



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 371-2010**

**ROTARY HERITAGE PARK - SITE WORKS**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 ROTARY HERITAGE PARK - SITE WORKS

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, July 8, 2010. .

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

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

### **B3. SITE INVESTIGATION**

B3.1 Further to C3.1, the Bidder may view the Site without making an appointment.

B3.2 The Bidder is advised that the existing gas line easement will impact the alignment of the pathway and should be reviewed on site and all required safety precautions for working around the gas line noted and adhered to.

### **B4. ENQUIRIES**

B4.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

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

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

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

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

### **B5. ADDENDA**

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

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

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

- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.2.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

## **B6. SUBSTITUTES**

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

B6.10 Notwithstanding B6.2 to B6.9, and in accordance with B7.7, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B14.1(a).

## **B7. BID COMPONENTS**

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

- (a) Form A: Bid;
- (b) Form B: Prices;

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

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

B7.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.

B7.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:

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

B7.5.1 Samples or other components of the Bid Submission 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 Submission.

B7.6 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.

B7.7 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).

B7.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to (204) 949-1178.

B7.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.

B7.8.2 Bids submitted by internet electronic mail (e-mail) will not be accepted.

## **B8. BID**

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

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

- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
- (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
- (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;

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

B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.

B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

B8.4 Paragraph 10 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;
- (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B8.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B8.4.2 All signatures shall be original.

B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

## **B9. PRICES**

B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B9.4 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

## **B10. QUALIFICATION**

B10.1 The Bidder shall:

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

B10.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

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

B10.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

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

B10.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B10.5 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

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

B11.1 Bids will not be opened publicly.

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/bidopp.asp>

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 9 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 for the time period specified in Paragraph 9 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 10 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 10 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.
- 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 B10 (pass/fail);
  - (c) Total Bid Price;
  - (d) economic analysis of any approved alternative pursuant to B6.
- 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.
- (a) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder is within the budgetary provision for the Work, no adjustment will be made to the Total Bid Price; or
  - (b) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder exceeds the budgetary provision for the Work, the Total Bid Prices of all responsive Bids submitted by responsible and qualified Bidders will be adjusted by progressively deducting items (i) through (ii) in the order listed, until a Total Bid Price within the budgetary provision is achieved.
    - (i) Item 7a) 1.8m Limestone Pathway;
    - (ii) Item 7b) 3.5m Limestone Pathway.
- 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.

B15.4 Notwithstanding C4, the City will issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.

B15.5 The Contract, as defined in C1.1, in its entirety shall be deemed to be incorporated in and to form a part of the Purchase Order notwithstanding that it is not necessarily attached to or accompany said Purchase Order.

## 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 regrading and including subdrains and catchbasins for existing sodded areas, construction of limestone pathway and supply and installation trees in tree vaults.

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

- (a) Removal of existing section of concrete sidewalk;
- (b) Supply and installation of catch basins and land drainage sewer;
- (c) Supply and installation of subsurface drains;
- (d) Supply and installation of grading, topsoil and sod;
- (e) Supply and installation of wood bollard fence;
- (f) Supply and installation of Summer water service;
- (g) Supply and installation of limestone pathway;
- (h) Supply and installation of site furniture;
- (i) Planter and tree vault preparation
- (j) Supply and installation of plant material; and
- (k) Supply and installation of granite mulch.

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

D3.1 The Contract Administrator is McGowan Russell Group Inc. , represented by:

Ms. Susan Russell  
Landscape Architect  
200-120 Fort St., Winnipeg, MB R3C 1C7  
Telephone No. (204) 956-0396  
Facsimile No. (204) 956-1265

D3.2 At the pre-construction meeting, Ms Russell 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

## **SUBMISSIONS**

### **D6. AUTHORITY TO CARRY ON BUSINESS**

- D6.1 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.

### **D7. SAFE WORK PLAN**

- D7.1 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.
- D7.2 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>

### **D8. INSURANCE**

- D8.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;

- (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- (c) all risks course of construction insurance in the amount of one hundred percent (100%) of the total Contract Price, written in the name of the Contractor and The City of Winnipeg, at all times during the performance of the Work and until the date of Total Performance.

D8.2 Deductibles shall be borne by the Contractor.

D8.3 The Contractor shall provide the Contract Administrator 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 seven (7) Calendar Days from notification of the award of Contract by Purchase Order.

D8.4 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.

## **D9. PERFORMANCE SECURITY**

D9.1 If the Contract Price exceeds twenty-five thousand dollars (\$25,000.00), 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.

D9.1.1 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.

D9.2 The Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of Purchase Order and prior to the commencement of any Work on the Site.

## **D10. SUBCONTRACTOR LIST**

D10.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than seven (7) Calendar Days from notification of the award of Contract.

## **SCHEDULE OF WORK**

### **D11. COMMENCEMENT**

D11.1 The Contractor shall not commence any Work until he is in receipt of a Purchase Order from the Award Authority authorizing the commencement of the Work.

D11.2 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 D6;
  - (ii) evidence of the workers compensation coverage specified in C6.15;
  - (iii) the Safe Work Plan specified in D7;
  - (iv) evidence of the insurance specified in D8;
  - (v) the performance security specified in D9;
  - (vi) the Subcontractor list specified in D10; and
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D11.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the Purchase Order.

## **D12. SUBSTANTIAL PERFORMANCE**

D12.1 The Contractor shall achieve Substantial Performance by September 20, 2010.

D12.2 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.

D12.3 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.

## **D13. TOTAL PERFORMANCE**

D13.1 The Contractor shall achieve Total Performance by September 27, 2010.

D13.2 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.

D13.3 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.

## **D14. LIQUIDATED DAMAGES**

D14.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City five hundred dollars (\$500.00) per Calendar Day for each and every Calendar Day following the day fixed herein for Substantial Performance during which such failure continues.

D14.2 The amount specified for liquidated damages in D14.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Substantial Performance by the day fixed herein for same.

D14.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

## **D15. SCHEDULED MAINTENANCE**

D15.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

- (a) Extended two year maintenance for plant material as specified in E32;
- (b) Sod Maintenance for 30 days as specified in E30.

D15.2 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**

### **D16. JOB MEETINGS**

D16.1 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.

D16.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

### **D17. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)**

D17.1 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**

### **D18. PAYMENT**

D18.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

## **WARRANTY**

### **D19. WARRANTY**

D19.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire two (2) years 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.

D19.1.1 For the purpose of Performance Security, the warranty period shall be one (1) year.

D19.2 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.

D19.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

**FORM H1: PERFORMANCE BOND**  
(See D9)

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. 371-2010

ROTARY HERITAGE PARK - SITE WORKS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT  
(PERFORMANCE SECURITY)  
(See D9)**

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

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 371-2010  
ROTARY HERITAGE PARK - SITE WORKS

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

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

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

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

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

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

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

Partial drawings are permitted.

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

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

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

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

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

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

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

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

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

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

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

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



## PART E - SPECIFICATIONS

### GENERAL

#### E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
L-1	Site Plan
C-1	Land Drainage (Civil)
L2	Rotary Heritage Park - Layout and Planting Plan
L3	Rotary Heritage Park - Details
C-101	Rotary Heritage Park - Summer Water Service
L4.1	Downtown Transcona Revitalization – Planting Plan
L4.2	Downtown Transcona Revitalization – Planting Details

#### E2. PROTECTION OF EXISTING TREES

- E2.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing trees, and trees within the Site, within the limits of the construction area. If the Contractor requires further information on these specifications, contact the City of Winnipeg Forestry Branch at 986-2004.
- All construction traffic shall be restricted to the limits of construction shown on the drawings.
  - Excavation equipment shall be track based.
  - For trees greater than 100mm in diameter, located within 3 meters of the limits of construction, attach wood strapping material having a minimum thickness of 25mm and minimum length of 2440mm around the tree trunks in a manner that will not harm the tree. Do not use nails or fasteners that penetrate the tree trunk. The width of the strapping may be reduced to suit the tree being protected. Length of strapping may be reduced to suit the tree being protected as approved by the Contract Administrator.
  - For trees less than 100mm in diameter, install PVC safety fencing around the tree to a 2.0m radius complete with installation hardware, to adequately support the safety fence. The 2.0m radius safety fence may be reduced to suit the tree being protected as approved by the Contract Administrator.
  - PVC Safety fencing is to be installed at the locations shown on the drawings and to the extent shown on the drawings
  - The operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the Work and shall be approved by the Contract Administrator prior to the commencement of Work. Equipment shall not be parked, repaired, refueled; construction materials shall not be stored, and earth materials shall not be stockpiled with

the driplines of the trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tree from the tree trunk to the tips of the outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.

- (g) Repair, replace and maintain tree protection materials during construction until such time no equipment will be working in the area.
- (h) Remove safely fencing and strapping material without harming the trees as soon as the construction and restoration Work is complete.

- E2.2 Obtain approval from the Contract Administrator to excavate within 2.0m of a tree.
- E2.3 Excavate in a manner to minimize damage to the tree root systems. Keep exposed roots in excavations and trenches moist or shaded. If stockpiling of excavated soil material is required, stockpile in areas away from the tree roots if possible.
- E2.4 All items of tree protection shall be considered incidental to the Work and shall not be measured or paid for separately.

### **E3. PROTECTION OF SURVEY INFRASTRUCTURE**

- E3.1 Notwithstanding clause 4 "Protection of Survey Bars" of the Standard Provisions: Current legislation, The Surveys Act, places the onus on those undertaking construction to protect the Survey Infrastructure from damage as a result of their activity.
- E3.2 Further to C6.26(g), at least 72 hours prior to the commencement of the On-Site Work the Contractor shall contact the City of Winnipeg, Geomatics Services Branch at 986-4826 (8:00 am to 4:00 pm Monday to Friday excluding holidays) to obtain underground clearance. Geomatics Services will locate and mark all known outline survey monuments and geodetic control monuments and confirm the physical condition of those monuments upon completion of construction, at no cost to the Contractor.
- E3.3 Where a survey post, bar or control monument lies in the line of the proposed Work and must be disturbed, the Contractor shall provide the Contract Administrator with 48 hours notice to permit referencing for future replacement, at no cost to the Contractor. Failure to provide the specified notice shall result in the Contractor paying for all costs associated with replacing or relocating the disturbed outline survey monuments and geodetic control monuments.
- E3.4 Survey monuments and geodetic control monuments at or adjacent to the Site, not in the line of the proposed construction, that are damaged or disturbed by the Contractor shall be replaced or relocated by the City or its agent and all associated costs shall be paid for by the Contractor. An approximate estimate of the costs involved to restore a legal survey monument is \$1,000 per bar and \$3,000 per control monument. Contractors must ensure their landscaping and other subcontractors are aware of this clearance procedure and the potential restoration costs.
- E3.5 Where possible, amounts owed to the City in accordance with the above will be deducted from any Protection of survey infrastructure payments to be made by the City to the Contractor.

### **E4. PEDESTRIAN SAFETY AND TRAFFIC MANAGEMENT**

- E4.1 During the project, pedestrian access shall be maintained at all times on public right of way and on adjacent properties. A clear pathway unobstructed from any materials or equipment must be provided. No pedestrian access is required on the construction site.
- E4.2 Vehicle access must be maintained at all times on public right of way and on adjacent properties.

## **E5. STAKES AND MARKS**

- E5.1 Further to C6.26(h), the Contractor will mark, to the extent he determines to be necessary, the location, alignment and elevation of the Work by means of stakes or marks, for review and approval by Contract Administrator. The Contractor shall make the completed Works conform to the lines and marks thus approved and indicated.
- E5.2 The Contractor shall notify the Contract Administrator immediately of the disturbance of any such stakes or marks. The cost of correcting any errors arising out of neglect of the Contractor to so notify the Contract Administrator shall be borne entirely by the Contractor, as well as the cost of replacing any disturbed stakes or marks.
- E5.3 Before commencing Work, the Contractor shall satisfy himself as to the meaning and correctness of all stakes and marks and no claims shall be entertained by the City on account of any alleged inaccuracies. If any error is suspected in the Drawings, Specifications or the directions of the Contract Administrator, Work shall be discontinued until the errors are rectified, but no claims shall be made on account of any delay occasioned thereby.
- E5.4 The Contractor shall determine and provide all dimensions and elevations measured from the stakes or marks

## **E6. WATER USED BY CONTRACTOR**

- E6.1 Notwithstanding CW 1120.3.7:
- E6.2 Water for use by the Contractor may be obtained from the City of Winnipeg waterworks system.
- E6.3 Should the Contractor wish to obtain water from a City hydrant, he shall make application either in person or by phoning the Permits Clerk at 986-3184 (8:30 am to 4:30 pm Monday to Friday excluding holidays). The Contractor shall advise the Permits Clerk of the hydrant he wishes to use. The Water Services Divisions of the Water and Waste Department will inspect the hydrant to ensure that the location is suitable and that the hydrant is in good working condition. If the requested hydrant is found to be unacceptable, arrangements will be made for the use of an alternate hydrant.
- E6.4 When the application has been approved, the Permits Clerk will contact the Contractor and issue the permit. The permit may not be issued the same day the application is made. The Contractor shall obtain the permit for hydrant use from the Customer Services Division of the Public Works Department, 107-1155 Pacific Avenue. Permit fees will be charged in accordance with the latest version of the Waterworks By-law. All water used shall be metered and protected against contamination by the use of approved backflow prevention devices. The City will rent the meter to the Contractor at the rate established by the Waterworks By-law. The Contractor shall provide a lockable box, piping, valves, and backflow prevention equipment in accordance with Waterwork's guidelines. The backflow preventer(s) must be tested by a plumber licensed to test backflow preventers. The Permits Clerk can provide a list of licensed plumbers and additional information on the requirements for obtaining a use of hydrant permit.
- E6.5 The Contractor shall pay for all water used in accordance with the Waterworks By-law. Sewer charges will not be assessed for water obtained from a hydrant.

## **E7. SURFACE RESTORATIONS**

- E7.1 The Contractor shall temporarily repair any Work commenced and not completed in the 2010 construction season to the satisfaction of the Contract Administrator. The Contractor shall maintain the temporary repairs in a safe condition as determined by the Contract Administrator until permanent repairs are completed. The Contractor shall bear all costs associated with temporary repairs and their maintenance.

## **E8. TEMPORARY RELOCATION OF AFFECTED STRUCTURES**

- E8.1 The Contractor shall temporarily relocate any portable structure such as benches, waste receptacles, picnic benches, etc., which will interfere with the construction of the Work and are not identified as items to be relocated. The Contractor Administrator will identify the temporary locations for the portable structures. Following the completion of the applicable Work the Contractor shall replace the structures to the locations designated by the Contract Administrator. These relocations shall be considered incidental to the associated Works and no separate measurement for payment will be made.

## **E9. TRUCK WEIGHT LIMITS**

- E9.1 The City shall not pay for any portion of Material which results in the vehicle exceeding the maximum gross vehicle weight allowed under *The City of Winnipeg Traffic By-Law*, unless such vehicle is operating under special permit.

## **E10. PRE-CONSTRUCTION MEETING**

- E10.1 The Contractor shall not begin the Work under this Contract. until a pre-construction meeting has been held between representatives of the Contractor, The City of Winnipeg, and the Contract Administrator.

## **E11. ACCESS**

- E11.1 All access is to be on the designated routes through the Site. These routes will be determined at the Pre-Construction Meeting.
- E11.2 Access to the Site as required by the Contractor shall be provided and maintained by the Contractor at his own expense and approved by the Contract Administrator.
- E11.3 The Contractor's operations shall be limited to the minimum area necessary for undertaking the Work and he shall be responsible for all damage resulting from his Work on private property. The Contractor shall take such measures as are necessary to ensure safe and convenient pedestrian ingress and egress in maintained to private properties while he is working near them. Any damage caused by the negligence of the Contractor or his Sub-Contractors to the adjacent Works or properties, shall be promptly repaired by him at his own expense, to the satisfaction of the Contract Administrator.
- E11.4 All necessary precautions shall be exercised by the Contractor so as not to remove, disturb, or damage any existing trees, shrubs, sod, pavements, streets, roads, boulevards, poles, hydrants, water pipes, gas pipes, electrical wires, cables, conduits, sewers or other existing facilities and equipment at the Site of the Work. For all damage incurred in the performance of the Work (either directly or indirectly), the Contractor shall either replace and repair such damage, whichever may be deemed necessary in the opinion of, and acceptable to, the Contract Administrator and the cost of which shall be borne entirely by the Contractor.

## **E12. SITE CONDITION**

- E12.1 The Contractor shall examine the Site and make themselves familiar with the existing conditions (both above and below grade) and nature of Work to be done.
- E12.2 Surface and sub-surface conditions shown on the Drawings and included herein are provided for general information and variations there from shall not affect the terms of the Contract.
- E12.3 The Contractor shall set all necessary control lines, benchmarks, survey, elevation stakes and layout in accordance with the individual Site conditions and in consultation with the Contract Administrator.

### **E13. LAYOUT OF WORKS**

- E13.1 The Contractor will Work from layout information provided in the construction drawings and will be responsible to provide a full time experienced survey crew to layout and continuously check the locations and elevations of all components and paving of the Work included in this Contract.
- E13.2 The Contractor must provide all necessary survey equipment in good operating conditions.
- E13.3 The Contractor shall supply all materials (painting, stakes, ribbon, markers, etc) and labour necessary for the accurate location and setting out of the Work.
- E13.4 From time to time the Contract Administrator may have a survey crew on the Site, but they will check the Work done by the Contractor's survey personnel only. The checking of the Work by the City's surveyors will not relieve the Contractor of any responsibility of the correctness of the Work. Should any structure or paving or any part thereof be installed in any location other than that shown on the Drawings, then the error shall be rectified by the Contractor all at his own expense and at the satisfaction of, and in a manner specified by the Contract Administrator.

### **E14. EXISTING UNDERGROUND SERVICES**

- E14.1 The Contractor's attention is drawn to the existing underground lines or services that may be located in the area of the Work.
- E14.2 The Contractor shall take all necessary precautions when performing the Work to ensure that no damage is done to these existing services.
- E14.3 No responsibility will be assumed by the City for correctness or completeness of the Drawings, when provided, with respect to the existing utilities, pipes or other objects either underground or on the surface, shall not be liable for the incorrectness and inadequacy thereof. It shall be the responsibility of the Contractor to determine the location of all such utilities, pipes and other objects and to make good any damage done to them.
- E14.4 All costs in connection with this item including location of the existing service, repairs to any existing services damaged by the construction operation, etc. shall be included in the unit prices bid for supply and installation of the items included under this Contract.
- E14.5 The Contractor will be required to make his own arrangements in connection with the temporary use of lighting, power, gas, sewer, water or other utilities, and pay all costs in connection therewith.
- E14.6 All necessary permits, fees and other like expenses as well as the cost of temporary connections to existing facilities shall be arranged and paid for by the Contractor.

### **E15. EXPOSING EXISTING UNDERGROUND SERVICES AND UTILITIES**

- E15.1 The exact location and depth of some of the existing underground services and utilities within the project limits are unknown.
- E15.2 Therefore, the Contractor shall supply all labour, equipment and materials required to expose all underground services and/or utilities sufficiently far enough in advance of the proposed Works to permit the Contract Administrator where necessary, to adjust the alignment and grade to avoid existing lines and ducts.
- E15.3 All costs in connection with this item of Work shall be included in the unit price bid for the various bid items.

## **E16. EXISTING CURB STOP BOXES**

- E16.1 During the removal and installation of the concrete pavement, asphalt pathway and unit paving, the Contractor shall take all necessary precautions when Working in the vicinity of any existing curb stop boxes.
- E16.2 All existing curb stop boxes not in use as determined by the Contract Administrator shall be abandoned by removing existing curb stop boxes. All costs associated with the abandoning of curb stop boxes are incidental
- E16.3 Any existing curb boxes requiring final adjustments (horizontal and/or vertical) are incidental.
- E16.4 Any curb stop boxes damaged as a result of the Contractor's operation shall be replaced at his own cost.

## **E17. PRODUCT APPROVALS**

- E17.1 The Contractor shall, following award, prepare a complete list of all material to be used on the project and submit the list to the Contract Administrator seventy two (72) hours prior to start of construction.
- E17.2 The Contractor shall only use material which has been approved by Specification CW3710 or by the Contract Administrator. The list shall provide the product, the manufacturer and the supplier.
- E17.3 Other than required to be done by the Contractor under the Work of this contract, all necessary precautions shall be exercised by the Contractor so as not to remove, disturb, or damage any existing plant material, pavements, streets, roads, boulevard, poles, hydrants, water pipes, gas pipes, electrical wires, cables, conduits, sewers or other existing facilities and equipment at the Site of the Work. For all damage incurred thereto in the performance of the Work, the Contractor shall upon instructions from the Contractor Administrator, either replace or repair such damage, whichever may be deemed necessary in the opinion of, and acceptable to the Contract Administrator and the costs of which shall be borne entirely by the Contractor.
- E17.4 All workmanship and materials furnished and supplied under this Specification are subject to close and systematic inspection and testing by the Contract Administrator. The Contract Administrator reserves the right to reject any materials or Works which are not in accordance with the requirements of the Specifications.
- E17.5 The Contractor shall wholly be responsible for the supply, safe storage, and handling of all materials set forth in this specification, and the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given.

## **E18. DAMAGE TO STREETS AND STRUCTURES**

- E18.1 The Contractor is to be advised of the following existing Site features to be retained and protected to the City of Winnipeg Standards:
- |             |                             |                 |
|-------------|-----------------------------|-----------------|
| a) trees    | e) light standards          | i) hydro poles  |
| b) curbs    | f) fire hydrants            | j) catch basins |
| c) sidewalk | g) street signs             | k) curb inlets  |
| d) sod      | h) all underground services | l) fences       |

## **E19. PERMITS, NOTICES, LICENCES, CERTIFICATIONS, LAWS, AND RULES**

- E19.1 The Contractor shall give all necessary notices, obtain all necessary permits and pay all fees in order that the Work may be carried out. The Contractor shall submit all plans required by any inspection authority and obtain approval of same before proceeding with the Work, and pay any cost attached to the inspection of such plans.
- E19.2 The Site Development Permits (including lot grading and damage deposits) will be obtained and paid for by the City of Winnipeg Planning, Property and Development Department prior to

commencement of construction. A copy of this permit will be provided to the Contractor upon award of Contract.

E19.3 The Contractor shall comply with all laws, ordinances, rules, and regulations that would relate to the Works.

## **E20. MATCHING EXISTING GRADES**

E20.1 Wherever the proposed paving, or sod meets existing pathway/pavement, curb edge, or property line, the Contractor shall construct the proposed element to an acceptable grade, as directed by the Contract Administrator, to ensure that proper drainage and accessibility are maintained.

## **E21. EXCAVATION, REMOVALS, ROUGH GRADING AND SUBGRADE COMPACTION**

E21.1 Further to City of Winnipeg Specification CW 3110 and CW 3170 due to the extent and nature of underground services in the park area, the Contractor shall be permitted to use only backhoe type equipment when excavating sub-grade material.

### Description

E21.2 The Work of this section comprises the furnishing of all labour, equipment and materials required to complete the excavation and related Work including, but not necessarily confined to, the following:

- (a) Removal and disposal of existing concrete sidewalk.
- (b) Excavation, removals, disposal, subgrade compaction and rough grading of the existing Site for the construction of limestone pathway and sodded areas to the design requirements noted on the Drawings, approved on Site by the Contract Administrator, less the appropriate surface finish allowance.
- (c) Stockpile suitable, approved material on Site for reuse (clean topsoil, clean earth fill and gravel fill). Remove and dispose of unsuitable material.
- (d) Excavation, removals, and disposal of unsuitable subgrade and replacement with compacted granular base material.

E21.3 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work hereinafter specified.

### Equipment

E21.4 All equipment shall be of a type approved by the Contract Administrator and shall be kept in good Working order.

### Construction Methods

E21.5 The Contractor shall restrict his activities strictly to within the limits of the Works, unless receiving prior written approval from the Contract Administrator.

E21.6 The Contractor shall construct the Site within the limits indicated to the design elevations and gradients noted on the Drawings, less the appropriate surface treatment depths specified and shall excavate, remove and dispose of all unsuitable materials of whatever nature encountered.

E21.7 The Contractor shall construct all sub-grades in accordance with Specification CW 3110. Excavation will be performed as per Item 9.1 of CW 3110. The Contractor shall remove existing pavement in accordance with 9.2 of CW 3110. Unsuitable Excavated material shall be disposed of as per Item 9.3 of CW 3110. All surplus material will be disposed of in accordance with Item 9.3 of CW 3110.

- E21.8 The Contractor shall restrict his activities strictly to within the limits of the Work, unless receiving prior written approval from the Contract Administrator. The Contractor shall take all precautions to prevent damage to traffic structures, pole lines, existing trees, Site services and adjacent property and he shall be liable for any damages occurring in the performance of this Work.
- E21.9 The Contractor shall examine the Site and make themselves familiar with the existing conditions and the nature of the Work to be done.
- E21.10 Prevent damage to surface or underground utility lines which are to remain. Make good any damage.
- E21.11 Contractor to breakout and remove existing section of concrete sidewalk and base materials as indicated on the Drawings. Dispose of material off Site in legal manner.
- E21.12 The Contractor shall excavate to the design grades shown less the appropriate allowance for surface treatment and shall excavate, remove and dispose of all unsuitable materials of whatever nature encountered.
- E21.13 Excavated or graded materials to be approved before use as fill for grading Work. Protect such approved material from contamination. Stockpile in approved locations on Site. Protection and stockpiling are incidental to unit prices bid for excavation, removals and rough grading.
- E21.14 All foundations shall be removed to full depth to the satisfaction of the Contract Administrator. Fill all holes resulting from removals with compacted clay fill in sodded areas and compacted granular fill in paved areas.
- E21.15 The Contractor shall excavate topsoil as per CW 3170 Section 9.2. Topsoil excavation is incidental to the unit prices bid for limestone pathway and sodded areas.
- E21.16 The Contractor shall ensure that upon completion of the removal operations the Site is left in a neat condition free from debris, etc. for approval by the Contract Administrator prior to placing base courses and clean fill.
- E21.17 Except for drainage swales, berms and embankments indicated, the design gradient for all other areas shall be considered to be straight grade between the design elevations shown. Changes in grade at swales, berms, embankments and field shall be gently contoured as directed by the Contract Administrator to provide future ease of grass mowing operation.
- E21.18 The Contractor is advised that there may be useable topsoil and earth fill on Site. All suitable material will be reviewed and approved by the Contract Administrator and then re-used on Site. The re-use of this material on Site may reduce the quantity of imported topsoil and clean earth fill required. The Contractor shall re-use existing Site material prior to delivering new material to Site.
- E21.19 No direct payment will be made for placing and grading of existing fill as all costs for this Work shall be incidental to the Work.
- E21.20 Compaction shall include the use of sheep's foot or other suitable compaction equipment as approved by the Contract Administrator to achieve a minimum compaction of 98% Standard Proctor Density below all paved and play areas, and 95% Standard Proctor Density in all other areas disturbed under this Contract. Compaction is incidental to the unit prices bid for limestone pathway and sodded areas
- E21.21 The Contractor shall construct the compacted sub-grade surface to the following depths below the grades shown on the Drawings for each area:
- |     |                             |        |
|-----|-----------------------------|--------|
| (a) | 3.5m wide limestone pathway | 253 mm |
| (b) | 1.8m wide limestone pathway | 178mm  |
| (c) | Sodded areas                | 100mm  |
| (d) | Tree vault                  | 1150mm |

- E21.22 Excavation for all items of new construction are incidental to the unit prices bid under this contract. No separate payment will be made.
- E21.23 Following earth moving, rough grading and compaction the Work areas shall be fine graded to provide a maximum deviation of 50mm in 10 metres from the design grade with no low areas to hold water. The finished surface of all disturbed areas shall be dragged and smoothed in such a manner that there are no loose soil particles greater than 50mm in maximum dimensions.
- E21.24 If required and at locations directed by the Contract Administrator, the Contractor shall excavate and remove unsuitable subgrade material and replace it with compacted granular material in accordance with Specification CW3110. Only areas beyond required excavation for paved areas will be measured and paid.
- E21.25 The Contractor shall load and haul all removed material from the Site and dispose of these materials legally at a dump located by the Contractor and approved by the Contract Administrator. Any materials dropped or spilled on any streets during the hauling operations shall be promptly cleaned up at the expense of the Contractor, to the satisfaction of the Contract Administrator.
- E21.26 The Contractor shall ensure that upon completion of the removal operations, the Site shall be left free of any hazardous depressions and in a neat condition.
- E21.27 The Contractor shall dispose of all unsuitable and excess materials in accordance with City of Winnipeg Specifications. Disposal is incidental to the unit prices bid.

#### Measurement and Payment

- E21.28 Removal of concrete sidewalk will be measured and paid for at the contract unit price per square meter for "Remove and dispose of concrete sidewalk" as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification. The total number of metres to be paid for shall be the total number removed in accordance with this Specification as computed from measurements made by the Contract Administrator.
- E21.29 Removal of unsuitable subgrade and replacement with compacted granular base will be measured and paid for at the contract unit price per cubic meter for "Remove existing unsuitable subgrade and replace with compacted granular base" as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification. The total number of cubic metres to be paid for shall be the total number removed and replaced in accordance with this Specification as computed from measurements made by the Contract Administrator.

## **E22. SUB-SURFACE DRAINAGE**

### Description

- E22.1 This Work shall consist of supply and placing a geocomposite prefabricated drain system as shown in the plans. The drainage system shall be installed in accordance with these Specifications and in the locations and dimensions as shown on the plans or as specified by the Contract Administrator. The quantities of drain as shown on the plans may be increased or decreased at the direction of the Contract Administrator based on actual Site conditions that occur during construction of the project. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the Work.

### Materials

- E22.2 The drain conduit shall be of flexible, prefabricated, rounded rectangular shaped, composite product. The drain conduit shall be wrapped with a non-woven geotextile and shall be a non-woven needle-punched construction and consist of long-chain polymeric fibers composed of polypropylene, polyethylene or polyamide. The fibers shall be oriented into a multi-directional

stable network whereby they retain their positions relative with each other and allow the passage of water as specified. The fabric shall be free of any chemical treatment or coating, which reduces permeability and shall be inert to chemicals commonly found in soil. The geotextile shall conform to the following minimum average roll values.

Weight	ASTM D-3776	3.0 - 4.0
Tensile Strength	ASTM D-4632	100 - 130
Elongation %	ASTM D-4632	50 - 70
Puncture, lb	ASTM D-751	35 - 60
Mullen Burst, psi	ASTM D-3786	110 - 215
Trapezoidal Tear, lb	ASTM D-4533	40 - 42
Coefficient of Permeability	ASTM D-4491	.2 - .4 cm/sec
Flow Rate, gpm/ft <sup>2</sup>	ASTM D-4491	100 - 140
Permittivity, 1/sec	ASTM D-4491	1.3 - 2.0
Apparent Opening Size	ASTM D-4751	60/70 Max. US Std Sieve Opening
Seam Strength, lb/ft	ASTM D-4595	100
Fungus	ASTM G-21	No growth

E22.3 The drainage core shall be made of a high-density polyethylene. The core shall be constructed using interconnected corrugated pipes that define and provide the flow channels and structural integrity of the drain. The geotextile shall function only as a filter. The core of the edge drain shall conform to the following physical property requirements.

Thickness, inches	ASTM D-1777	1.0
Flow Rate, gpm/ft <sup>***</sup>	ASTM D-4716	30
Compressive Strength, psf	STM D-1621 (modified sand method)	6000
Pipe Stiffness, pii	ASTM D-2412	100

\*\*\* At gradient = 0.01, pressure = 10 psi for 100 hours.

E22.4 The fittings used with the edge drain shall be of a "snap together" design. In no case shall any drainage product be joined without the use of the manufacturers connector designed specifically for the purpose.

E22.5 Drainage pipe shall be Multi-Flow or approved substitute in accordance with B6. Size shall be 150mm. All fittings shall be sized to fit approved for use with Multi-Flow or approved substitute by the manufacturer. Cleanouts shall be provided as indicated on the drawing.

E22.6 The pipe for edge drain outlet laterals shall be either PVC pipe meeting the requirements of ASTM D-2729 or ASTM F-949, or high-density polyethylene pipe meeting the requirements of AASHTO M252. 2.4 A rodent screen made of 7.6mm by 7.6mm square opening size, 1.6mm gauge, stainless steel or galvanized, welded wire mesh shall be installed in each outlet lateral line. When using galvanized welded wire mesh, the rodent screen shall be galvanized after it has been formed to the shape and dimensions required.

E22.7 Backfill shall be course sand whose particle size is defined as less than 5% retained on a #10 screen, and less than 5% passing through a # 30 screen. (US Std. Sieve) In no case shall more than 1% pass a #60 screen.

#### Installation

E22.8 The layout of the subdrain is to be marked on Site and approved by the Contract Administrator prior to trenching.

- E22.9 Trenches are to be excavated with a trenching machine or by hand. Locations where the trench has to cross existing utilities, existing irrigation pipes and all other subsurface pipes or fixtures are to be excavated by hand. The amount of trench excavated at any time shall not exceed the amount of drain that can be set and backfilled completely prior to the end of that working day. The trench shall be of the width specified on the drawings.
- E22.10 The bottom surface of the trench is to be free of loose particles and is to have the slope as shown on the drawings. Over excavation in the bottom of the trench shall be backfilled and compacted to 95% standard proctor density to the proper grade with excavated material prior to the placement of the drain. Where the trench is to pass through an area of existing sod, the excavated material is not to remain on the grassed surface for a period longer than 24 hours. Excavated material if not required as fill elsewhere on the Site shall be removed from Site is disposed of legally.
- E22.11 Multi-Flow drain pipe is to be placed in trench using Multi-Flow centering device. Trench is to be backfilled with coarse sand to the surface. Backfill shall be placed in maximum of 45cm loose lifts. Backfill is to be lightly tamped into place and watered. In the case of trenches extending into existing grassed areas coarse sand backfill is to be seeded with grass seed.
- E22.12 The contractor is to maintain top surface of the backfilled sand even with the surrounding grade during the grow in phase.
- E22.13 Fittings for the drain shall be installed in accordance with the manufacturer's recommendations.
- E22.14 Any damaged edge drain or outlet lateral shall be replaced or repaired by splicing in an undamaged section of drain at the Contractor's expense.
- E22.15 The Contractor shall be responsible for restoration of any affected surfaces during the Work under this section. There shall be no separate measurement or payment for restoration Work required as a result of this Work.

#### Measurement and Payment

- E22.16 Subsurface Drainage will be measured and paid for at the contract unit price per meter for "Subsurface drainage" as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification. The total number of metres to be paid for shall be the total number installed in accordance with this Specification as computed from measurements made by the Contract Administrator.

### **E23. CRUSHED LIMESTONE PATHWAY**

#### Description

- E23.1 Further to CW 3110 and CW 3130 the Work of this section comprises the furnishing of all labour, equipment and materials incidental and required to complete the construction of limestone pathway as shown on the drawings and as hereinafter specified.

#### Related Work

- E23.2 Excavation, Removals, Rough Grading and Subgrade Compaction.

#### Materials

- E23.3 Crushed granular material to meet the following requirements:
- (a) All Materials supplied under this Specification shall be of a type approved by the Contract Administrator and shall be subject to inspection and testing by the Contract Administrator;
  - (b) Crushed limestone consisting of hard, durable, angular particles, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.

- (c) Granular Levelling Course - Gradations to be within limits specified below when tested to ASTM C136-83 and have a smooth curve without sharp breaks when plotted on semi-log grading chart;

<u>ASTM Sieve Designation</u>	<u>% Passing</u>
20mm (3/4")	100
12.5mm (1/2")	50-75
9.5mm	30-50
6.0mm	10-20
0.425	0-5
0.18	nil
0.075	nil

- (d) Granular Base Course – 2" (50mm) down limestone  
(e) Crushed Limestone Fines – 1/4" (6mm) down.

E23.4 If materials have been tested by an independent testing laboratory within previous 2 months and have successfully passed tests equal to requirements of this specification, submit test certificates from testing laboratory showing suitability of materials for this project.

E23.5 Geotextile as per City of Winnipeg Specifications.

#### Construction Methods

E23.6 Subgrade inspection and installation of Geotextile

- Verify grades of compacted subgrade (to 100% SPD) for conformity with elevations and sections before placing granular material.
- Proof roll graded subgrade to check for unstable areas, obtain approval of subgrade by Contract Administrator before placing granular base.
- Remove and dispose of unsuitable sub base material as directed by Contract Administrator.
- Install geotextile as specified on the drawings to City of Winnipeg standards and specifications.

E23.7 Placement and compaction of granular and crushed limestone

- Place crushed granular base course material to a minimum compacted thickness of 127mm. Compact to 98% standard proctor density.
- Place crushed granular levelling course material to a minimum compacted thickness of 38mm. Compact to 98% standard proctor density.
- Crushed Limestone fines to a minimum compacted thickness of 13mm as finishing course. Compact to 95% standard proctor density.
- Add crushed granular material as required to replace unsuitable subgrade material. Place in layers not exceeding 200mm thickness and compact to 98% standard proctor.
- Finished surface to be within 12mm of specified grade, but not uniformly high or low. Ensure positive drainage on paved areas and in adjacent sodded areas.

## Field Quality Control

- E23.8 Inspection and testing of crushed stone paving will be carried out by designated testing laboratory, cost of testing to be paid for by cash allowance as directed by the Contract Administrator.

## Acceptance

- E23.9 Any Work not satisfactory as specified herein and as determined by the Contract Administrator for initial testing, shall be rectified by the Contractor. This process of inspection and correction shall continue until the Contract Administrator is satisfied that the Work is 100% complete and as per the construction drawings and specifications. All additional tests for failed or unacceptable results will be borne solely by the Contractor.

## Measurement and Payment

- E23.10 Limestone pathway will be measured and paid for at the contract unit price per square meter for "Limestone pathway" as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification. The total number of square metres to be paid for shall be the total number placed in accordance with this Specification as computed from measurements made by the Contract Administrator.

## **E24. WOOD BOLLARDS**

### Description

- E24.1 This specification comprises the furnishing of all labour equipment and materials incidental and required to complete the supply and installation of 200mm Wood Bollards as shown on the drawings and hereinafter specified.

### Materials

- E24.2 Wood Bollards to be of NGLA standard Grading Rules for Canadian Lumber Select No. 2 or better, ACQ Pressure Treated Spruce, 200 dia. size. Wood shall be smooth and free of rough areas.
- E24.3 Wood Preservative to be Woodlife Coppercoat or approved alternative.

### Installation

- E24.4 200mm dia. wood bollards to be installed as per the Drawings.
- E24.5 Treat all cut ends of wood with wood preservative.

### Measurement and Payment

- E24.6 Wood bollards will be measured and paid for at the contract unit price per unit for "Wood bollards" as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification. The total number of units to be paid for shall be the total number placed in accordance with this Specification as computed from measurements made by the Contract Administrator.

## **E25. SITE FURNITURE**

### Description

- E25.1 This specification covers the supply and installation of Metal Slat Waste Receptacles – Ornamental flat iron slat c/w inserts painted black including concrete base.

## General

- E25.2 Store units in a protected location, immediately upon arrival on the Site.
- E25.3 Remove from Site any units which have been damaged during transportation and replace.
- E25.4 Refer to City of Winnipeg detail SCD 119 for waste basket size and materials.

## Products

- E25.5 Concrete bases to be 32MPa concrete as per the Drawings.
- E25.6 Contact for Cast in Place Metal Slat Waste Receptacles as supplied by:

Aaron Lennon  
Supervisor of Central Repair/Manufacturing Facility  
City of Winnipeg  
Fleet Management Agency Division  
Public Works Department  
215 Tecumeseh St.  
Winnipeg, MB R3E 3S4  
Email: [ALennon@winnipeg.ca](mailto:ALennon@winnipeg.ca)

## Installation

- E25.7 Contractor to mark location of waste receptacles on site for review and approval by City of Winnipeg and Contract Administrator.
- E25.8 Contractor to auger hole for base and pour concrete to 50mm below finish grade.
- E25.9 Set steel base into centre of concrete during pour and ensure base is braced to keep plumb and at correct elevation.
- E25.10 Following curing of concrete Contractor to install limestone base and fines over concrete as per the Drawings.
- E25.11 Install wire basket and fastened with padlock. Provide keys to City of Winnipeg.
- E25.12 Immediately remove from Site, damaged furnishing and accessories. Replace, repair, re-finish, or otherwise make good to approval of Contract Administrator.

## Measurement and Payment

- E25.13 Supply and installation of metal slat waste receptacles will be measured and paid for at the contract unit price per unit for "Metal slat waste receptacles", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification. The number to be paid for will be the total number supplied and placed in accordance with this Specification and accepted by the Contract Administrator, as measured by the Contract Administrator.

## **E26. GRANITE MULCH**

### Description

- E26.1 This Specification shall cover the installation of crushed granite mulch in existing tree wells and related excavation.

### Materials

- E26.2 Filter Cloth

- (a) Filter cloth to be UV stable, black, woven cloth

E26.3 Mulch

- E26.4 Rock Mulch to be clean washed granite, black color, 20-25mm dia. size.

Submittals

- E26.5 Prior to installation, submit to the Contract Administrator samples of the following materials:

- (a) Filter cloth: 1 sq.m.
- (b) Granite Mulch: 500g

Construction Methods

- E26.6 The Contractor must ensure that all buried utilities and services are located and if necessary, protected and exposed prior to any excavation in accordance with Specification CW 1120.
- E26.7 Excavate the existing tree wells by hand to max. 150mm depth as shown on the Drawings. Soft dig/ day lighting process to be used in the area of existing underground utilities and roots. Protect roots of existing trees at all times during excavation.
- E26.8 Clear excavation of all construction debris, trash, rubble and any foreign material. Excavate and remove oil spills and other soil contamination sufficiently to remove the harmful material. Fill over excavations with approved fill and compact to the required subgrade compaction.
- E26.9 All excavated material shall be legally disposed of off site.
- E26.10 Place filter cloth around base of tree and fix in place with staples at 300mm on centre. Do not damage roots during installation.
- E26.11 Place maximum 150mm depth mulch. Ensure entire area of tree well is covered with mulch. Do not fill mulch past level of planter lip.

Measurement and Payment

- E26.12 Supply and installation of granite mulch will be measured and paid for at the contract unit price per square metre for "Supply and install granite mulch", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification. The number of square metres to be paid for will be the total number supplied and placed in accordance with this Specification and accepted by the Contract Administrator, as measured by the Contract Administrator.

**E27. PLANTER PREPARATION**

Description

- E27.1 This Specification shall cover the installation of planter sub drainage, geotextile, planting medium and mulch and related excavation.

Materials

- E27.2 Granular Drainage Course
- (a) Granular drainage material in accordance with Specification CW 3120 – Installation of Sub Drains.
- E27.3 Geotextile
- (a) Geotextile in accordance with Specification CW3120
- E27.4 Planting Medium

- (a) Imported topsoil: natural, fertile, agricultural soil typical of locality, capable of sustaining vigorous plant growth, from well drained site that is free of flooding, not in frozen or muddy condition, not less than 6% organic matter to a maximum 25% organic matter by volume, and Ph value of 5.9 to 7.0. Free from subsoil, slag or clay, stones, lumps, live plants and their roots, sticks, crabgrass, couchgrass, noxious weeds and foreign matter. Topsoil to contain no residual soil incorporated herbicides.
- (b) Peat moss: horticultural grade Class "A" decomposed plant material, fairly elastic and homogeneous. Free of decomposed colloidal residue, weed, sulphur and iron. To have Ph value of 5.0 to 6.5, 60% organic matter by weight, moisture content not exceeding 15% and water absorption capacity of not less than 300% by weight on oven dry basis.
- (c) Sand: hard, granular natural beach sand, washed free of impurities, chemical or organic matter.
- (d) Fertilizer: commercial type with 50% of the elements derived from organic sources.
- (e) Bonemeal: shall be raw bonemeal, finely ground with a minimum analysis of 3% nitrogen and 20% phosphoric acid.
- (f) Soil Mixture for Planting: shall consist of 1/3 topsoil, 1/3 peat moss and 1/3 sand. While mixing, adjust Ph by addition of finely ground dolomite limestone to 6.2 to 6.8. Add 3.0 lbs. Of 0-20-0 super phosphate 1.8 kg/m<sup>3</sup>. Add the following as required:
  - (i) Potash
  - (ii) NPK plus minor elements
  - (iii) PAR-EX complete nutrient fertilizer/CIL slow release

#### E27.5 Submittals

- (a) Prior to installation, submit to the Contract Administrator samples of the following materials:
  - (i) Geotextile: 1 sq.m.

#### Construction Methods

- E27.6 The Contractor must ensure that all buried utilities and services are located and if necessary, protected and exposed prior to any excavation in accordance with Specification CW 1120.
- E27.7 Excavate the planters by hand to the dimensions and depth shown on the Drawings. Soft dig/day lighting process to be used in area of existing underground utilities. Ensure base of planters slopes to drain to roadway drainage system (min. 2% slope).
- E27.8 Roadway base and sub-base extending more than 450mm from the edge of roadway pavement may be removed where required to achieve planter width.
- E27.9 Clear excavation of all construction debris, trash, rubble and any foreign material. Excavate and remove oil spills and other soil contamination sufficiently to remove the harmful material. Fill over excavations with approved fill and compact to the required subgrade compaction.
- E27.10 All excavated material shall be legally disposed of off site.
- E27.11 Supply and place 150mm depth drainage course with in accordance with Specification CW 3120 – Installation of Sub Drains and as shown on the Drawings.
- E27.12 Cover drainage course and sides of planter with geotextile. Fix in place with staples at 300mm on centre.
- E27.13 Clear all construction related debris from planter prior to placing planting medium.
- E27.14 Backfill with planting medium compacting sufficiently to provide good soil consistency to minimize settlement.

## Measurement and Payment

E27.15 Planter Preparation will be measured and paid for at the contract unit price per square metre for "Planter Preparation", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification. The number of square metres to be paid for will be the total number supplied and placed in accordance with this Specification and accepted by the Contract Administrator, as measured by the Contract Administrator.

## **E28. TREE VAULT PREPARATION**

### Description

#### E28.1 General

- (a) This Specification covers the installation of tree vault sub drainage, geotextile, planting medium, mulch and related excavation.

### Materials

#### E28.2 Granular Drainage Course

- (a) Granular drainage material in accordance with Specification CW 3120 – Installation of Sub Drains.

#### E28.3 Geotextile

- (a) Geotextile in accordance with Specification CW3120

#### E28.4 Root Barrier

- (a) Nilex DeepRoot UB 48, 1200mm x 600mm panels or approved equal.

#### E28.5 Planting Medium

- (a) In accordance with E27 Planter Preparation.
- (b) The Contract Administrator reserves the right to reject planting soil not conforming to the requirements of these Specifications.

#### E28.6 Submittals

- (a) Prior to installation, submit to the Contract Administrator samples of the following materials:
  - (i) Geotextile: 1 sq.m.
  - (ii) Root barrier: 1 panel

### Construction Methods

#### E28.7 General

- (a) The Contractor must ensure that all buried utilities and services are located and if necessary, protected and exposed prior to any excavation in accordance with Specification CW 1120.
- (b) Excavate tree vault to the dimensions and depth shown on the Drawings. Soft dig/ day lighting process to be used in area of existing underground utilities. Ensure base of planters slopes to drain to roadway drainage system (min. 2% slope).
- (c) Remove roadway base and sub base where required to achieve tree pit width indicated on the Drawings. Do not remove any base or sub-base material within 450mm of back of curb.
- (d) Clear excavation of all construction debris, trash, rubble and any foreign material. Excavate and remove oil spills and other soil contamination sufficiently to remove the harmful material. Fill over excavations with approved fill and compact to the required subgrade compaction.

- (e) All excavated material shall be legally disposed of off site.
- (f) Backfill between roadway base gravel and tree vault edge with compacted granular where required.
- (g) Supply and place 150mm depth drainage course in accordance with Specification CW 3120 – Installation of Sub Drains and as shown on the Drawings.
- (h) Install root barrier along roadway edge of tree pit where shown on Drawing and directed by the Contract Administrator.
- (i) Cover drainage course and sides of tree pit with geotextile in accordance with Specification CW 3120 – Installation of Sub Drains and as shown on the Drawings.
- (j) Prior to placing street tree planting medium in tree vaults verify the following:
  - (i) All construction debris, broken concrete, and excess granular material has been removed.
  - (ii) All geotextiles, root barriers, insulation and drainage are installed in accordance with relevant Drawings and Specifications.
- (k) Contract Administrator will inspect planting medium in place and determine acceptance of material, depth of planting and finish grading.
- (l) Dispose of unused materials off site in accordance with the City of Winnipeg's standard construction specifications.
- (m) Backfill with street tree planting medium compacting sufficiently to provide good soil consistency for tree planting and to minimize settlement.
- (n) After tree planting, ensure that the finished soil level is 100mm below bottom edge of tree cover and 25mm below bottom edge of sidewalk panel.

#### Measurement and Payment

E28.8 Tree vault preparation will be measured and paid for at the contract unit price per square metre for "Tree Vault Preparation", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification. The number of square metres to be paid for will be the total number supplied and placed in accordance with this Specification and accepted by the Contract Administrator, as measured by the Contract Administrator.

#### **E29. TOPSOIL AND FINISH GRADING**

E29.1 Further to CW 3540 all work is incidental to the unit price bid for sodding.

#### **E30. SODDING**

E30.1 All Work to be to CW 3510.

#### Method of Measurement

E30.2 Sodding will be measured on an area basis. The area to be paid for shall be the total number of square meters sodded and maintained in accordance with this Specification and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

#### Basis of Payment

E30.3 Sodding will be paid for at the Contract Unit Price per square metre for 'Supply and Install Topsoil and Sod', measured as specified herein, which price shall be payment in full for completing all operations herein described and all other items incidental to the Work included in this Specification.

## **E31. PLANT MATERIAL**

### Description

- E31.1 The following list generally describes the scope of this section:
- (a) Supply and installation of trees including preparation, digging, transport and planting.
  - (b) Maintenance of Trees during establishment period (minimum 30 days or until Total Performance whichever is longer). Refer to Extended Maintenance of Trees and Plant Material for extended tree and shrub maintenance period.

### General

- E31.2 Obtain approval of plant material at source.
- E31.3 Notify Contract Administrator of source of material at least 7 days in advance of shipment. No Work under this Special Provision is to proceed without approval.
- E31.4 Acceptance of plant material at source does not prevent rejection at Site prior to or after planting operations.
- E31.5 Source of all plant material to be Manitoba.

### Shipment and Pre-Planting Care

- E31.6 Co-ordinate shipping of plants and excavation of holes to ensure minimum time lapse between digging and planting.
- E31.7 Tie branches of trees and shrubs securely and protect plant material against abrasion, exposure and extreme temperature change during transit. Avoid binding of planting stock with rope or wire which would damage bark, break branches or destroy natural shape of plant. Give full support to root ball of large trees during lifting.
- E31.8 Cover plant foliage with tarpaulin, and protect bare roots by means of dampened straw, peat moss, sawdust or other acceptable material to prevent loss of moisture during transit and storage.
- E31.9 Remove broken and damaged roots with sharp pruning shears. Make clean cut and cover cuts over 50 mm diameter with wound dressing.
- E31.10 Keep roots moist and protected from sun and wind. Heel-in trees, which cannot be planted immediately, in shaded areas, and water well.

### Guarantee

- E31.11 The Contractor hereby warrants that the plant material as itemized on the plant list will remain free of defects for the duration of the two year maintenance period indicated in E32. End-of-warranty inspection will be conducted.
- E31.12 The Contractor agrees and guarantees to replace and replant any nursery stock found dead or in poor condition for the warranty period from date of Certificate of Total Performance, without cost to the City. "Poor Condition" shall be interpreted as meaning nursery stock on which branches are dead or dying, or have not shown satisfactory growth in leaves. Exempted is nursery stock damaged by accidental causes or vandalism, which stock shall be replaced at the cost of the owner.
- E31.13 The Contract Administrator reserves the right to extend Contractor's warranty responsibilities for an additional one year if, at end of initial warranty period, leaf development and growth is not sufficient to ensure future survival.

## Replacement

- E31.14 During warranty period, remove from Site any plant material that has died or failed to grow satisfactorily as determined by the Contract Administrator.
- E31.15 Replace plant material as directed by the Contract Administrator.
- E31.16 Extend warranty on replacement plant material for a period equal to the original warranty period.
- E31.17 Continue such replacement and warranty until plant material is acceptable.

## Materials

- E31.18 Water should be potable and free of minerals, which may be detrimental to plant growth.
- E31.19 Root Ball Burlap
  - (a) Root ball burlap should be 150 g Hessian burlap.
- E31.20 Anti-Desiccant
  - (a) Anti-desiccant should be wax-like emulsion to provide film over plant surface reducing evaporation but permeable enough to permit transpiration.
  - (b) Anti desiccant should be used only as requested by Contract Administrator
- E31.21 Wound Dressing
  - (a) Wound dressing should be horticulturally accepted non-toxic, non-hardening emulsion.
- E31.22 Stakes and guys
  - (a) Stakes to be metal t-rails as per the Drawings.
  - (b) Guys to be wire with rubber hose loops as per the Drawings.
- E31.23 Plant Material
  - (a) Quality and Source: Comply with Guide Specification for Nursery Stock, 1982 Edition of Canadian Nursery Trades Association, referring to size and development of plant material and root ball.
  - (b) Measure plants when branches are in their natural position. Height and spread dimensions refer to main body of plant and not from branch tip to branch tip. Use trees and shrubs of No. 1 grade.
  - (c) Use trees and shrubs with strong fibrous root system free of disease, insects, defects or injuries and structurally sound. Use trees with straight trunks, well and characteristically branched for species. Plant must have been root pruned regularly, but not earlier than one growing season prior to arrival on Site.
- E31.24 Cold Storage
  - (a) Approval required for plant material which has been held in cold storage.
- E31.25 Container - Grown Stock
  - (a) Acceptable if containers large enough for root development. Trees must have grown in container for minimum of one growing season but not longer than two.
  - (b) Root system must be able to "hold" soil when removed from container. Plants that have become root bound are not acceptable. Container stock must have been fertilized with slow releasing fertilizer.
- E31.26 Balled and Burlapped
  - (a) Deciduous trees in excess of 3m height must have been dug with large firm ball. Root balls must include 75% of fibrous and feeder root system. This excludes use of native

trees grown in light sandy or rocky soil. Secure root balls with burlap, heavy twine and rope. For large trees: wrap ball in double layer of burlap and drum lace with minimum 10 mm dia. rope. Protect root balls against sudden changes in temperature and exposure to heavy rainfall.

#### E31.27 Tree Spade Dug Material

- (a) Dig plant material with mechanized digging equipment of hydraulic spade or clam-shell type. Root balls to satisfy CNTA standards. Lift root ball from hole, place in wire basket designed for purpose and line with burlap. Replace root ball and tie basket to ball with heavy rope. Take care not to injure trunk of tree with wire basket ties or rope.

#### E31.28 Substitutions

- (a) Substitutions to plant material as indicated on plantings plan are not permitted unless written approval has been provided in accordance with B6.

#### Construction Methods

#### E31.29 Workmanship

- (a) Stake out location of trees and shrubs as per the Construction Drawings. Obtain approval prior to excavating.
- (b) Apply anti-desiccant in accordance with material manufacturer's instructions.
- (c) Co-ordinate operations. Keep Site clean and planting holes drained. Immediately remove soil or debris spilled onto pavement.

#### E31.30 Planting Time

- (a) When permission has been obtained to plant materials after buds have broken, spray plants with anti-desiccant to slow down transpiration prior to transplanting.
- (b) When permission has been obtained, trees and shrubs growing in containers may be planted throughout growing season.
- (c) Plant only under conditions that are conducive to health and physical conditions of plants.
- (d) Provide planting schedule. Extending planting operations over long period using limited crew will not be accepted.

#### E31.31 Excavations

- (a) Refer to Preparation of Planting Beds. All excavation for installation of plant material is incidental and shall be included in the unit price bid for supply and installation of Plant Material unless otherwise noted.
- (b) Protect bottom of excavations against freezing.
- (c) Remove water which enters excavations prior to planting. Ensure source of water is not ground water.

#### E31.32 Planting

- (a) Loosen bottom of planting hole to depth of 150 to 200 mm.
- (b) Plant trees and shrubs vertically with roots placed straight out in hole. Orient plant material to give best appearance in relation to structure, roads and walks.
- (c) Place plant material to depth equal to depth they were originally growing in nursery.
- (d) With balled and burlapped roots balls, loosen burlap and cut away minimum top 1/3 without disturbing root ball. Do not pull burlap or rope from under root ball. With container stock, remove entire container without disturbing root ball. Non bio-degradable wrappings must be removed.
- (e) Tamp planting soil around root system in layers of 150 mm eliminating air voids. Frozen or saturated planting soil is unacceptable. When 2/3 of planting soil has been placed, fill hole with water. After water has been completely penetrated into soil, complete backfilling.

- (f) Build 100 mm deep saucer around outer edge of hole to assist with maintenance watering.
- (g) When planting is completed, give surface of planting saucer dressing of organic 10-6-4 fertilizer at rate of 12 kg/100 m for shrub beds or 40 to 50 g/mm of calliper for trees. Mix fertilizer thoroughly with top layer of planting soil and water in well.

#### E31.33 Pruning

- (a) Prune trees after planting as noted below. Postpone pruning of those trees where heavy bleeding may occur, until in full leaf. Employ clean sharp tools and make cuts flush with main branch, smooth and sloping as to prevent accumulation of water.
- (b) Remove projecting stumps on trunks or main branches. Remove dead and injured branches and branches that rub causing damage to bark. Trim trees without changing their natural shape. Do not damage lead branches or remove smaller twigs along main branches.
- (c) Prune Deciduous Trees to min 1.8m clear stem height.

#### Maintenance

- E31.34 Refer to E32 for Extended Maintenance of all plant material (Two Year Maintenance) Extended maintenance to begin when plant material has been accepted and Certificate of Total Performance has been issued.
- E31.35 After completion of planting operation to the satisfaction of the Contract Administrator, the Contractor shall be responsible for the maintenance of the plant material during establishment period until accepted and Certificate of Total Performance has been issued.
- E31.36 Replace any dead or damaged plant material during the maintenance period, including replacement of vandalized material.
- E31.37 Water sufficiently to maintain optimum growing conditions. Ensure adequate moisture in root zone at freeze-up.
- E31.38 The Contractor shall provide all necessary equipment, including: tractors, mowers, hand mowers, trimmers, fertilizer spreaders, pruning tools, hoses, water meters, and any other items necessary for the maintenance of the plant material indicated in this Specification.

#### Personnel

- E31.39 The Contractor shall provide all necessary personnel for the ongoing maintenance operations.
- E31.40 Personnel should have at least one year of experience in landscape maintenance and should be under the direction of a foreman, in all cases, with not less than five years of experience with similar maintenance operations.

#### Maintenance Methods

##### E31.41 Watering Shrubs and Trees

- (a) All trees and shrubs shall be watered as required.
- (b) To determine the need for watering, make a soil test weekly with a one-inch auger. Take a test sample from both the planting soil and from the root area by drilling to a minimum depth of 600 mm. The soil shall contain enough moisture to hold together when compressed in the hand, but not be muddy.
- (c) During the hot season soak thoroughly approximately every week to ten days, depending on soil conditions. Take soil sample periodically, using an earth auger, until the maintenance personnel are familiar with soil conditions.
- (d) If soil is dry because of insufficient rain in the late fall, water plant material sufficiently to soak the entire root area before the earth freezes.

E31.42 Fertilizing Shrubs and Trees

- (a) Fertilizing shrub beds using a 10-6-4 mixture of fertilizer.
- (b) Fertilize trees using a 10-6-4 mixture of fertilizer.

E31.43 Cultivation

- (a) Cultivate planters and tree pits to keep the top layer of soil loose, friable and free of weeds. Never cultivate soil more than 50 mm. Maintain 100 mm depth of wood chip mulch in planters and planting beds.

E31.44 Spraying

- (a) Spray trees, shrubs, perennials and annuals to control insect pests and diseases. Use horticulturally recommended compounds specific for the problem to be contained. Do not use DDT or sprays prohibited by Agriculture Canada.

E31.45 Adjustments

- (a) Make adjustments requested by the Contract Administrator including straightening.

Measurement and Payment

E31.46 Supply and installation of plant material will be measured and paid for at the Contract Unit Price per unit type specified for "Supply and install plant material", measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification. The number of units to be paid shall be the total number of each type and size of units supplied and installed in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator.

**E32. EXTENDED MAINTENANCE OF PLANT MATERIAL**

Description

E32.1 This Specification shall deal with the maintenance of the trees for two (2) calendar years after the date of the Certificate of Total Performance.

Scope of the Work

E32.2 The following generally describes the scope of this Specification:

- (a) Maintenance of trees from date of Total Performance for 2 years;
- (b) Replacement of trees.

Materials

E32.3 The Contractor shall provide all necessary equipment, including: tractors, trimmers, fertilizer spreaders, pruning tools, water trucks, hoses, water meters, and any other items necessary for the maintenance of the area indicated in this Specification.

Personnel

E32.4 The Contractor shall provide all necessary personnel for the ongoing maintenance operations.

Work Included

E32.5 Water Trees

- (a) All trees shall be watered bi-weekly, or during the summer, if temperatures are fairly high and there has been no rainfall, water approximately once a week. Where irrigation is not available this should be executed by leaving a hose, with a gentle rate of flow, running into the saucer of the root ball for about one hour.

- (b) To determine the need for watering, make a soil test weekly with a one-inch auger. Take a test sample from both the planting soil and from the root ball by drilling to a minimum depth of 600 mm. The soil shall contain enough moisture to hold together when compressed in the hand, but shall not be muddy.

#### E32.6 Fertilizing, Pruning and Spraying Deciduous Trees

- (a) Because of the specialized nature of such operations, this should be done by a qualified local arborist.
- (b) Fertilize in the fall over the surface of the ground surrounding the plants, then soak the area thoroughly. Use 10-6-4 analysis fertilizer spreading a maximum of 0.13 kg per square meter.
- (c) Spray trees to control insect pests and diseases. Use horticulturally recommended compounds specific for the problem to be contained.

E32.7 Tighten, or remove, turnbuckles or guy wires for trees as required or directed by the Contract Administrator.

E32.8 Straighten trees as required and directed by the Contract Administrator.

E32.9 Weed planting bed and tree wells

E32.10 Clean up litter and debris around trees bi-weekly.

#### Maintenance of Trees

E32.11 From time of acceptance by Contract Administrator to end of warranty period, perform following maintenance operations:

- (a) Water to maintain soil moisture conditions for optimum growth and health of plant materials without causing erosion.
- (b) Reform damaged watering saucers.
- (c) Remove weeds monthly.
- (d) Replace or respread damaged, missing or distributed mulch.
- (e) For non-mulched areas, cultivate monthly to keep top layer of soil friable.
- (f) Apply pesticides in accordance with Federal, Provincial and Municipal regulations as and when required to control insects, fungus and disease. Obtain product approval from Contract Administrator prior to application.
- (g) Apply fertilizer in early spring based on soil test results.
- (h) Remove dead, broken, or hazardous branches from plant material.
- (i) Keep tree supports in proper repair and adjustment.
- (j) Remove tree supports and level watering saucers at end of warranty period.
- (k) Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.
- (l) Submit monthly written reports to Contract Administrator identifying:
  - (i) Maintenance Work carried out.
  - (ii) Development and condition of plant material.
  - (iii) Preventative or corrective measures required which are outside Contractor's responsibility.

#### Guarantee of Work

E32.12 The Contractor shall agree and guarantee to replace and replant any nursery stock found dead or in poor condition throughout the maintenance period and at the completion of the maintenance period. "Poor Condition" shall be interpreted as meaning nursery stock in which

branches are dead or dying, or have not shown satisfactory growth of leaves. All replacements shall be of same size and species, as specified. Maintenance of the replaced plant material will be for 2 years from the date of replacement.

#### Acceptance

E32.13 Upon the second anniversary of the recognized date of completion, or similarly the end of the required maintenance period, a Site inspection shall be held. If at this time, all material and Works is satisfactory the Contract for maintenance and warranty shall be terminated.

#### Measurement and Payment

E32.14 Extended Maintenance will be measured and paid for at the Contract lump sum price for "Extended maintenance on plant material", measured as specified herein, which price shall be payment in full for completing all operations herein described and all other items incidental to the Work included in this Specification. Payment shall be made in two equal instalments (50% each), payable on satisfactory completion on the first and second anniversary of the recognized date of completion for Two Years Maintenance.