- E12.1 This specification shall cover the supply and installation shrubs and groundcovers.
- E12.1.1 The work to be done by the Contractor under this specification shall include the furnishing of all superintendence, overhead, labour, miscellaneous materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all work as hereinafter specified.
- E12.1.2 All plant material shall be randomly inspected at the source upon request of the Contract Administrator.

### **MAINTENANCE AND WARRANTY**

- E12.2 The Contractor shall be responsible for the maintenance of the planted material for a period of two (2) years from the date of award of Total Performance and commencement of the Two Year Maintenance Period. For any areas planted after September 15th, the maintenance period will commence on May 15th of the following year or such date as mutually agreed upon by all parties. Defective plants shall be replaced within three (3) days of notification to the Contractor.
- E12.3 The Contractor shall, at his/her expense, maintain the Work against any and all defects or deficiencies resulting from insect infestation, disease and mechanical damage due to improper handling, installation or maintenance, for a period of two (2) years from the date of the Certificate of Total Performance. Nursery stock damaged by vandalism or reasons beyond the control of the Contractor shall be replaced by the City of Winnipeg.
- E12.4 End-of-Warranty and Maintenance inspection will be conducted by the Contract Administrator.
- E12.5 The Contract Administrator reserves the right to request material replacement or extend the Contractor's Maintenance and Warranty responsibilities for an additional third year, if, at the end of the first or second year of maintenance, leaf development and growth are not sufficient to ensure future survival of the tree. Such determination is at the discretion of the Contract Administrator.
- E12.6 Replacements
- E12.6.1 During the Maintenance Period, the Contractor shall remove from Site any plant material that has died or failed to grow satisfactorily as determined by the Contract Administrator and replace as per Specifications within a maximum ten-day period from notification.
- E12.6.2 The Contractor shall extend Maintenance and Warranty on replacement tree for a period equal to the original Maintenance and Warranty Periods.
- E12.6.3 The Contractor shall continue such replacement, Maintenance and Warranty until plant material is accepted.

### **MATERIALS**

- E12.7 Plant Material
- E12.7.1 All nursery stock supplied shall be Canadian Prairie nursery grown, and of species and sizes indicated in the plant list on the drawings. Its quality shall be in accordance with the "Guide Specification for Nursery Stock of the Canadian Nursery Trades Association".

E12.7.2 Any nursery stock dug from native stands, wood lots, orchards, or neglected nurseries and which have not received proper cultural maintenance as advocated by the Canadian Nursery Trades Association shall be designated as "collected plants". The use of "collected plants" will not be permitted unless specified below. Nomenclature of specified nursery stock shall conform to the International Code of Nomenclature for Cultivated Plants and shall be in accordance with the approved scientific names given in the latest edition of Standardized Plant Names. The names of varieties not named therein are generally in conformity with the names accepted in the nursery trade.

E12.7.3 Plants larger than specified may be used if approved by the City of Winnipeg or his representative. The use of such plants shall not increase the contract price.

E12.7.4 Plant List East Side

Qty	Common Name	Botanical Name	Supply Size	Spacing
84	Calgary Carpet Juniper	<i>Juniperus sabina</i> 'Calgary Carpet'	#3 container, min 50cm spread, min 4 canes	700mm
70	Blue Rug Juniper	<i>Juniperus</i> <i>horizontalis</i> 'Wiltonii'	#3 container, min 60cm spread, min 4 canes	+/-1100mm
30	Autumn Red Maiden Grass	<i>Miscanthus</i> <i>sinensis</i> 'Autumn Red'	#2 container, 20- 25cm diameter	1000mm
30	Dwarf Korean Lilac	<i>Syringa meyeri</i> 'Palibin'	#3 container, min 60cm height, min 4 canes	900mm

E12.7.5 Plant List West Side

Qty	Common Name	Botanical Name	Supply Size	Spacing
87	Calgary Carpet Juniper	<i>Juniperus sabina</i> 'Calgary Carpet'	#3 container, min 50cm spread, min 4 canes	700mm
64	Blue Rug Juniper	<i>Juniperus</i> <i>horizontalis</i> 'Wiltonii'	#3 container, min 60cm spread, min 4 canes	+/-1100mm
27	Autumn Red Maiden Grass	<i>Miscanthus</i> <i>sinensis</i> 'Autumn Red'	#2 container, 20- 25cm diameter	1000mm
33	Dwarf Korean Lilac	<i>Syringa meyeri</i> 'Palibin'	#3 container, min 60cm height, min 4 canes	900mm

**METHOD OF MEASUREMENT**

E12.8 No measurement will be made for this work.

**BASIS OF PAYMENT**

E12.9 The supplying and installation of Shrubs and Groundcovers shall be paid within the Contract Unit Price for Planting of Shrubs and Ground Covers which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this specification.

## **E13. LANDSCAPE MAINTENANCE**

### **GENERAL**

E13.1 This specification shall cover the maintenance of shrubs and groundcovers, for a period of two years from the date of Total Performance. The Contractor shall furnish all labour, materials, equipment and services necessary to perform the work according to the drawings and specifications. In general, work shall include:

- (a) Spring cleaning
- (b) Fertilizing
- (c) Watering
- (d) Weed Control
- (e) Pest and disease control
- (f) Winter preparation

E13.2 Protection

E13.2.1 Prevent damage to fencing, other trees, landscaping, benches, buildings, pavement, surface and underground utility facilities.

E13.3 Maintenance Schedule

E13.3.1 The Contractor shall provide a complete written Maintenance schedule to the Contract Administrator prior to the issuing of the Certificate of Substantial Performance by the Contract Administrator.

E13.4 Certificate of Acceptance

E13.4.1 The Certificate of Acceptance will be issued upon completion of the two (2) year Maintenance Period, provided that:

- (a) Unacceptable shrubs shall be removed and replaced according to the required specifications. Maintenance of replacement items shall be extended for a period equal to the original Maintenance Period as specified herein. The Contract Administrator shall make further inspection after the additional Maintenance Period.
- (b) Replacement and Maintenance requirements shall continue until the material is accepted.

### **MATERIALS**

E13.5 General

E13.5.1 Materials are to conform to the requirements of related Specification sections.

### **CONSTRUCTION METHODS**

E13.6 General

E13.6.1 Program timing of operations to growth, weather conditions and use of Site.

E13.6.2 Each operation shall be done continuously and complete within reasonable time period.

E13.6.3 Store equipment and materials off site.

E13.6.4 Collect and dispose of debris or excess material on daily basis.

E13.7 Spring Cleaning

E13.7.1 Grass areas shall be raked and any dead vegetation, leaves and debris shall be removed. Heavy raking shall be done with a flexible grass rake on areas with "snow mold". Roll lightly areas where grass plants have lifted due to frost action.

#### E13.8 Fertilizing

E13.8.1 Fertilizer shall be spread evenly at frequency, ratio and rates as recommended by Manufacturer. Use approved mechanical spreading equipment. Check calibration to ensure specified rate is spread evenly. Water immediately after fertilizing. Rectify uneven spreading as soon as it becomes apparent.

#### E13.9 Watering - General

E13.9.1 Water shall be applied as required to all landscaped areas 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.

E13.9.2 Water shall be applied in a soft spray to avoid packing of soil.

E13.9.3 Do not impede use of sidewalk and other paved areas.

#### E13.10 Watering of Shrubs

E13.10.1 Water every other day for first month and every third day for second month after planting. Thereafter, water once per week between May 1 and October 15.

E13.10.2 A complete record is to be kept of each series of watering for all planted trees noting: 1) location, and 2) date of watering. This record is to be given to the Contract Administrator when requested.

#### E13.11 Weed Control of Trees and Shrubs

E13.11.1 Surface of planting beds shall be maintained free of weeds. Do not allow weeds to establish for a period longer than one (1 week).

E13.11.2 Obtain written approval of Contract Administrator prior to using any herbicides.

#### E13.12 Pests and Disease Control

E13.12.1 Obtain written approval of Contract Administrator prior to using any pesticide.

E13.12.2 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.

#### E13.13 Cultivating Shrub Beds

E13.13.1 Cultivate whenever required to keep top layer of soil, loose, friable and free from weeds. Any operation must be continuous without interruption.

E13.13.2 Cultivate surface of shrub bed, and soil areas around trees and shrubs.

E13.13.3 Remove weeds including their roots.

E13.13.4 Take care not to damage roots of shrubs or flowers. Use small hand tools for areas of closely planted shrubs.

E13.13.5 Collect and dispose of paper and refuse. Remove dead plants, leaves, branches, dead flowers and seed pods.

E13.13.6 Clean, by hand, areas that are covered with mulch. Loosen top layer of mulch without mixing it with soil underneath.

E13.13.7 Add mulch as required to maintain specified thickness.

E13.14 Shrub Pruning

E13.14.1 The Contractor shall provide a person with a valid Manitoba Tree Pruner's License for each Work crew or Work Site.

E13.14.2 Employ clean sharp tools. Make cuts co-incident with the 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.

E13.15 Winter Preparation

E13.15.1 Rake and assemble leaves. Remove from site.

E13.15.2 Ensure adequate moisture in root zones prior to freeze-up.

E13.15.3 Apply anti-desiccant to evergreen trees susceptible to winter desiccation.

**METHOD OF MEASUREMENT**

E13.16 No measurement will be made for this work.

**BASIS OF PAYMENT**

E13.17 Landscape Maintenance shall be paid within the Contract Unit Price for Landscape Maintenance which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this specification.

(a) First Year

(b) Second Year

## **E14. HANDRAILS**

### **GENERAL**

- E14.1 This Specification shall cover the supply and installation of handrails as indicated on the Drawings. 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 other things necessary for and incidental to the satisfactory performance and completion of all work as specified.
- E14.2 Submittals
- E14.2.1 Contractor to submit shop drawings for all benches and handrails for review and approval by Contract Administrator.
- E14.2.2 Drawings to show layout, dimensions and finishing details.
- E14.2.3 No fabrication shall be done until the shop drawings for that part of the work have been approved.

### **MATERIALS**

- E14.3 The Contractor shall be responsible for the supply, safe storage and handling and installation of all materials set forth in this specification.
- E14.4 All materials shall be of a type accepted by the Contract Administrator.
- E14.5 Material for handrails:
- (a) Handrails to be fabricated from 316 stainless steel pipe (51mm O.D. x 6mm wall thickness).
  - (b) All welded joints to be seal welded and grinded smooth.
  - (c) Brush finish on bench bases and handrails after fabrication.
  - (d) Fasteners and concrete expansion anchors to be 316 stainless steel (10mm).

### **CONSTRUCTION METHODS**

- E14.6 Contractor to verify heights of all curbs on which bench bases and handrails are to be attached.
- E14.7 All handrail posts to be set plumb. Adjust bottom plates for handrails to suit curb profile as necessary.

### **METHOD OF MEASUREMENT**

- E14.8 No measurement will be made for this work.

### **BASIS OF PAYMENT**

- E14.9 The supply and installation of handrails shall be paid for at the Lump Sum Unit Price as specified herein, which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this Specification.

## **E15. ELECTRICAL**

### **DESCRIPTION**

E15.1 This specification shall cover the supply and installation of all required electrical items, as identified on the drawings and this specification.

Items of work shall include:

- (a) Demolition of existing electrical distribution is site for the existing tree configuration.
- (b) Installation of a new in ground landscaping box and junction box to extend the existing 2" PVC conduit to the new location.
- (c) Installation of a new cast in place box c/w six split wired receptacles. Box shall be oriented with the hinge on top.
- (d) Pull back of existing feeder to the exiting tree location through the existing 2" PVC conduit.
- (e) Installation of 18 #8 AWG RW90XLPE wires and a ground in the existing PVC conduit, extended out to the new location.
- (f) Supply and install a new NEMA 4X Distribution panel in the existing pump room.
- (g) Relocate the existing light standards on the Main Street and King Street entries in the pathway area as shown.

E15.2 The work to be done by the Contractor under this Specification shall include the furnishing of labour, materials, equipment, tools, supplies, storage, transportation, overhead, markup and all things necessary for and incidental to the satisfactory performance and completion of all works as hereinafter specified, and as described on the Drawings.

E15.3 Submittals

E15.4 Drawings to include electrical detail of panels, branch breaker type, quantity, ampacity and enclosure dimensions.

### **MATERIAL**

E15.5 General

E15.5.1 The Contractor shall be responsible for the supply, safe storage, and safe handling of all materials as set forth in this Specification. All materials shall be handled in a careful and workmanlike manner, to the satisfaction of the Contract Administrator.

E15.5.2 Electrical equipment shall be new and of the type and quality specified.

E15.5.3 Electrical equipment shall be CSA approved and shall carry the CSA label or CSA testing laboratory listing.

E15.5.4 Approval of material shall be requested other than that specified and shall be submitted to the Contract Administrator seven (7) working days before closing of tenders. Approval for materials will only be given where the Contract Administrator considers that the material is equal in quality and performance to the material specified.

E15.5.5 Requests for approval of materials shall be completed with manufacturer's data, specifications and information relating to the construction and performance of the apparatus. Requests submitted without sufficient supporting information will be rejected.

E15.6 Conduit and Fittings

E15.6.1 Conduit and Fittings shall be as follows:

- E15.6.2 All conduit and fittings embedded in concrete to be PVC.
- E15.6.3 Conduit and fittings within mechanical pump room or service tunnel may be RGS.
- E15.6.4 One hole steel straps to secure surface conduits 32 mm and smaller.
- E15.6.5 Two hole steel straps for conduits larger than 32 mm.
- E15.6.6 Beam clamps to secure conduits to exposed steel work. U-channel type supports for two or more conduits at 20 m intervals.
- E15.6.7 Fittings for raceways to CSA C22.2 No.18.
- E15.6.8 Fittings manufactured for use with conduit specified.
- E15.6.9 Manufacturer elbow where 90 deg. bends are required for 63 mm and larger conduits.
- E15.6.10 Raintight connectors fittings complete with O-rings for use on weatherproof or waterproof enclosures. Watertight couplings to be used for surface conduit installations exposed to water.
- E15.6.11 Weatherproof expansion fittings with internal bonding assembly suitable for 100 or 200 mm linear expansion as required.
- E15.6.12 Watertight expansion fittings with integral bonding jumper suitable for linear expansion and 20 mm deflection in all directions as required.
- E15.6.13 Weatherproof expansion fittings for linear expansion at entry to panel as required.
- E15.6.14 All penetrations to the mechanical pump room shall be sealed so that they are watertight.

#### E15.7 Wire and Cable

- E15.7.1 All wire and cables shall be as follows:
- E15.7.2 All wire and cable to be a minimum size of #12 AWG.
- E15.7.3 The new feeder shall be type RW90XLPE.
- E15.7.4 Conductors in conduit:
  - (a) Type RWU90
  - (b) Conductors
    - (i) Solid copper 10 AWG and smaller
    - (ii) Stranded copper 8 AWG and larger
  - (c) Insulation - Cross link polyethylene (XLPE), 90 °C
  - (d) Voltage rating 1000 V
- E15.7.5 Pull Wire: Type - 90 lbs. test polypropylene line

#### E15.8 Junction and Pull Boxes

- E15.8.1 All junction and pull boxes shall be as follows:
  - (a) PVC construction with screw-on flat covers for surface mounting.
  - (b) Gasketed covers where exposed to weather and/or water.
  - (c) All readily accessible audio system junction boxes to be single gang box with pad lockable coverplate.
  - (d) Acceptable manufacturer/model: IPEX/H886

#### E15.9 Panelboards



E15.9.1 Panelboards shall be as follows:

- (a) Panelboards to CSA C22.2 No. 29.
- (b) Panelboards to be product of one manufacturer throughout project.
- (c) All branch circuit breakers shall be rated for 10kA sym. interrupting capacity minimum.
- (d) Each circuit breaker shall be identified by permanent number identification as to circuit number.
- (e) Two keys for each panelboard exterior door shall be provided. Key panelboards alike.
- (f) Copper bus with full size neutral.
- (g) Finish trim and door shall be baked grey enamel.
- (h) All panelboard assembled shall be in weatherproof enclosure.
- (i) Breakers shall be as follows:
- (j) Breakers shall be with thermal magnetic tripping.
- (k) Branch circuit breakers shall be 15A-1p, unless otherwise indicated on drawings.
- (l) Panel shall be NEMA 4X

E15.9.2 Manufacturers

- (a) Acceptable manufacturers shall be Square D, Siemens and Westinghouse.

E15.10 Grounding

E15.10.1 All grounding shall be as follows:

References

- (a) Copper groundings conductors to CSA C.7.1.
- (b) Ground equipment to CSA C22.2 No. 41.

**EQUIPMENT**

E15.11 Grounding conductors system, circuit and equipment, grounding to be bare standard copper sized in accordance with the Canadian Electrical Code.

E15.12 Non-corroding accessories necessary for grounding system, type, size, materials as indicated, including but not limited to:

- (a) Grounding and bonding bushing
- (b) Protective type clamps
- (c) Bolted type conductor connectors.
- (d) Thermit welded type conductor connectors.
- (e) Bonding jumpers, straps
- (f) Pressure wire connectors.

**CONSTRUCTION METHODS**

E15.13 General

E15.13.1 Permits and Fees

- (a) The Contractor shall obtain all permits required for the electrical installation and pay all fees for permits and inspections as required for the electrical installation.

#### E15.14 Co-operation with Other Trades

- E15.14.1 Refer to Architectural, Structural and Mechanical drawings for construction details and co-ordinate electrical work with other trades.
- E15.14.2 The work shall be supervised at all times through a responsible and competent Supervisor.

#### E15.15 Drawings

- E15.15.1 Drawings are schematic but shall be followed as closely as the actual construction and work of other trades will permit. Relocate conduits or distribution equipment as required to conform to the actual construction of the building and the work of other trades. Obtain prior approval from Contract Administrator where relocation of the installation is required.
- E15.15.2 Data shown on the drawings are as accurate as possible on scale drawings. Exact location of each equipment shall be determined on site. Do not scale electrical drawings, refer to architectural drawings for dimensions, levels and lighting fixtures locations and similar architectural features.
- E15.15.3 Outlets, conduits or equipment shall be moved to any point within a 3.0 m radius of the point shown on the drawings when relocation is requested by the Contract Administrator. The work shall be done without additional cost providing the request for relocation was made before the work was substantially performed.
- E15.15.4 Connect electrical equipment listed on drawings or identified by a circuit number.

### **CONSTRUCTION REQUIREMENTS**

#### E15.16 Poured Concrete Construction

- E15.16.1 All necessary sleeves, inserts, anchors and fittings in poured concrete wall or blocks shall be provided and installed before concrete is placed.
- E15.16.2 Electrical work shall be co-ordinated with concrete work to ensure that electrical equipment to be located in poured concrete work is installed before concrete is placed.
- E15.16.3 All costs for cutting and patching required to install electrical work in poured concrete work shall be paid where electrical work was not completed before concrete was placed. Exposed electrical work will not be allowed unless prior approval is obtained from the Contract Administrator in writing.

#### E15.17 Excavating and Backfilling

- E15.17.1 Excavate and backfill shall be completed as required for electrical work unless otherwise noted on the drawings. Backfilling shall restore the excavated area to the original condition and shall include sodding where required.

#### E15.18 Cutting and Patching

- E15.18.1 The costs of all cutting and patching required for the installation of electrical work shall be paid.
- E15.18.2 Cutting and patching required for the installation of electrical work shall be done by the particular trade whose work is involved.
- E15.18.3 Obtain the approval of the Contract Administrator shall be obtained before arranging for any cutting. Patching shall restore the affected area to the original condition; materials used for patching shall be compatible with the original installation.

#### E15.19 Cleaning and Painting

E15.19.1 Dirt, paint spots, rust and corrosion shall be cleaned from all electrical equipment. All electrical equipment shall be cleaned and repainted as necessary to restore finish to new condition.

#### E15.20 Examination of Site and Construction Documents

E15.20.1 Prior to submitting a tender, the Contractor shall examine the site and local conditions which will affect the work. Refer to the architectural, structural mechanical, drawings and specifications for construction details to be certain that the electrical work can be satisfactorily carried out as specified. Claims for extra payments, resulting from conditions which could reasonably be foreseen during an examination of the site and/or documents, will not be recognized.

#### E15.21 Conduit and Fittings

E15.21.1 Conduits shall be installed as shown on the drawings.

- (a) Use PVC conduit in all locations.
- (b) Replace conduit if kinked or flattened more than 1/10th of its original diameter.
- (c) Dry conduits out before installing wiring.
- (d) Conduits shall be supported with 300 mm of entering any junction box or panelboard.
- (e) Watertight fitting shall be used for all conduits installed below grade.

#### E15.22 Wire and Cable

E15.22.1 Wiring shall be supplied and installed as indicated on drawings and as required for a complete operating system. Colour coding and identification for wiring shall be in accordance to Code requirements.

E15.22.2 Cable entering watertight junction box shall be with watertight connectors.

#### E15.23 Inspections

E15.23.1 Notification shall be given to the Contract Administrator for inspection or wiring installation prior to backfilling.

#### E15.24 Co-ordination

E15.24.1 Underground installation with utilities and underground work of other trades shall be co-ordinated.

#### E15.25 Junction and Pull Boxes

E15.25.1 Watertight junction boxes shall be supplied and installed as indicated on drawings. Conduit and wiring to junction boxes shall be properly sealed with silicon to prevent entry of water.

#### E15.26 Panelboards

E15.26.1 Load to circuits connected as indicated.

#### E15.27 Grounding

E15.27.1 A complete, permanent, continuous grounding system shall be installed including, electrodes, conductors, and accessories to conform to requirements of the local authority having jurisdiction over installation.

Artificial grounding electrodes shall be provided to suit the requirements of the inspection authorities.

## QUALITY CONTROL

### E15.28 Shop Drawings

E15.28.1 Shop drawings and wiring diagrams shall be submitted of all major electrical equipment including, panelboards, distributions, custom made equipment and other special items of electrical equipment to Contract Administrator for review. Manufacturing of equipment must not commence until shop drawings have been approved.

### E15.29 Inspection/Testing

E15.29.1 Electrical installation including electrical equipment supplied, installed or connected, shall be tested in the presence of the Engineer on completion of the work.

E15.29.2 Tests shall demonstrate that the equipment supplied, installed or connected will perform in a normal manner. The Contract Administrator shall be the final authority in determining the normal mode of operation of each system.

E15.29.3 Systems shall be free from short circuits, grounds, mechanical or electrical defects and shall have and insulation resistance not less than the requirements of the Canadian Electrical Code.

E15.29.4 Circuits shall be tested to ensure that the circuit numbers are as shown on the drawings and correct neutral connections have been made.

E15.29.5 A Certificate of Inspection and Approval shall be obtained from the Electrical Inspection Department on completion of the work. Submit Certificate of Inspection and Approval to Contract Administrator before final inspection of electrical work by the Contract Administrator.

### E15.30 Codes, Rules and Regulations

E15.30.1 Electrical installation shall be in accordance with the current edition of the Canadian Electrical Code, Provincial, Municipal and other codes, rules and regulations.

E15.30.2 Material and labor shall be supplied required to meet the requirements of these codes, rules and regulations even though the work is not shown on the drawings or mentioned in the specifications.

E15.30.3 Where this specification calls for better quality materials or construction than the minimum requirements of these codes, rules and regulations, the electrical installation shall be as shown on the drawings and as specified.

E15.30.4 Electrical installation shall be in accordance with the requirements of the electrical supply authority.

### E15.31 Operation & Maintenance Manuals

E15.31.1 Four neatly bound materials with hard covers, index section tabs shall be compiled containing:

E15.31.2 Shop drawings of electrical equipment, special apparatus, special structures, wiring diagrams and similar information.

E15.31.3 Manufacturer's installation, operation and maintenance instructions for each piece of equipment requiring adjustment or maintenance. Include simple instructions for normal use, maintenance schedules, servicing instructions, schematic and connection diagrams, parts and assembly lists, names and addresses of nearest parts and service suppliers.

E15.31.4 Submit manuals to the Contract Administrator prior to the completion of the work.

### E15.32 Record Drawings

- E15.32.1 A set of white prints on the job site shall be kept at all times on which shall be recorded all additions or deviations from the Contract documents. These to include locations of all junction and pull boxes, routing of feeder circuits, changes to circuit numbers and all conduit routings. Record all changes-to the work issued without drawings.
- E15.32.2 All changes recorded shall be transferred on the working drawings to sepias. Sepias shall provide a complete and accurate record of the actual electrical installation. Sepias shall be labelled "As-Built Drawings" and shall carry the Electrical Sub-contractors stamp or seal. Sepias shall be submitted to the Contract Administrator upon completion.
- E15.33 Identification Name Plates
- E15.33.1 Main distribution equipment, disconnect switches and similar equipment connected to the electrical systems shall be properly identified by means of engraved lamacoid nameplates.
- E15.33.2 Nameplates shall be large enough to include complete description of equipment with voltage and phase shown where applicable. Minimum size of nameplates shall be 25 x 75 mm with size of lettering to suit content and application, except for single gang devices which shall have 21 x 37 mm nameplates. Nameplates to be fastened on with screws.
- E15.33.3 Nameplates shall be black with white letters for all applications.
- E15.33.4 A complete list of all nameplates shall be submitted to the Contract Administrator for approval prior to placing the order for the nameplates.
- E15.33.5 Pressure indented adhesive strip nameplates are not acceptable and shall not be used.

#### **METHOD OF MEASUREMENT**

- E15.34 Electrical items will not be measured.

#### **BASIS OF PAYMENT**

- E15.35 The supplying and installation of Electrical items shall be paid within the Contract Unit Price for All Work, which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this specification.