



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 410-2018**

**KAPYONG PARK MEMORIAL PLAZA**

**Note to Bidders: Please be aware of revisions to B14.4**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 KAPYONG PARK MEMORIAL PLAZA

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, July 4<sup>th</sup>, 2018.

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.

### **B4. ENQUIRIES**

B4.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

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. CONFIDENTIALITY**

B5.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:

- (a) was known to the Bidder before receipt hereof; or
- (b) becomes publicly known other than through the Bidder; or
- (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.

B5.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Bid Opportunity to the media or any member of the public without the prior written authorization of the Contract Administrator.

## **B6. ADDENDA**

- B6.1 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.
- B6.2 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.
- B6.3 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/>
- B6.4 The Bidder is responsible for ensuring that he/she 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.
- B6.5 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.

## **B7. SUBSTITUTES**

- B7.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B7.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B7.3 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.
- B7.4 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.
- B7.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her 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.
- B7.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.
- B7.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and

obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.

- B7.7 If the Contract Administrator approves a substitute as an "approved equal", any Bidder may use the approved equal in place of the specified item.
- B7.8 If the Contract Administrator approves a substitute as an "approved alternative", any Bidder bidding that approved alternative may base his/her 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 B17.
- B7.9 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.

## **B8. BID COMPONENTS**

- B8.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
  - (b) Form B: Prices;
- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 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.
- B8.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B8.5 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
- B8.5.1 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.
- B8.6 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to 204-949-1178.
- B8.6.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.
- B8.7 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.
- B8.8 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 B17.1(a).
- B8.8.1 Bids submitted by internet electronic mail (e-mail) will not be accepted.

## **B9. BID**

- B9.1 The Bidder shall complete Form A: Bid, making all required entries.
- B9.2 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/her own name, his/her 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/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.
- B9.3 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.
- B9.4 Paragraph 11 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/her 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/her 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.
- B9.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.
- B9.4.2 All signatures shall be original.
- B9.5 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.

## **B10. PRICES**

- B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B10.2 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.
- B10.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

## **B11. DISCLOSURE**

- B11.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full

disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B11.2 The Persons are:

- (a) Shelmerdine
  - (i) Concrete formwork details and specifications;
- (b) J&D Penner
  - (i) Concrete formwork details and specifications;
- (c) Rubber Paving Manitoba
  - (i) Rubber paving details and specifications;
- (d) The Flag Shop
  - (i) Flag Pole details and specifications.

**B12. CONFLICT OF INTEREST AND GOOD FAITH**

B12.1 Bidders, by responding to this Bid Opportunity, declare that no Conflict of Interest currently exists, or is reasonably expected to exist in the future.

B12.2 Conflict of Interest means any situation or circumstance where a Bidder or employee of the Bidder proposed for the Work has:

- (a) other commitments;
- (b) relationships;
- (c) financial interests; or
- (d) involvement in ongoing litigation;

that could or would be seen to:

- (i) exercise an improper influence over the objective, unbiased and impartial exercise of the independent judgment of the City with respect to the evaluation of Bids or award of the Contract; or
- (ii) compromise, impair or be incompatible with the effective performance of a Bidder's obligations under the Contract;
- (e) has contractual or other obligations to the City that could or would be seen to have been compromised or impaired as a result of its participation in the Bid Opportunity process or the Work; or
- (f) has knowledge of confidential information (other than confidential information disclosed by the City in the normal course of the Bid Opportunity process) of strategic and/or material relevance to the Bid Opportunity process or to the Work that is not available to other bidders and that could or would be seen to give that Bidder an unfair competitive advantage.

B12.3 In connection with its Bid, each entity identified in B12.2 shall:

- (a) avoid any perceived, potential or actual Conflict of Interest in relation to the procurement process and the Work;
- (b) upon discovering any perceived, potential or actual Conflict of Interest at any time during the Bid Opportunity process, promptly disclose a detailed description of the Conflict of Interest to the City in a written statement to the Contract Administrator; and
- (c) provide the City with the proposed means to avoid or mitigate, to the greatest extent practicable, any perceived, potential or actual Conflict of Interest and shall submit any additional information to the City that the City considers necessary to properly assess the perceived, potential or actual Conflict of Interest.

B12.4 Without limiting B12.3, the City may, in its sole discretion, waive any and all perceived, potential or actual Conflicts of Interest. The City's waiver may be based upon such terms and conditions

as the City, in its sole discretion, requires to satisfy itself that the Conflict of Interest has been appropriately avoided or mitigated, including requiring the Bidder to put into place such policies, procedures, measures and other safeguards as may be required by and be acceptable to the City, in its sole discretion, to avoid or mitigate the impact of such Conflict of Interest.

- B12.5 Without limiting B12.3, and in addition to all contractual or other rights or rights at law or in equity or legislation that may be available to the City, the City may, in its sole discretion:
- (a) disqualify a Bidder that fails to disclose a perceived, potential or actual Conflict of Interest of the Bidder or any of its employees proposed for the Work;
  - (b) require the removal or replacement of any employees proposed for the Work that has a perceived, actual or potential Conflict of Interest that the City, in its sole discretion, determines cannot be avoided or mitigated;
  - (c) disqualify a Bidder or employees proposed for the Work that fails to comply with any requirements prescribed by the City pursuant to B12.4 to avoid or mitigate a Conflict of Interest; and
  - (d) disqualify a Bidder if the Bidder, or one of its employees proposed for the Work, has a perceived, potential or actual Conflict of Interest that, in the City's sole discretion, cannot be avoided or mitigated, or otherwise resolved.
- B12.6 The final determination of whether a perceived, potential or actual Conflict of Interest exists shall be made by the City, in its sole discretion.

### **B13. QUALIFICATION**

- B13.1 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.
- B13.2 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>
- B13.3 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);
- B13.4 Further to B13.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
- (a) Written confirmation of a safety and health certification meeting SAFE Work Manitoba's SAFE Work Certified Standard (e.g., COR™ and SECOR™) or

- (i) a copy of their valid Manitoba COR certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
  - (ii) a copy of their valid Manitoba SECOR™ certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Small Employer Certificate of Recognition Program (SECOR™) administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program or
- (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>.)

B13.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B13.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

#### **B14. OPENING OF BIDS AND RELEASE OF INFORMATION**

B14.1 Bids will not be opened publicly.

B14.2 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>

B14.3 After award of Contract, the name(s) of the successful Bidder(s), their address(es) 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/>

B14.4 The Bidder is advised that any information contained in any Bid may be released if required by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).

B14.4.1 To the extent permitted, the City shall treat as confidential information, those aspects of a Bid Submission identified by the Bidder as such in accordance with and by reference to Part 2, Section 17 or Section 18 or Section 26 of The Freedom of Information and Protection of Privacy Act (Manitoba), as amended.

#### **B15. IRREVOCABLE BID**

B15.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B15.2 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.

## **B16. WITHDRAWAL OF BIDS**

- B16.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B16.1.1 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.
- B16.1.2 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 11 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B16.1.3 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 11 of Form A: Bid; and
  - (c) if the notice has been given by any one of the persons specified in B16.1.3(b), declare the Bid withdrawn.
- B16.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B15.2 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.

## **B17. EVALUATION OF BIDS**

- B17.1 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 B12 (pass/fail);
  - (c) Total Bid Price;
  - (d) economic analysis of any approved alternative pursuant to B7.
- B17.2 Further to B17.1(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.
- B17.3 Further to B17.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.
- B17.4 Further to B17.1(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
- B17.4.1 Further to B17.1(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.

## **B18. AWARD OF CONTRACT**

- B18.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

- B18.2 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.
- B18.2.1 Without limiting the generality of B18.2, 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.
- B18.3 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 B17.
- B18.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.
- B18.4 Notwithstanding C4, the City may issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.
- B18.5 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:

- (a) Construction Fencing;
- (b) Removals;
- (c) Clearing and Grubbing
- (d) Earthworks and Grading;
- (e) Paving Stone;
- (f) Concrete Walkways;
- (g) Rubberized Surfacing;
- (h) Black Granite Granular Surfacing;
- (i) Aluminum Edge Restraint;
- (j) Benches, Waste Receptacle and Signs;
- (k) Concrete Memorial Blocks
- (l) Flag Poles;
- (m) Black Granite Boulders;
- (n) Planting Beds and Plantings;
- (o) Tree Planting
- (p) Fencing;
- (q) Limestone boulders;
- (r) Tree planting;
- (s) Soil and Sod;

#### D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) "**CW**" means current City of Winnipeg Standard Construction Specification ;
- (b) "**SD**" means current City of Winnipeg Standard Construction Detail;
- (c) "**SCD**" means current Parks Planning City of Winnipeg Standard Construction Detail Drawings.

#### D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is:

Ian Legge  
Urban Designer  
City of Winnipeg  
Urban Design Division  
Planning, Property and Development Department

Telephone No. 204-986-5597  
Email Address: illegge@winnipeg.ca

D4.2 At the pre-construction meeting, the Contract Administrator will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D4.3 Bids Submissions must be submitted to the address in B8.

#### **D5. CONTRACTOR'S SUPERVISOR**

D5.1 At the pre-construction meeting, the Contractor shall identify his/her designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

#### **D6. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE**

D6.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.

D6.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D6.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;

- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
- (b) the Contract, all deliverables produced or developed; and
- (c) any statement of fact or opinion regarding any aspect of the Contract.

D6.4 A Contractor who violates any provision of D6 may be determined to be in breach of Contract.

#### **D7. NOTICES**

D7.1 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.

D7.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D7.3, D7.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator identified in D4.1.

D7.3 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:

The City of Winnipeg  
Attn: Chief Financial Officer  
Office of the Chief Administrative Officer  
Susan A. Thompson Building  
2nd Floor, 510 Main Street  
Winnipeg MB R3B 1B9

D7.4 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 facsimile number:

The City of Winnipeg

Legal Services Department  
Attn: Director of Legal Services  
Facsimile No.: 204 947-9155

- D7.1 **Bids Submissions must not be submitted to the above facsimile number. Bids must be submitted in accordance with B8.**

## SUBMISSIONS

### D8. AUTHORITY TO CARRY ON BUSINESS

- D8.1 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.

### D9. SAFE WORK PLAN

- D9.1 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.
- D9.2 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>

### D10. INSURANCE

- D10.1 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) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence;
  - (c) all risks installation floater, carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.
- D10.2 **The Contractor shall ensure that any and all sub-contractors hired in connection with the works provide comparable insurances to that as outlined in section D10.1 (a) and (b)**
- D10.3 Deductibles shall be borne by the Contractor.
- D10.4 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.

D10.5 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.

#### **D11. PERFORMANCE SECURITY**

D11.1 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.

D11.1.1 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.

D11.2 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.

#### **D12. SUBCONTRACTOR LIST**

D12.1 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.

#### **D13. DETAILED WORK SCHEDULE**

D13.1 The Contractor shall provide the Contract Administrator with a detailed work schedule (Form L: Detailed Work Schedule) at least two (2) Business Days prior to the commencement of any Work on the Site.

D13.2 The detailed work schedule shall consist of the following:

- (a) a critical path method (C.P.M.) schedule for the Work;
- (b) a Gantt chart for the Work based on the C.P.M. schedule;
- (c) a daily manpower schedule for the Work;

all acceptable to the Contract Administrator.

D13.3 Further to D13.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:

D13.4 Further to D13.2(b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

D13.5 Further to D13.2(c), the daily manpower schedule shall list the daily number of individuals on the Site for each trade.

## SCHEDULE OF WORK

### D14. COMMENCEMENT

- D14.1 The Contractor shall not commence any Work until he/she is in receipt of a Purchase Order from the Award Authority authorizing the commencement of the Work.
- D14.2 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 D8;
    - (ii) evidence of the workers compensation coverage specified in C6.15;
    - (iii) the Safe Work Plan specified in D9;
    - (iv) evidence of the insurance specified in D10;
    - (v) the performance security specified in D11;
    - (vi) the Subcontractor list specified in D12; and
    - (vii) the detailed work schedule specified in D13.
  - (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.
- D14.3 **The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the Purchase Order.**
- D14.4 The City intends to award this Contract by August 7th, 2018
- D14.4.1 If the actual date of award is later than the intended date, the dates specified for Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

### D15. SUBSTANTIAL PERFORMANCE

- D15.1 The Contractor shall achieve Substantial Performance by **October 3, 2018**.
- D15.2 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.
- D15.3 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.

### D16. TOTAL PERFORMANCE

- D16.1 The Contractor shall achieve Total Performance by **October 10, 2018**
- D16.2 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.
- D16.3 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.

## **D17. LIQUIDATED DAMAGES**

- D17.1 If the Contractor fails to achieve Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City five hundred dollars (\$500) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.
- D17.2 The amount specified for liquidated damages in D17.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Total Performance by the day fixed herein for same.
- D17.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

## **D18. SCHEDULED MAINTENANCE**

- D18.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:
- (a) Shrubs and Perennials as specified in **E30**.
  - (b) Trees as specified in **E30** ;
  - (c) Soil and Sod as specified in **E29**.
- D18.2 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**

### **D19. JOB MEETINGS**

- D19.1 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.
- D19.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

### **D20. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)**

- D20.1 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).

### **D21. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS**

- D21.1 Further to B13.4, the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require updated proof of compliance, as set out in B13.4.

## **D22. SITE CLEANING**

- D22.1 The Contractor shall maintain the Site and the Work in a tidy condition and free from the accumulation of waste and debris, other than that caused by the City or by other contractors.
- D22.1.1 As the Work progresses, the Contractor shall remove any Plant and Material not required for the performance of the remaining Work. He shall also remove waste and debris other than that caused by the City or other contractors, and leave the Site and the Work clean and suitable for occupancy by the City unless otherwise specified.
- D22.1.2 Total Performance shall not be considered to have been achieved until the Contractor has cleaned up the Site and has removed all Plant, surplus Material, waste and debris, other than that left by the City or other contractors.

## **D23. INSPECTION**

- D23.1 Before beginning or resuming operations upon any portion of the Work, the Contractor shall notify the Contract Administrator so as to enable him to arrange for inspection. If the Contractor fails to notify the Contract Administrator, the Contractor shall, if and when required by the Contract Administrator, forthwith take down or expose and redo that portion of the Work required to facilitate inspection. The cost of such taking down or exposure, and redoing, if any, shall be borne by the Contractor.
- D23.2 If and when required by the Contract Administrator, the Contractor shall take down or expose forthwith any portion of the Work where the Contract Administrator determines that the Work is not in accordance with the Contract. The cost of such taking down or exposure, and redoing, if any, shall fall upon the City if the taking down or exposure indicates that the portion exposed was properly performed, but if otherwise the cost shall be borne by the Contractor.

## **D24. DEFICIENCIES**

- D24.1 Further to C11, the Contract Administrator may order the Contractor to alter or improve his methods, to increase or improve his Plant, to furnish additional or more suitable Material, or to employ additional or more qualified labour if, at any time, the Contract Administrator determines that:
- (a) the Work is not being, or will likely not be, performed satisfactorily; or
  - (b) progress is not being, or will likely not be, maintained in accordance with the work schedule.

## **MEASUREMENT AND PAYMENT**

### **D25. PAYMENT**

- D25.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

## **WARRANTY**

### **D26. WARRANTY**

- D26.1 Warranty is as stated in C13.

**FORM H1: PERFORMANCE BOND**  
(See D11)

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. 410-2018

KAPYONG PARK MEMORIAL PLAZA

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 D11)

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

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 410-2018  
  
KAPYONG PARK MEMORIAL PLAZA

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 (2007 Revision), International Chamber of Commerce Publication Number 600.

\_\_\_\_\_  
(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>
K.47-A	Existing Conditions and Removals
K.47-B	Overall Plan
K.47-C	Grading Plan
K.47-D	Planting Plan
K.47-E	Materials Plan
K.47-F	Fence Details 1
K.47-G	Fence Details 2
K.47-H	Fence Details 3
K.47-I	Concrete Blocks
K.47-J	Details 1
K.47 K	Details 2
K.47-L	North Entrance Elevation
K.47-M	West Entrance Elevation
K.47-N	North Exit Elevation and Details
K.47-O	Concrete Sidewalk Layout Plan
K.47-P	Plaza Layout Plan
SCD-119	Waste Receptacle Side Opening Metal Slat Type
SD-243	Sodding Details

#### E2. EXISTING SERVICES AND UTILITIES

- E2.1 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; the City 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.

#### E3. ACCESS TO SITE

- E3.1 Access to the Site as required by the Contractor shall be provided and maintained by the Contractor at his/her own expense and approved by the Contract Administrator.

E3.2 The Contractor's operations shall be limited to the minimum area necessary for undertaking the Work and he/she shall be responsible for all damage resulting from his/her Work on private property.

#### **E4. PERMITS, NOTICES, LICENSES, CERTIFICATES, LAWS AND RULES**

E4.1 Further to C6.12, 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.

E4.2 The Contractor shall comply with all laws, ordinances, rules and regulations that would relate to the Work.

E4.3 All notices, consents, approvals, statements, authorizations, documents or other communications to the City shall be submitted to the Contract Administrator.

E4.4 All Work shall be performed in compliance with the Manitoba Workplace Health and Safety Act.

E4.5 All Work shall be performed in compliance with the Manitoba Workplace Health and Safety Fall Protection guidelines.

E4.6 The Contractor and Sub-contractors must be fully aware of all Work involving hazardous materials. All Work must be performed in compliance with the Manitoba Department of Labour Workplace Health and Safety Guidelines and all other applicable codes. The Contractor is responsible for the immediate notification to the Contract Administrator of his/her encountering of suspected hazardous material during their course of Work.

#### **E5. DAMAGE TO EXISTING STRUCTURES, TREES AND PROPERTY**

E5.1 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 City of Winnipeg Contract Administrator, and the cost of which shall be borne entirely by the Contractor. The Contractor shall also indemnify and save harmless the City from all claims made directly or indirectly against it in respect to any such damage.

E5.2 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing park trees within the limits of the construction area:

- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment within 2 metres of trees.
- (b) Trees identified to be at risk by the Contract Administrator are to be strapped with 25x100x2400 wood planks, or suitable protection as approved by the Contract Administrator.
- (c) Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches), with the outcome read in feet, from the closest edge of the trunk. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.
- (d) Operation of equipment within the drip line of the trees shall be kept to a minimum required to perform the Work required. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the drip lines of trees. The drip line of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.

E5.3 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the City Forester or his/her designate.

E5.4 No separate measurement or payment will be made for the protection of trees.

## **E6. PEDESTRIAN SAFETY AND TRAFFIC MANAGEMENT**

E6.1 Further to CW 1130, the Contractor shall take such measures as are necessary to ensure safe and convenient pedestrian ingress and egress is maintained to private properties while he/she is working near them. Any damage caused by the negligence of the Contractor or his/her Sub-Contractors to the adjacent Works or properties, shall be promptly repaired by him at his/her own expense, to the satisfaction of the Contract Administrator.

E6.2 Ambulance/ Emergency vehicle access must be maintained at all times.

## **E7. PROTECTION OF THE SURVEY INFRASTRUCTURE**

E7.1 Notwithstanding clause 4 "Persons and municipalities to protect Outline Monuments"; under [The Surveys Act](#), of Manitoba, the Contractor shall be responsible to protect the Survey Infrastructure from damage as a result of the Work.

E7.2 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 204-918-1360 (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.

E7.3 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. 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.

E7.4 An approximate estimate of the cost to restore a legal survey monument is \$1,000 per bar and \$3,000 per control monument. Contractors shall ensure their landscaping and other subcontractors are aware of this clearance procedure and the potential restoration costs. Where possible, amounts owed to the City in accordance with the above will be deducted from payments to be made by the City to the Contractor.

## **E8. STAKES AND MARKS**

E8.1 The Contractor will mark, as noted in **E15.1.2** 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 the Contract Administrator The Contractor shall make the completed Works conform to the lines and marks thus approved and indicated.

E8.2 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.

E8.3 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.

E8.4 The Contractor shall determine and provide all dimensions and elevations measured from the stakes or marks.

## **E9. PRODUCT APPROVALS**

E9.1 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.

E9.2 The Contractor shall only use material which has been approved by the City of Winnipeg or by the Contract Administrator. The list shall provide the product, the manufacturer and the supplier.

E9.3 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.

E9.4 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.

## **E10. SUBMITTALS**

E10.1 Contractor to submit to Contract Administrator product samples and other requirements as listed below for review and approval prior to commencement of associated Works.

E10.2 Contractor to submit with reasonable promptness and in orderly sequence so as not to cause delays in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed. Notify Contract Administrator in writing at the time of submission, identifying deviations from requirements of Contract Documents and stating reasons for deviations.

E10.3 Work affected by submittal shall not proceed until review and approval by the Contract Administrator.

E10.4 Contractor's responsibility for errors and omissions in submission is not relieved by the Contract Administrator's review of submittals

### **E10.5 PRODUCT SAMPLES**

E10.5.1 The Contractor shall supply representative samples of:

- (a) Rubber Paving Material
- (b) Fence Hardware
- (c) Stained fence board

E10.5.2 Contractor to supply product samples a minimum of 5 (five) Working Days prior to placing material order. No Product order shall be placed prior to approval by Contract Administrator.

### **E10.6 MOCK-UP**

E10.6.1 The Contractor shall fabricate one Concrete Memorial Block as a mock-up for review and testing prior to the commencement of any Work related to the overall fabrication of Concrete Memorial Blocks

### **E10.7 SHOP DRAWINGS**

E10.7.1 The Contractor shall provide Shop Drawings for the Flag Poles as described in **E24**.

## **E11. SITE ENCLOSURES**

E11.1 Temporary Safety Site Enclosures, shall be located completely around the Work area, as located on Drawing K.47-A.

E11.2 The fence shall be a self-supporting metal post and frame system with "T" style legs, minimum 1800mm height, wire mesh fencing.

E11.3 The fence shall be supplied and installed prior to construction commencing and maintained in good working order until Total Performance.

E11.4 Method of Measurement and Basis of Payment

E11.4.1 Method of Measurement shall be as follows:

- (a) Temporary Site Enclosures shall be measured on a lump sum basis for:
  - (i) "Construction/Safety Fence" on Form B: Prices.

## **E12. SITE RESTORATION**

E12.1 Total Performance of the Work shall not be attained until the Contractor has cleaned up the Site and has removed all tools, equipment, waste, debris and surplus foundation earth to the satisfaction of the Contract Administrator. Unless otherwise specified, the Contractor shall restore all areas of the Site beyond the established limit of Work, which have been disturbed by the Contractor's operations to as good as or better than the original condition to the satisfaction of the Contract Administrator. The Contractor shall pay all costs associated with this Work.

## **SITE DEVELOPMENT**

### **E13. REMOVALS**

E13.1 Description

E13.2 In addition to CW 3550, this Specification shall cover the removal and legal disposal of existing site furniture, swings, chain link fencing and asphalt paths.

E13.3 The Work to be done by the Contractor under this specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to satisfactory performance and completion of all Work as shown on the Drawings as herein specified.

E13.4 Construction methods

E13.4.1 Site furniture, playground equipment and chain link fencing removal

- (a) The Contractor shall remove and legally dispose of indicated site furniture, swings and chain link fencing including any hardware, posts, fasteners and foundations
  - (i) Chain Link fence to North of Site to remain and act as construction/safety fencing until construction is complete.
- (b) The Contractor shall load and haul all waste materials from the site and dispose of these materials at dumps located by the Contractor and approved by the Contract Administrator.
- (c) Holes left by post and bench foundation removals are to be filled with earthen material w/ 150mm top coat of Soil as per **E29**.
- (d) **Holes left by Swing Post Foundations are to be filled with 19mm (3/4") down gravel compacted by tamping rammer (jumping jack) in max. 150mm (6") lifts.**

- (e) Excavate swing post foundation holes as required to ensure that no extraneous material enters holes.

E13.4.2 Asphalt removal

- (a) Remove indicated portions of asphalt path and base material.
- (b) Excavate, add clean fill if necessary, and grade to the limits shown on Drawings to the depths necessary to achieve finish grade

E13.5 Cleaning as per **D22**.

E13.6 Method of Measurement

E13.6.1 Method of Measurement shall be as follows:

- (a) Removals shall be measured on a lump sum basis for:
  - (i) "Remove bench and swings" on Form B: Prices.
- (b) Removals shall be measured on a lineal metre basis for:
  - (i) "Remove Chain Link Fencing" on Form B: Prices.
- (c) Removals shall be measured on a cubic metre basis for:
  - (i) "Excavate and Remove Existing Asphalt Path" on Form B: Prices.
- (d) No separate measurement shall be made for filling old post and foundation holes with fill material or gravel as this work is incidental herein and as per **E19**.

E13.7 Basis of Payment

E13.7.1 Basis of Payment shall be as follows:

- (a) Removals will be paid for at the Contract Unit Prices on Form B: Prices. The amount to be paid for shall be the total number of units, measured as specified herein, which price shall be for full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.
- (b) No separate payment shall be made for filling old post and bollard holes with fill material or gravel as this work is incidental herein.

**E14. CLEARING & GRUBBING**

E14.1 Description

E14.1.1 Clearing & Grubbing shall include removing all small shrubs and root systems within the designated areas as identified by the Contract Administrator.

- (a) Any loose earthen material left from the clearing shall be removed from Site.
- (b) Area to be compacted after removals.
- (c) Work shall be completed in accordance with specification CW 3010 and as indicated in the Drawings.

E14.2 Method of Measurement

E14.2.1 Method of Measurement shall be as follows:

- (a) Clearing and Grubbing shall be measured on a square metre basis for:
  - (i) "Clearing and Grubbing" on Form B: Prices.

E14.3 Basis of Payment

E14.3.1 Basis of Payment shall be as follows:

- (a) Clearing & Grubbing will be paid for at the Contract Unit Prices on Form B Prices. The amount to be paid for will be the total number of units measured as specified

herein, which price shall be for full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

- (b) No separate measurement or payment will be made for the removal of loose earthen material and compaction as these items are incidental to the work herein.

## **E15. EXCAVATION AND GRADING**

### **E15.1 General Description**

E15.1.1 This specification shall amend and supplement CW 3110 and CW 3170. It shall cover the excavation and legal disposal of existing earthen materials for new concrete pathways and pad, new paving stone seating area, new sod areas, new planting beds and associated woodchip mulch, granular pad and rubber safety surfacing as per Drawings.

E15.1.2 **Please note that for this project it is required to have Site layout and Grades established by a professional land surveyor.**

E15.1.3 All extraneous materials are to be removed from the Site and disposed of in a safe and legal manner.

- (a) The Work to be done by the Contractor under this specification shall include all labour, equipment and material necessary for and incidental to the satisfactory performance and completion of the Work herein specified.

E15.1.4 Work shall include but not be limited to the following:

- (a) Excavate, add clean fill if necessary, and grade to the limits shown on Drawings to the depths necessary to achieve finish grade for:
  - (i) *New Topsoil and Sod*; Existing sod and associated organics to be excavated such that at **min.** 75mm compacted new topsoil can be placed under new sod. Depth of excavation will vary according to Drawings.
  - (ii) *Concrete Memorial Blocks in Rubberized Paving*; Excavate to allow for **min.** 240mm granular base below rubberized paving and concrete blocks
  - (iii) *Memorial Boulders in Rubberized Paving*; Excavate to allow for **min.** 230mm granular base below rubberized paving Additional excavation to allow for additional **min.** 150mm granular base below boulders
  - (iv) *Paving Stone*; Excavate to allow for **min.** 200mm granular base below pavers and bedding sand
  - (v) *New 100mm (4") Concrete Walkways*; Excavate to allow for **min.** 150 mm granular base below concrete
  - (vi) *Crushed Black Granite Surfacing*; Excavate to depths necessary as per Drawings.
  - (vii) *Planting Beds*; Excavate to min. 350mm below finished grade for shrub beds. Excavate to min. 250mm below finished grade for perennial and grasses beds;
  - (viii) *New Woodchips*; Excavate to appropriate depths to allow for 100mm depth of wood chips.

### **E15.2 Construction Methods**

E15.2.1 Excavation includes the removal of items (i.e., earthen materials) as indicated on the Drawings and as directed by the Contract Administrator. Work includes the satisfactory disposal of unsuitable Site material such as clays susceptible to frost-heaving, silts, rock, rubble, rubbish and any surplus suitable Site material.

- (a) Stockpile suitable, approved material on Site for reuse (clean topsoil, clean earth fill,) in a secure location. Remove and dispose of unsuitable material.
- (b) Disposal of material shall be understood to mean the hauling of all unsuitable material from the Site and the unloading in a legal manner acceptable to the

Contract Administrator. If arrangements are made in advance excavated material may be disposed of on Site at a location designated by the Contract Administrator.

- (c) Contractor must coordinate with the Contract Administrator to ensure all removals have occurred.
- (d) Excavate to the limits shown and as necessary to achieve finish grades as indicated on the Drawings. Where design grades are not shown, the new surface materials shall be installed to meet flush with surrounding grades, and sloped so as not to impede the existing drainage pattern.
- (e) Where new sod will meet existing, employ a vertical shearing operation, such as using a sharp spade or edger, along the outside edges of the excavation to create a clean and definite line for the new sod to abut flush to.

E15.2.2 Site grading shall be as per Drawings.

- (a) The Contractor must ensure that all Earthworks and Site Grading does not create tripping hazards and no areas of standing water remain.
- (b) If necessary the Contractor shall import clean fill to achieve grades as per Drawings.
- (c) Backfill shall be placed in a dry, thawed condition and shall be maintained free of moisture or frost.
- (d) In fill areas where the difference between the existing ground elevation and the new finished design elevation is less than 300 mm, the Contractor shall scarify the existing ground to a minimum depth of 50 mm prior to placement of any fill.
- (e) In areas where new grades are greater than 75mm than existing grades, clean fill shall be used to achieve finished subgrade levels. Clean fill can be used from On-Site grading operations. If additional clean fill is required, it must be hauled in from Off-Site.
- (f) All surplus fill material shall be removed and legally disposed off-site.
- (g) Do not disturb adjacent items designated to remain in place.

E15.3 Cleaning as per D22.

E15.4 Method of Measurement and Basis of Payment

E15.4.1 Method of Measurement shall be as follows:

- (a) Grading shall be measured on a square metre basis for:
  - (i) "Earthworks and Grading" on Form B: Prices.
- (b) No measurement will be made for retaining services relating to survey of layout and establishing grades as these items are incidental to work herein.
- (c) No separate measurement will be made for Excavation and Grading of the new Concrete Memorial Blocks in Rubberized Paving as these items are incidental to **E19** and **E21**.
- (d) No separate measurement will be made for Excavation and Grading of the new Memorial Boulders in Rubberized Paving as these items are incidental to **E19** and **E22**.
- (e) No separate measurement will be made for Excavation and Grading of new Paving Stone areas as these items are incidental to **E18**.
- (f) No separate measurement will be made for Excavation and Grading of new 100mm (4") Concrete Walkways as these items are incidental to **E17**.
- (g) No separate measurement will be made for Excavation of new Crushed Black Granite Surfacing as these items are incidental to Error! Reference source not found..

- (h) No separate measurement will be made for Excavation of the new Planting Beds as these items are incidental to **E29**.
- (i) No separate measurement will be made for Excavation of the new wood chip areas these items are incidental to **E31**.
- (j) No measurement will be made for the import of clean fill to achieve rough grading grades and earthwork and site grading grades as this item is incidental to the work herein.

**E15.4.2** Basis of Payment shall be as follows:

- (a) Excavation and Grading will be paid for at the Contract Unit Prices on Form B: Prices. The amount to be paid for shall be the total number of units, measured as specified herein, which price shall be for full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.
- (b) No payment will be made for retaining services relating to survey of layout and establishing grades as these items are incidental to work herein.
- (c) No separate payment will be made for Excavation and Grading of the new Concrete Memorial Blocks in Rubberized Paving as these items are incidental to **E19** and **E21**.
- (d) No separate payment will be made for Excavation and Grading of the new Memorial Boulders in Rubberized Paving as these items are incidental to **E19** and **E22**.
- (e) No separate payment will be made for Excavation and Grading of the new Paving Stone areas as these items are incidental to **E18**.
- (f) No separate payment will be made for Excavation and Grading of new 100mm (4") Concrete Walkways these items are incidental to **E17**
- (g) No separate payment will be made for Excavation and Grading of Crushed Black Granite Surfacing as these items are incidental to Error! Reference source not found..
- (h) No separate payment will be made for Excavation of the new Planting Beds as these items are incidental to **E29**
- (i) No separate payment will be made for Excavation of the new wood chip areas as these items are incidental to **E31**.
- (j) No payment will be made for the import of clean fill to achieve rough grading grades and earthwork and site grading grades as this item is incidental to the work herein.

**E16. GRANULAR PAD WITH CRUSHED BLACK GRANITE TOP COAT**

**E16.1** Description.

**E16.1.1** This Specification shall amend and supplement the City of Winnipeg Specification CW 3110. The Work to be done by the Contractor under this Specification shall cover all phases of supply and placement of crushed limestone surfacing materials necessary to install Crushed Black Granite Surfacing as shown on Drawings.

**E16.2** Crushed Limestone Materials

**E16.2.1** Description

- (a) Crushed limestone base material shall be supplied and installed in accordance with City of Winnipeg's Standard Construction Specification CW 3110 "Sub-Grade, Sub-Base and Base Course Construction" and shall be as per Drawings.

**E16.2.2** Materials – Limestone Pathway w/ Crushed Black Granite Top Coat

- (a) 125mm layer 50mm (2") down crushed limestone.

- (b) 50mm layer 20mm (3/4") down crushed limestone.
- (c) 50mm layer 6mm (1/4") down crushed black granite.

E16.2.3 Construction Methods

- (a) Crushed limestone base material shall be supplied and installed as outlined in CW 3110 item 3.4 "Placement of Sub-Base Material with Geotextile Fabric".
- (b) All limestone base course material shall be placed and compacted as specified to finished thickness as shown on the Drawings.

E16.3 Geotextile Fabric

E16.3.1 Description

- (a) Geotextile Fabric shall be placed in accordance with City of Winnipeg's Standard Construction Specification CW 3130 "Supply and Installation of Geotextile Fabrics".

E16.3.2 Materials

- (a) The separation/ reinforcement geotextile fabric shall conform to the Products Approved as listed in City of Winnipeg Specification for Approved Products for Surface Works.

E16.3.3 Construction Methods

- (a) Separation/ Reinforcement geotextile fabric shall be installed as outlined in CW 3110 item 3.1 "Separation/Reinforcement Geotextile Fabric".

E16.4 Construction Methods

E16.4.1 The Work included in the establishment of the Granular Pad with Crushed Black Granite Topcoat shall include:

- (a) The Contractor shall survey and stake out the proposed Granular Path and Seating Area prior to the start of construction as shown on the construction Drawings. Layout shall be checked and confirmed with Contract Administrator prior to construction.
- (b) Excavation of Granular Pad with Crushed Black Granite Topcoat shall be as per **E14**.
- (c) Subgrade to be compacted.
- (d) All granular base course shall be placed and compacted to the finished thickness as specified on the Drawings.
- (e) Base Course and Capping Course shall be compacted to a minimum of ninety five percent (95%) of Standard Proctor Density.

E16.5 Cleaning as per **D22**.

E16.6 Method of Measurement and Basis of Payment

E16.6.1 Method of Measurement shall be as follows:

- (a) Granular Pad with Crushed Black Granite Topcoat shall be measured on a square metre basis for:
  - (i) "Crushed Black Granite Surfacing" on Form B: Prices.

E16.6.2 Basis of Payment shall be as follows:

- (a) Granular Pad with Crushed Black Granite Topcoat shall be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for excavation, subgrade compaction, supply and installation of base course and top course, supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

## **E17. CAST-IN-PLACE CONCRETE PAVEMENT**

E17.1 This specification shall cover the supply and installation of 100mm concrete sidewalk with a thickened edge where indicated in Drawings.

### E17.2 Description

E17.2.1 The specification shall supplement the current version of CW 3325 and CW 3310.

E17.2.2 The Contractor shall furnish all labour, materials, equipment and services necessary to complete the Work according to the Drawings and specifications.

### E17.3 Material

E17.3.1 All material shall conform to current CW 3325 and CW 3310 and all other applicable current City of Winnipeg Standard Construction Specifications, whether listed herein or not.

E17.3.2 Granular limestone base is to be crushed stone or gravel having hard angular particles, free from clay lumps, cementation, organic material, frozen material or other deleterious materials.

E17.3.3 Geotextile shall be non-woven and installed as shown on the Drawings. It shall have an apparent opening size of between 0.149 mm and .210 mm and a minimum unit weight of 135 grams per sq. m.

### E17.4 Supply of Materials and Equipment

E17.4.1 The Contractor shall supply all materials and use equipment in accordance with the current version of CW 3325.

### E17.5 Construction Methods

E17.5.1 No concrete work shall commence until the excavation has been completed in accordance with the current version of CW 3110 and the Drawings has been approved by the Contract Administrator.

E17.5.2 Sub-base compaction shall be in accordance with the current version of CW 3110.

E17.5.3 Base Course to be installed to a **minimum depth** of 150 mm in accordance with the current version of CW 3110 and the Drawings.

E17.5.4 Concrete pavement shall be installed as shown on Drawings in accordance with the current version of CW 3310.

E17.5.5 Pavement joints shall be constructed, where required, as directed by the Contract Administrator and as shown on the Drawings and shall be in accordance with the current version of CW 3325.

E17.5.6 Concrete Placement for concrete walkways shall be installed to a depth of 100 mm thickness with thickened edge where indicated in the Drawings and shall be in accordance with the current version of CW 3310, Section 9.4.

### E17.6 Cleaning as per **D22**.

### E17.7 Method of Measurement and Basis of Payment

E17.7.1 Method of Measurement shall be as follows:

(a) Cast in place concrete pavement shall be measured on a square meter basis for:

(i) "Supply and Install 100mm (4") Concrete Walkway" on Form B: Prices.

(b) No separate measurement will be made for the thickened edge concrete portion of the 100mm (4") Concrete Walkway as this item is incidental herein.

E17.7.1 Basis of Payment shall be as follows:

- (a) Cast in Place concrete pavement will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.
- (b) No separate payment will be made for the thickened edge concrete portion of the 100mm (4") Concrete Walkway as this item is incidental herein.

## **E18. PAVING STONE**

### **E18.1 Description**

- E18.1.1 The specification shall supplement the latest version of Specifications CW 3310, CW 3325 and CW 3330.
- E18.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following:
  - (a) Excavation, supply and installation of concrete pavers on granular base for areas as indicated on the Drawing.
- E18.1.3 Contract Administrator to approve Concrete Unit Pavers before installation commences.

### **E18.2 Materials**

- E18.2.1 Concrete Unit Pavers: Barkman 60mm Navarro Pavers, "Sierra Grey" Colour, Running Bond Pattern. Sizes to be: 150mm x 300mm x 57mm (6" x 12" x 2.25"); 300mm x 300mm x 57mm (12" x 12" x 2.25"); 300mm x 450mm x 57mm (12" x 18" x 2.25"). Laying Ratio 5:5:3 or approved substitute in accordance with **B7**.
  - (a) **Area: 106 SM** **\*\* note that this is based on finished surface, does not account for cuts \*\***
- E18.2.2 Concrete Unit Pavers: Endicott Pavers "Manganese Iron Spot" Colour. Sizes to be 102mm x 203mm x 57mm (4" x 8" x 2.25") or approved substitute in accordance with **B7**.
  - (a) **Area: 9 SM** **\*\* note that this is based on finished surface, does not account for cuts\*\***
- E18.2.3 Bedding sand shall be fine aggregate as specified in Section 5.3.1 of the latest version of CW 3310 and Section 5.2.3 of the latest version of CW 3330.
- E18.2.4 Edge Restraint shall be as per **E20.2.2**
- E18.2.5 Filler Sand shall have a maximum aggregate size of 2.5mm
- E18.2.6 Geotextile shall be **Combigrid 30/30 Q1 151 GRK 4C**, which is a non-woven geotextile/geogrid combination or approved substitute in accordance with **B7**.
  - (a) Contact for Combigrid:  
Brock White.  
879 Keewatin Street  
Winnipeg, Manitoba  
Ph: (204) 694-3600 or 1 (888) 786-6426
  - (b) Technical Data:
    - (i) Raw Material: Polypropylene/PP
    - (ii) Nominal Tensile Strength (longitudinal/transverse):  $\geq 30 / \geq 30$  kN/m
    - (iii) Tensile Strength at 2% Elongation (long./trans.): 12 / 12 KN/m
    - (iv) Elongation at Nominal Tensile Strength (long./trans.):  $\leq 8 / \leq 8$  %

(v)	Extensional Stiffness at 1% Strain (long./trans.):	600 kN/m / 600 kN/m
(vi)	Cyclic Modulus at 0.5% Strain:	≥ 1.150 kN/m
(vii)	Torsional Rigidity:	≥ 14.7 kg-cm/deg
(viii)	Construction related strain:	0 %

### E18.3 Construction Methods

#### E18.3.1 Excavation

- (a) Excavation shall comply with the latest version of CW 3110.
- (b) The excavation shall not exceed beyond the specified limits of excavation. The limits of excavation shall be taken as a vertical plane 150mm beyond the limits of the proposed area, unless otherwise specified on the Drawings or in the Specifications for the Work
- (c) The sub-grade shall be excavated to the minimum depth as shown on the Drawings, unless otherwise directed by the Contract Administrator.

#### E18.3.2 Preparation of Sub-grade, Concrete Base and Bedding Sand

- (a) The construction of sub-grade shall be completed in accordance with the latest version of CW 3110 and to the depth as specified on the Drawings. Combigrid shall be placed after sub-grade excavation and compaction have taken place. It shall be installed as per manufacturer's specifications.
- (b) The granular base shall be placed to a minimum thickness of 200mm. The surface shall be smooth, true to line, grade and cross-section.
- (c) On top of the concrete base a 25mm layer of bedding sand shall be placed.
- (d) The bedding sand layer shall be spread and levelled so that the paving stones when installed are 5mm higher than the finished grade. No more sand shall be spread than can be covered in one day by paving stones. The bedding sand layer shall not be compacted prior to laying the paving stones.
- (e) The cost of supplying and placing the bedding sand shall be incidental to the installation of the paving stones.
- (f) No paving stones shall be placed until construction of the underlying layers has been approved by the Contract Administrator.

#### E18.3.3 Installation of Paving Stones

- (a) The paving stones shall be installed such that spaces between joints do not exceed 5mm. Spaces between paving stones shall be uniform and consistent while maintaining straight and true patterns.
- (b) If cutting of paving stones is required, the sawn or sheared edges shall be true, even and undamaged. Coloured mortar shall be used to fill small voids between blocks and pre-cast concrete seating wall.
- (c) Cut pieces must be **min.** 25% size of a full paver.
- (d) Paving stones shall be compacted into the sand layer using approved vibratory compactors until they are at the proper grade, uniformly level and free of any movement. Filler sand shall be Polymeric Sand and is to be swept into the joints until full.
- (e) The cost of supplying and placing filler sand shall be incidental to the installation of the paving stones.

#### E18.4 Cleaning as per **D22**.

#### E18.5 Method of Measurement and Basis of Payment

##### E18.5.1 Method of Measurement

- (a) Paving Stone will be measured on a square metre basis for:
  - (i) "Supply and Install Paving Stone" on Form B: Prices.

E18.5.2 Basis of Payment

- (a) Paving Stone will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

## E19. RUBBERIZED SURFACING

### E19.1 Description

E19.1.1 The work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools supplies and all other things necessary for an incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following. The specification shall supplement the most up to date version of City of Winnipeg Specification CW 3110.

- (a) Supply and Installation of Crushed Granular Base under Memorial Blocks;
- (b) Supply and Installation Crushed Granular Base under Memorial Boulders;
- (c) Supply and Install Rubberized Surfacing around Memorial Blocks; and
- (d) Supply and Install Rubberized Surfacing around Memorial Boulders.

### E19.2 Material

E19.2.1 All granular base material shall conform to Specification CW 3110 and all other applicable City of Winnipeg Specifications, whether listed herein or not.

#### E19.2.2 Base Materials

- (a) Granular limestone base is to be crushed stone or gravel having hard angular particles, free from clay lumps, cementation, organic material, frozen material or other deleterious materials. Shall be 19mm down.

E19.2.3 Geotextile shall be **Combigrid 30/30 Q1 151 GRK 4C**, which is a non-woven geotextile/geogrid combination or approved substitute in accordance with **B7**.

- (a) Contact for Combigrid:  
Brock White.  
879 Keewatin Street  
Winnipeg, Manitoba  
Ph: (204) 694-3600 or 1 (888) 786-6426
- (b) Technical Data:
  - (i) Raw Material: Polypropylene/PP
  - (ii) Nominal Tensile Strength (longitudinal/transverse):  $\geq 30 / \geq 30$  kN/m
  - (iii) Tensile Strength at 2% Elongation (long./trans.): 12 / 12 KN/m
  - (iv) Elongation at Nominal Tensile Strength (long./trans.):  $\leq 8 / \leq 8$  %
  - (v) Extensional Stiffness at 1% Strain (long./trans.): 600 kN/m / 600 kN/m
  - (vi) Cyclic Modulus at 0.5% Strain:  $\geq 1.150$  kN/m
  - (vii) Torsional Rigidity:  $\geq 14.7$  kg-cm/deg
  - (viii) Construction related strain: 0 %

E19.2.4 Rubber Surfacing to be composed of EPDM synthetic granule rubber crumb bound together with a polyurethane binder. Samples with selected colours to be submitted to Contract Administrator for approval as per **E10**. Colours to be:

- (a) Concrete Memorial Block Area: Charcoal
- (b) Memorial Boulder Area: Beige

### E19.3 Construction Methods

#### E19.3.1 Excavation

- (a) Excavation shall comply with the latest version of CW 3110.
- (b) The excavation shall not exceed beyond the specified limits of excavation. The limits of excavation shall be taken as a vertical plane 150mm beyond the limits of the proposed area, unless otherwise specified on the Drawings or in the Specifications for the Work
- (c) The sub-grade shall be excavated to the minimum depth as shown on the Drawings, unless otherwise directed by the Contract Administrator.

#### E19.3.2 Preparation of Sub-grade, Granular Base

- (a) The construction of sub-grade shall be completed in accordance with the latest version of CW 3110 and to the depth as specified on the Drawings. Combigrid shall be placed after sub-grade excavation and compaction have taken place. It shall be installed as per manufacturer's specifications.
- (b) The granular base shall be placed to a minimum thickness of 237mm. The surface shall be smooth, true to line, grade and cross-section.
- (c) No rubber shall be placed until construction of the granular base has been approved by the Contract Administrator.

#### E19.3.3 Installation of Rubber Surfacing

- (a) Rubber surfacing shall be installed in accordance with Manufacturer's written instructions
- (b) Rubber surfacing shall be installed at temperatures between 5 degrees and 35 degrees C.
- (c) Rubber surfacing installers shall have a minimum of three years' installation experience.

### E19.4 Cleaning as per D22.

### E19.5 Method of Measurement and Basis of Payment

#### E19.5.1 Method of Measurement

- (a) Rubberized Surfacing will be measured on a square metre basis for:
  - (i) "Supply and Install Crushed Granular Base under Memorial Blocks";
  - (ii) "Supply and Install Rubberized Surfacing around Memorial Blocks";
  - (iii) "Supply and Install Crushed Granular Base under Memorial Boulders", and
  - (iv) "Supply and Install Rubberized Surfacing around Memorial Boulders" on Form B: Prices.

#### E19.5.2 Basis of Payment

- (a) Rubberized Paving will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator

## E20. ALUMINUM EDGE RESTRAINT

### E20.1 Description

E20.1.1 The work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following.

- (a) Supply and Install Aluminum Landscape Edging
- (b) Supply and Install Aluminum Paver Edge Restraint

## E20.2 Materials

E20.2.1 Landscape Edging shall be **Permaloc Cleanline** 3/16 inch (4.8 mm) x 4" (100mm) or approved equal as per **B7**. Natural Mill Finish.

E20.2.2 Paver Edging shall be **Permaloc StructurEdge** 3/16 inch (4.8 mm) x 1-5/8" (41 mm) 2-1/4" (57 mm) high with 3/8 inch x 10 inches (9.5 mm x 254 mm) bright spiral steel spike, or approved equal as per **B7**. Natural Mill Finish.

- (a) Contact for Permaloc Edging:

Expocrete  
1436 Chevrier Blvd  
Winnipeg, Manitoba  
Ph: 1 (800) 262-8869

## E20.3 Construction Methods

### E20.3.1 Landscape Edging:

- (a) Set edging into trench with top at ½ inch (12.7 mm) above compacted finish grade on turf side with side having loops for stakes placed on opposite side of turf. Drive stakes through edging loops until locked in place. Requires 5 stakes evenly spaced for each 16 feet (4.88 meters) section, or 3 stakes evenly spaced for each 8 feet (2.44 meters) section with a total of 8 stake loops available in each 16 feet (4.88 meters) section if necessary. Provide additional stakes at approximately 24 inches apart, longer stakes, heavier gage stakes, or any combination of previously mentioned as necessary to firmly secure edging for permanent intended use.
- (b) Where edging sections turn at corners and at angled runs, cut edging partially up through its height from bottom and turn back to desired angle to form rounded exposed radius.
- (c) Backfilling and Cleanup: Backfill both sides of edging, confirm and adjust if necessary that sections are securely held together, and compact backfill material along edging to provide top of edging at 1/2 inch (12.7 mm) above turf finish grade. Cleanup and remove excess material from site.

### E20.3.2 Paver Edging:

- (a) Install base of edging resting on compacted level base and facing away from paver, drive 3/8" x 10" (9.5 mm x 242 mm) bright spiral steel spikes through edging holes in section base of paver restraint edging at 12" (305mm) intervals.
- (b) Securely connect sections together in accordance with manufacturer's instructions.
- (c) **In Areas where Rubber Surfacing abuts paving stone, the compacted granular base under the paver edging must be built up so as to allow top of rubber surfacing to sit flush with the top of the edge restraint.**

E20.4 Cleaning as per D22.

E20.5 Method of Measurement and Basis of Payment

E20.5.1 Method of Measurement

- (a) Aluminum Edge Restraint (*landscape edging*) will be measured on a linear metre basis for:
  - (i) "Supply and Install Aluminum Edge Restraint" on Form B: Prices.
- (b) No separate measurement will be made for the Aluminium Edge Restraint (*paver edging*) as this item is incidental to **E18**.

#### E20.5.2 Basis of Payment

- (a) Aluminum Edge Restraint will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.
- (b) No separate payment will be made for the Aluminium Edge Restraint (*paver edging*) as this item is incidental to **E18**

### E21. CAST IN PLACE CONCRETE BLOCKS

#### E21.1 Description

E21.1.1 The work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools supplies and all other things necessary for an incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following. The specification shall supplement the most up to date version of City of Winnipeg Specification CW 3310.

- (a) Supply and Installation of Concrete Memorial Blocks.

#### E21.2 Material

E21.2.1 All material shall conform to Specification CW 3310 and all other applicable City of Winnipeg Specifications, whether listed herein or not.

#### E21.2.2 Base Materials

- (a) Granular limestone base is to be crushed stone or gravel having hard angular particles, free from clay lumps, cementation, organic material, frozen material or other deleterious materials. Shall be 19mm down.

E21.2.3 Geotextile shall be **Combigrid 30/30 Q1 151 GRK 4C**, which is a non-woven geotextile/geogrid combination or approved equal as per **B7**.

- (a) Contact for Combigrid:

Brock White.  
879 Keewatin Street  
Winnipeg, Manitoba  
Ph: (204) 694-3600 or 1 (888) 786-6426

- (b) Technical Data:

(i) Raw Material:	Polypropylene/PP
(ii) Nominal Tensile Strength (longitudinal/transverse):	≥ 30 / ≥ 30 kN/m
(iii) Tensile Strength at 2% Elongation (long./trans.):	12 / 12 KN/m
(iv) Elongation at Nominal Tensile Strength (long./trans.):	≤ 8 / ≤ 8 %
(v) Extensional Stiffness at 1% Strain (long./trans.):	600 kN/m / 600 kN/m
(vi) Cyclic Modulus at 0.5% Strain:	≥ 1.150 kN/m
(vii) Torsional Rigidity:	≥ 14.7 kg-cm/deg
(viii) Construction related strain:	0 %

#### E21.2.4 Formwork

- (a) Shall meet design, code and CSA A23.1-14 requirements, construct accurately, so that resulting finished concrete conforms to shapes, lines and dimensions indicated on the Drawings.
- (b) Formwork shall be smooth with no imperfections such that finished concrete surfaces are smooth with no visible wood grain or imperfections showing.

#### E21.2.5 Concrete

- (a) Concrete shall be Type 1 as per the most up-to-date version of City of Winnipeg Standard Construction Specifications section 3310 and shall adhere to the dimensions on the Drawings.
- (b) Reinforcing steel shall be 10m with 10m ties at max. 300 mm O.C., both ways. Provide min. 50mm clearance.
- (c) Portions of concrete on horizontal plane shall have a very lightly brushed finish, so as to prevent a slippery surface.
- (d) Concrete to be coloured with **Scofield Integral Colour SG**. Specific Colour mix to be: *SG447-2 Schooner Beige, Colour Chart A - 322.05* or approved substitute in accordance with **B7**.

#### E21.3 Construction Methods

E21.3.1 All work is to be located and installed in accordance with the Drawings.

E21.3.2 All blocks to be installed plumb and true to correct elevations and location, as located on Drawings and as directed by the Contract Administrator.

E21.4 Cleaning as per **D22**.

#### E21.5 Method of Measurement and Basis of Payment

E21.5.1 Method of Measurement shall be as follows:

- (a) Cast in Place Concrete Blocks shall be measured on a per unit basis for:
  - (i) "Supply and Install 1.22 Metre Concrete Memorial Blocks", and;
  - (ii) "Supply and Install 0.61 Metre Concrete Memorial Blocks" on Form B: Prices.
- (b) No separate measurement will be made for supply and installation granular base as these items are incidental to the work herein.
- (c) No separate measurement will be made for supply and installation of geotextile as these items are incidental to the work herein.

E21.5.2 Basis of Payment shall be as follows:

- (a) Cast in Place Concrete Blocks will be paid for at the Contract Unit Prices on Form B: Prices. The amount to be paid for shall be the total number of units, measured as specified herein, which price shall be for full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.
- (b) No separate payment will be made for supply and installation of granular base as these items are incidental to the work herein.
- (c) No separate payment will be made for supply and installation of geotextile as these items are incidental to the work herein.

### E22. MEMORIAL BOULDERS

#### E22.1 Description

E22.1.1 This specification shall cover the installation of ten (10) delivered granite boulders as indicated on Drawings.

E22.1.2 The Contractor shall furnish all labour, materials, equipment and services necessary to complete the Work according to the Drawings and specifications.

## E22.2 Materials

E22.2.1 Granular base shall be as per Drawings and E19

E22.2.2 Geotextile shall be **Combigrid 30/30 Q1 151 GRK 4C**, which is a non-woven geotextile/geogrid combination or approved substitute in accordance with **B7**.

(a) Contact for Combigrid:

Brock White.

879 Keewatin Street

Winnipeg, Manitoba

Ph: (204) 694-3600 or 1 (888) 786-6426

(b) Technical Data:

(i) Raw Material:	Polypropylene/PP
(ii) Nominal Tensile Strength (longitudinal/transverse):	≥ 30 / ≥ 30 kN/m
(iii) Tensile Strength at 2% Elongation (long./trans.):	12 / 12 KN/m
(iv) Elongation at Nominal Tensile Strength (long./trans.):	≤ 8 / ≤ 8 %
(v) Extensional Stiffness at 1% Strain (long./trans.):	600 kN/m / 600 kN/m
(vi) Cyclic Modulus at 0.5% Strain:	≥ 1.150 kN/m
(vii) Torsional Rigidity:	≥ 14.7 kg-cm/deg
(viii) Construction related strain:	0 %

E22.2.3 **Granite Boulders are preselected and have been previously purchased by Contract Administrator.**

E22.2.4 Boulders range in size from 675mm (27") – 900mm (33") Wide x 1200mm (48") – 1520mm (60") Tall.

(a) Boulders to be delivered by:

Mariash Quarry.

279 Vincent Rd

Stony Mountain, Manitoba

Ph: (204) 344-5115

## E22.3 Construction Methods for Memorial Boulders

E22.3.1 The Contractor shall excavate for the base course, compact, install the geotextile, install the base granular and compact to 100% of proctor density.

E22.3.2 Granite Boulders shall be approximately 150mm buried.

(i) Boulders to be set in ground such that approximately boulders are exposed in various heights as per Drawings. The blocks shall be set upon a min. 150mm base layer as per Drawings and **E19**

E22.4 Cleaning as per **D22**.

## E22.5 Method of Measurement and Basis of Payment

E22.5.1 Method of Measurement shall be as follows:

(a) Landscape Blocks shall be measured on a per item basis for:

(i) "Install Delivered Black Granite Memorial Boulders" on Form B: Prices.

E22.5.2 Basis of Payment shall be as follows:

(a) Installation of the delivered memorial boulders and base for memorial boulders will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total

number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator. Said payment shall be understood to include all items necessary and incidental to pick up and installation of the memorial boulders including but not limited to excavation, compaction, geotextile and granular material.

## **E23. CONCRETE PILES FOR FLAG POLES**

### **E23.1 Description**

E23.1.1 The work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools supplies and all other things necessary for an incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following. The specification shall supplement the most up to date version of City of Winnipeg Specification CW 3310 and flag pole manufacturer's written instructions.

- (a) Supply and Install Flag Pole Piles

### **E23.2 Materials**

E23.2.1 All material shall conform to City of Winnipeg Specification CW 3310.

### **E23.3 Construction Methods**

E23.3.1 Pile construction shall not commence until the Contractor has obtained clearance from the appropriate Utility Authorities.

E23.3.2 Piles shall be placed in the positions shown on the Drawings and as directed by the Contract Administrator.

- (a) Excavation

- (i) The Contractor is responsible for determining the excavation method at each Pile location.
- (ii) Excavations for Piles shall be made with equipment designed to remove a core of the diameter shown on the Drawings.
- (iii) Upon reaching the required elevation, the bottom of the excavation shall be cleaned as directed by the Contract Administrator in the field.
- (iv) All excavated material from the piles shall be promptly hauled away from the Site.
- (v) Upon completion of the cleaning out of the bottom to the satisfaction of the Contract Administrator, the reinforcement shall be set in place. It is of utmost importance that this be coordinated in a timely manner as concrete shall be poured immediately after approvals. **Under no circumstances shall a hole be left to stand open after boring has been complete.**

- (b) Inspection of Bores

- (i) Concrete shall not be placed in a bore until the bore has been inspected and approved by the Contract Administrator.
- (ii) The Contractor shall have available suitable light for the inspection of each bore throughout its entire length.
- (iii) All improperly set bore or bottom shall be corrected to the satisfaction of the Contract Administrator.

- (c) Placing Reinforcing Steel

- (i) Placed in accordance with the details shown on the Drawings.
- (ii) Shall be rigidly fastened together, and
- (iii) Lowered into the bore intact before concrete is placed.

- (iv) Spacers shall be utilized to properly locate the reinforcing steel cage in the bore.
- (d) Placing Anchor Bolts
  - (i) The anchor bolts shall be aligned with the flag pole manufacturer's template, matching the bolt holes in the base plate. **Extreme care shall be used in this operation to ensure bolts are aligned properly and are plumb and true.**
  - (ii) The threaded portion of the anchor bolts projecting above the top surface of foundation shall be coated with oil, before the concrete is poured, to minimize the fouling of threads splattered by concrete residue.
- (e) Placing Concrete
  - (i) Care shall be taken to ensure that anchor bolts are vertically aligned and that anchor bolts are properly positioned prior to placement of concrete.
  - (ii) Shall conform to Drawings and Notes
- (f) Protection of Newly Placed Concrete
  - (i) Newly laid concrete threatened with damage by rain, snow, fog, or mist shall be protected with a tarpaulin or other approved means.

E23.4 Cleaning as per **D22**.

E23.5 Method of Measurement and Basis of Payment

E23.5.1 Method of Measurement shall be as follows:

- (a) Concrete Piles for Flag Poles shall be measured on a per unit basis for:
  - (i) "Supply and Install Flag Pole Piles" on Form B: Prices

E23.5.2 Basis of Payment shall be as follows:

- (a) Concrete Piles for Flag Poles will be paid for at the Contract Unit Prices on Form B: Prices. The amount to be paid for shall be the total number of units, measured as specified herein, which price shall be for full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

## **E24. FLAG POLES**

E24.1 Description

E24.1.1 This specification shall cover the supply and installation of aluminum flag poles. The flags are to be supplied and installed by others.

E24.1.2 The Contractor shall furnish all labour, materials, equipment and services necessary to complete the Work according to the Drawings and specifications.

E24.2 Materials

E24.2.1 All materials supplied under this specification shall be of a type approved by the Contract Administrator, and subject to inspection and testing by the Contract Administrator.

- (a) Flag Pole
  - (i) Supplier:  
The Flag Shop Winnipeg  
Contact: Guy Gauthier  
1195 Pembina Hwy  
Winnipeg, MB R3T 2A5  
Phone: 204-452-2689  
Toll Free: 1-800-260-3713

- (ii) Product: HTA25N - 25' Commercial cone tapered aluminum flagpole c/w Econoline internal halyard system with revolving truck & 6" silver ball top.
- (iii) Finish: Clear anodized Brushed Aluminum
- (iv) Approved substitutions must be in accordance with **B7**.

#### E24.3 Construction Methods

- (a) All Work is to be located and installed in accordance with the Drawings and manufacturer's written instructions using approved non-rusting, vandal resistant fasteners to ensure solid, durable, finished work suitable for the purpose intended. Fasteners and assembly hardware shall be incidental to the Work;
- (b) Flag poles to be installed plumb and true to correct elevations and location, as directed by the Contract Administrator. The Contractor shall confirm proposed locations of all site furnishings with Contract Administrator prior to installation;
- (c) Flag poles to be carefully handled so that no parts will be bent, broken or otherwise damaged. Hammering is prohibited.
- (d) Provide ground stakes for lightning protection in accordance with manufacturer's written instructions.
- (e) Check and adjust fittings for smooth operation of halyards.
- (f) Demonstrate flag raising procedure to designated Owner's representative
- (g) Touch-up damaged finishes to approval of Consultant.

#### E24.4 Cleaning as per **D22**.

#### E24.5 Method of Measurement and Basis of Payment

##### E24.5.1 Method of Measurement shall be as follows:

- (a) Flag Poles will be measured on a per item basis for the following items:
  - (i) "Supply and Install Flag Poles" on Form B: Prices.

##### E24.5.2 Basis of Payment shall be as follows:

- (a) Flag Poles will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

### **E25. STEEL DEDICATION PLAQUE STAND**

#### E25.1 Description

- E25.1.1 This specification shall cover the supply and installation of galvanized steel stand which will act as a mounting surface for a dedication plaque. The plaque is to be supplied and installed by others.

#### E25.2 Workmanship

- E25.2.1 Metal Work shall be finished straight, even and smooth and free of any defects to sizes specified and required.
- E25.2.2 Work shall include all necessary items necessary for the complete installation of the Work.
- E25.2.3 Welding is to be neat, symmetrical, clean and unobtrusive in appearance.

#### E25.3 Reference Standards

- E25.3.1 Canadian Institute of Steel Construction (CISC)

- E25.3.2 American Society for Testing and Materials (ASTM)
- E25.3.3 Canadian Standards Association (CSA)
- E25.4 Materials
- E25.4.1 Materials for the Steel Dedication Plaque Stand to be galvanized steel as shown on Drawings.
- E25.4.2 Work is to be free from defects which impair the strength or durability.
- E25.4.3 All edges are to be blunt and free of defects which may be dangerous to people grabbing them.
- E25.4.4 Shall be Black powder coated. Base coat Zinc rich primer. Baked with a final thickness of paint between 5-8mm.
- E25.5 Fabrication
- E25.5.1 Weld joints tight, flush, and grind smooth, in true planes with base materials. Make welds continuous.
- E25.5.2 **Template for drill holes to accommodate plaque (installed by others) will be provided to Contractor ahead of stand production. Drilling to be done prior to galvanizing.**
- E25.5.3 Metal to be suitably cleaned to remove any grease, wax, etc. for proper paint bonding to occur.
- E25.6 Installation
- E25.6.1 Install work plumb, true, square, level, straight and accurately and tightly fitted together and to surrounding Work.
- E25.6.2 Care shall be taken to ensure that no scratches, dents or other imperfections appear as a result of installation.
- E25.6.3 Anchoring system for the Steel Dedication Plaque Stand shall be concrete piles as per Drawings and **E26**
- E25.7 Cleaning as per **D22**.
- E25.8 Method of Measurement and Basis of Payment
- E25.8.1 Method of Measurement shall be as follows:
- (a) Steel Dedication Plaque Stand shall be measured on a lump sum basis for:
    - (i) "Dedication Plaque Stand" on Form B: Prices.
- E25.8.2 Basis of Payment shall be as follows:
- (a) Steel Dedication Plaque Stand shall be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. Said payment shall be understood to include all items necessary and incidental to supply and installation of the plaque stand.

## **E26. FOUNDATIONS**

### **E26.1 General Description**

- E26.1.1 Steel Dedication Plaque Stand, Interpretive Signage Stand and Waste Receptacle are to be set in concrete piles to ensure stability and prevent frost heaving. The current Standard Construction Specifications of the City of Winnipeg, CW 2160 –latest revision - Concrete to be used in Underground Works, is to be utilized in the installation of the concrete works for all below ground components.

## E26.2 Materials

- (a) The specific concrete requirements shall be:
- (b) Sulfate resistant, Type 50 Cement;
- (c) 28 day compressive strength of 30 Mpa;
- (d) maximum aggregate size of 20mm, nominal;
- (e) slump 80 +/- 20mm;
- (f) maximum water/cement ratio 0.49.

## E26.3 Installation

E26.3.1 All posts and supports shall be centred in the concrete footing such that there is a complete collar of concrete around each post and support. Where posts are not perfectly centred there should be a minimum of 2" concrete at any point around the post.

E26.3.2 Depth of concrete piles shall be as per the Drawings

## E26.4 Method of Measurement and Basis of Payment

E26.4.1 Method of Measurement shall be as follows:

- (a) No separate measurement shall be made for Foundations as they shall be incidental to the measurement of Steel Dedication Plaque Stand as per E25 and Interpretive Signage Stand and Waste Receptacle as per **E28**.

E26.4.2 Basis of Payment shall be as follows:

- (a) No separate payment shall be made for Foundations as they shall be incidental to the measurement of Steel Dedication Plaque Stand as per E25 and Interpretive Signage Stand and Waste Receptacle as per **E28**.

## E27. FENCING

### E27.1 Description

E27.1.1 This specification shall cover the supply and installation of GPT timber fencing as shown on the Drawings and specified herein.

E27.1.2 The Contractor shall furnish all labour, materials, equipment and services necessary to complete the Work according to the Drawings and specifications.

### E27.2 Quality Assurance

E27.2.1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

### E27.3 Delivery, Storage and Handling

E27.3.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

E27.3.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

E27.3.3 Storage and Handling Requirements:

- (a) Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- (b) Replace defective or damaged materials with new.

### E27.4 Materials

E27.4.1 Pressure Treated Timbers, Dimension Lumber and Poles: To CSA 080, ACQ-C treatment, Green colour, No. 2 or better Pine, S4S. Minimum moisture content at treatment in accordance with CSA 080. Minimum retention for above ground use 4.0 kg/m<sup>3</sup> and for

ground contact 6.4 kg/m<sup>3</sup>. All wood to be free of defects, any warped, checked or bent materials will be rejected.

E27.4.2 Hardware: to CAD/CSA-G164, for exterior work and acceptable for ACQ treated lumber. All hardware to be hot dipped galvanized, size and type to suit application and as per Drawings.

E27.4.3 Preservative: Clear type to CSA 080 for above ground applications and preservative suitable for below grade applications on all horizontal boards that are buried below grade.

E27.4.4 Stain for Fence Boards and Routed Lettering: Black in colour, water-based, solid exterior stain.

(a) Supplier:

Western Paint  
521 Hargrave Street  
Winnipeg, MB R3A )Y1  
Phone: 204-942-7271

(i) Product: *ZAR Decking & Siding Exterior Finishes Solid Stain*

(ii) Colour: *Black Canyon* Tintable Colour

(iii) Approved substitutions must be in accordance with **B7**.

E27.4.5 Granular: 19mm (3/4") down crushed limestone.

## E27.5 Construction Methods

### E27.5.1 Handling and use of treated timber

(a) Handle and use treated material in a manner that will avoid damage or field fabrication causing alteration in original treatment.

(b) Treat in field, cuts and damages to surface of treated material with an appropriate, clear preservative as described in CSA 080.1974. Ensure that damaged areas such as abrasions nail and spike holes, are thoroughly saturated with field treatment solutions as per CSA 080.1974.

E27.5.2 All work is to be located and installed in accordance with the Drawings.

E27.5.3 Contractor shall confirm proposed location of fencing with Contract Administrator prior to fabrication.

E27.5.4 Contractor to verify underground utility locations prior construction and report any discrepancies to the Contract Administrator immediately.

E27.5.5 Contractor to dig bore holes and install fence posts as per Drawings.

E27.5.6 All wood cuts shall be sanded to remove any burrs.

E27.5.7 Treat surfaces of material with appropriate wood preservative before installation.

E27.5.8 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum 3 minute soak into lumber.

E27.5.9 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

E27.5.10 Treat material as follows :

(a) Ends of all fence posts that have been cut.

(b) Ends of wood rails that have been cut.

(c) Ends of wood boards that have been cut. Where possible orientate cut ends towards grade.

(d) Machine routing of lettering as per Drawings. Concave so as to not trap water.

(e) Staining as per Drawings.

- E27.5.11 Do all nailing and fastening neatly, evenly, and thoroughly. All screws shall be slightly countersunk so as not to protrude above the face of the wood surface.
- E27.5.12 Install all members true to line, levels, and elevations. Set plumb and space uniformly.
- E27.5.13 Build work square, true and accurate to required height, length, and depth with joints closely fitted and properly secured.
- E27.5.14 Use timbers of the longest possible length to minimize joints.
- E27.5.15 Staining of fence boards:
- (a) Stain to be water-based, semi-transparent exterior stain as per: **E27.4.4.**
  - (b) Apply finishes only when temperature of surfaces to be finished and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
  - (c) Do not apply finishes when relative humidity exceeds 85 percent, at temperatures less than 5 deg F (3 deg C) above the dew point, or to damp or wet surfaces.
  - (d) Do not apply exterior finishes in snow, rain, fog, or mist.
  - (e) Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
  - (f) Remove dust, dirt, oil, and grease by washing with a detergent solution; rinse thoroughly with clean water and allow to dry. Remove grade stamps and pencil marks by sanding lightly. Remove loose wood fibers by brushing.
  - (g) Apply finishes according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
  - (h) Apply finishes to produce surface films without cloudiness, lap marks, brush marks, runs, ropiness, or other surface imperfections.
  - (i) **Tops and Bottoms (short sides) of fence boards must be pre-stained prior to installation. Backs of fence boards and 3 sides of posts can be stained after installation. Care must be taken to ensure that stain does not mark-up side of board that is to remain stain-free.**
- E27.6 Cleaning as per **D22.**
- (a) Upon completion remove all sawdust, scrap pieces of wood, metal or plastic lumber straps, and all other debris and legally dispose of off-site.
- E27.7 Method of Measurement and Basis of Payment
- E27.7.1 Method of Measurement shall be as follows:
- (a) The supply and installation of Timber Fencing shall be measured on a per linear metre basis for:
    - (i) "Supply and Install 6' Tall Fence";
    - (ii) "Supply and Install 4.5' Tall Fence";
    - (iii) "Supply and Install 3' Tall Fence", and;
    - (iv) "Supply and Install 3' to 6' Tall Transition Fence" on Form B: Prices;
  - (b) The supply and installation of Entry Sign Bollard shall be measured on a per item basis for:
    - (i) "Supply and Install Entry Sign Bollard" on Form B: Prices;
  - (c) Fence Painting shall be measured on a per square metre basis for:
    - (i) "Staining Fence" on Form B: Prices;
- E27.8 Basis of Payment shall be as follows:
- (a) Fencing and Bollards will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. The price

shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

## **E28. SITE FURNITURE**

### E28.1 Description

E28.1.1 This specification shall cover the **pick and install** of one (1) waste receptacle and one (1) interpretive panel and associated steel stand. It shall also cover the **supply and installation** of four (4) benches.

E28.1.2 The Contractor shall furnish all labour, materials, equipment and services necessary to complete the Work according to the Drawings and specifications.

### E28.2 Materials

E28.2.1 All materials supplied under this specification shall be of a type approved by the Contract Administrator, and subject to inspection and testing by the Contract Administrator.

#### (a) WASTE RECEPTACLE

- (i) Supplier: City of Winnipeg
- (ii) Product: Waste Receptacle Side Opening Metal Slat Type - Product #52501063GLV and Wire Basket - Product # 52501058GLV, as per current SCD-119
- (iii) Finish: Galvanized
- (iv) Mounting: Surface mount with expansion bolts
- (v) Approved substitutions must be in accordance with **B7**.

#### (b) BENCH

- (i) Supplier: Landscape Forms
- (ii) Product: FGP Bench, backed, 70in, wood, end arms
- (iii) Finish: Clear Anodized Aluminum and Jarrah Wood
- (iv) Mounting: Surface mount
- (v) Approved substitutions must be in accordance with **B7**.

#### (c) INTERPRETIVE PANEL AND STEEL STAND

- (i) Supplier: City of Winnipeg
- (ii) Product: *"Battle of Kapyong"* Interpretive Sign. Arcrylic top with plywood backer. Size: 27"W x 18"T. Steel Stand Dimensions: 27"W x 37 ½" T (for sign) and 10" x 10" (base plate)
- (iii) Steel Stand Finish: Black Powder coated steel
- (iv) Mounting: Surface mount
- (v) Approved substitutions must be in accordance with **B7**.

E28.2.2 Contacts for ordering Site Furniture:

- (a) Waste Receptacle: [pwd-cps-orderdesk@winnipeg.ca](mailto:pwd-cps-orderdesk@winnipeg.ca)
- (b) Benches: Landscape Forms  
7800 E. Michigan Avenue  
Kalamazoo, MI 49048-9543  
P: 800.521.2546 F: 269.381.3455  
[www.landscapeforms.com](http://www.landscapeforms.com)
- (c) Interpretive Panel and Steel Stand:

City of Winnipeg  
Waverly Street  
Bryan Babynchuk  
P: 204.479.5488

**E28.3 Construction Methods**

- (a) All Work is to be located and installed in accordance with the Drawings, Manufacturer's written instructions and associated SCDs using approved non-rusting, vandal resistant fasteners to ensure solid, durable, finished work suitable for the purpose intended. Fasteners and assembly hardware shall be incidental to the Work;
- (b) All furnishings and fixtures to be installed plumb and true to correct elevations and location, as directed by the Contract Administrator. The Contractor shall confirm proposed locations of all site furnishings with Contract Administrator prior to installation;
- (c) All furnishings and fixtures to be carefully handled so that no parts will be bent, broken or otherwise damaged. Hammering is prohibited.

**E28.4 Cleaning as per D22.**

**E28.5 Method of Measurement and Basis of Payment**

**E28.5.1 Method of Measurement shall be as follows:**

- (a) Site Furniture will be measured on a per item basis for the following items:
  - (i) "Supply and Install Benches";
  - (ii) "Pick Up and Install Waste Receptacle", and;
  - (iii) "Pick Up and Install Interpretive Panel and Steel Stand" on Form B: Prices.

**E28.5.2 Basis of Payment shall be as follows:**

- (a) Site Furniture will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

**E29. PLANTING BED**

**E29.1 Description**

**E29.1.1** This specification shall cover the excavation of planting beds and the supply and installation of topsoil soil and woodchips.

**E29.2 Materials**

**E29.2.1 Topsoil Mix**

- (a) Planting soil shall consist of black top soil, a fertile friable natural loam containing by volume not less than 4% and no more than 25% of organic matter for clay loams, and not less than 2% and no more than 25% for sandy loams, with an acidity value ranging from pH 6.0 to 8.0 and capable of sustaining vigorous plant growth. Topsoil is to be free of any mixture of subsoil, clay lumps and free of stones and other extraneous matter. It shall not contain couch or crab grass rhizomes.

**E29.2.2 Woodchip Mulch**

- (a) Mulch to be placed within the proposed planting beds.
- (b) Mulch is to be a clean bark or wood chip mulch with chips not less than 15mm nor larger than 75mm in size and not more than 20mm thick. Mulch is to be free of leaves, branches and other extraneous matter.

### E29.3 Construction Methods

#### E29.3.1 General

- (a) Layout of planting beds shall be as per Drawings

#### E29.3.2 Installation

- (a) Excavation shall be in accordance with SCD-501R and **E15**
- (b) Upon excavation of the planting bed, the excavation shall be backfilled with a topsoil mixture to a depth to permit adequate installation and stabilization of the plant material. Topsoil shall be placed in accordance with City of Winnipeg Standard Construction Specification CW 3540-R5 to a 400mm depth. Woodchip Mulch to be placed on top of shrub bed in accordance with SCD-501R.

#### E29.4 Cleaning as per **D22**.

#### E29.5 Method of Measurement and Basis of Payment

##### E29.5.1 Method of Measurement shall be as follows:

- (a) Planting Bed will be measured on a per square metre basis for:
  - (i) "Supply and Install Planting Beds"; on Form B: Prices.
- (b) No separate measurement will be made for the supply and installation of wood chips as this item is incidental to **E31**.

##### E29.5.2 Basis of Payment shall be as follows:

- (a) Planting Beds will be paid for at the Contract Unit Prices as indicated on Form B: Prices. The amount to be paid for shall be the total number of units on Form B: Prices. This price shall be payment in full including all costs for the excavation of the planting bed and supply and installation of the topsoil and woodchips. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.
- (b) No separate measurement will be made for the supply and installation of wood chips as this item is incidental to **E31**.

### **E30. TREES, SHRUBS, PERENNIALS AND GRASSES AND GROUND COVERS PLANTING**

#### E30.1 Description:

E30.1.1 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following:

- (a) Supply and Installation of trees;
- (b) Supply and Installation of shrubs;
- (c) Supply and Installation of perennials and grasses, and;
- (d) Supply and Installation of ground covers.

#### E30.1.2 **Species List and required sizes shall be as per Drawing K.47-D**

#### E30.2 Materials

##### E30.2.1 General

- (a) All nursery stock supplied shall be Canadian prairie nursery grown, of the species and sizes indicated on the drawings. Quality shall be in accordance with the latest "Guide Specification for Nursery Stock of the Canadian Nursery Trades Association".

- (b) Any nursery stock dug from native stands, wood lots, orchards or neglected nurseries and which have not received proper cultural maintenance as advocated by the Canadian Nursery Trades Association shall be designated as "collected plants". The use of "collected plants" will not be permitted unless approved by the Contract Administrator.
- (c) The Contract Administrator reserves the right to inspect the plant material at their original source, and to instruct the supplier on root and branch pruning requirements.
- (d) Nomenclature of specified nursery stock shall conform to the International Code of Nomenclature for Cultivated Plants and shall be in accordance with the approved scientific names given in the latest edition of standardized Plant Names. The names of varieties not names therein are generally in conformity with the names accepted in the nursery trades.
- (e) Plants larger than specified may be used if approved by the Contract Administrator. The use of such plants shall not increase the Contract price.
- (f) All nursery stock shall be measured when the branches are in their normal position. Height and spread dimensions specified refer to the main body of the plant and not from branch tip.
- (g) All nursery stock shall be well branched, true to type, structurally sound, possess a well developed, undamaged root system and shall be free of disease, insect infestations, rodent damage, sunscald, frost cracks and other abrasion or scare to the bark. All parts of the nursery stock shall be moist and show live, green cambium when cut.
- (h) At least one plant of each variety supplied shall bear a tag showing both the botanical and common name of the plant.

#### E30.2.2 Miscellaneous Materials

- (a) Water shall be potable and free of minerals which may be detrimental to plant growth.
- (b) Stakes shall be metal T-Bar, steel, 40x40x5x2440mm. Stakes must be adequately installed into sub-base as to ensure they are not easily removed by vandalism.
- (c) Guying Wire shall be 3mm diameter multi-strand galvanized steel cable.
- (d) Guying Collar shall be plastic tube, 13mm diameter, nylon reinforced.
- (e) Trunk Protection shall be plastic perforated spiraled strip.
- (f) Fertilizer shall be a slow release formulation of low nitrogen and high phosphorus e.g. 10-50-12. Apply quantities at rates stated by product manufacturer.
- (g) Planting Soil shall be as per specification **E29** - Planting Bed.
- (h) Root Ball Burlap shall be 150 g Hessian burlap, biodegradable.
- (i) Wire Baskets shall be horticultural accepted product designed to carry the weight and to contain a burlap-covered root ball. Minimum diameter basket size is to conform to the same minimum diameter of the tree root ball for the respective minimum tree caliper sizes.

#### E30.2.3 Plant Material

- (a) Nomenclature of specified trees is to conform to the International Code of Nomenclature for Cultivated Plants and is to be in accordance with the approved scientific names given in the latest edition of the Standardized Plant Names.
- (b) Trees are to be characteristically developed for their species and structurally sound, well branched, healthy and vigorous and densely foliated when in leaf. The tree is to have a healthy, well developed, fibrous root system which may be verified through a testing procedure that destructively samples one or more randomly selected root balls.

- (c) Trees are to have been root pruned regularly, but not later than one growing season prior to arrival on Site. The Contractor may be required to furnish documentation to the client on their root-pruning program. Trees in excess of 75mm caliper are to have been half root pruned during each of two successive growing seasons, the latter at least, one growing season prior to arrival on Site.
- (d) All parts of the trees, especially the lower branches, are to be moist and show live, green cambium tissue when cut.
- (e) Trees are to have only one, sturdy, reasonably straight and vertical trunk, and a well balanced crown with fully developed leader.
- (f) Trees are to be free of disease, insect infestation, rodent damage, sun scald, frost cracks, abrasions, unhealed scars, scars exceeding 5cm in diameter, major forks or crooks in the trunk, broken branches, or angled leaders. Trees having the above defects will not be accepted by the Contract Administrator.
- (g) Trees having a leader which has developed at a sharp angle to the trunk as a result of pruning or trunk damage will not be accepted.
- (h) Trees exhibiting suppressed, weakly developed branches due to competition from other closely spaced trees in the nursery will not be accepted. Trees exhibiting dead branches will not be accepted.
- (i) Any tree that has come out of dormant stage and is too far advanced will not be accepted unless prior approval obtained. Approval is required for any tree which has been held in cold storage.
- (j) Balled and burlapped trees in excess of a 3m height must have been dug with large firm ball. Roots in root balls must be comprised of 75% fibrous and feeder root systems. Secure root balls with burlap, heavy twine and rope. For trees 75mm or more in caliper, wrap ball in double layer of burlap and drum lace with minimum 10mm diameter rope. Protect root balls against sudden changes in temperature and exposure to heavy rainfall.
- (k) Tree spade dug trees are to be dug with mechanized digging equipment with hydraulic spade. Lift root ball from hole, place in wire basket designed for purpose and lined with burlap. Tie basket to ball with heavy rope. Take care not to injure trunk of tree with wire basket ties or rope.
- (l) Use of collected or native trees is not permitted.

#### E30.2.4 Plant Quantity and Size

- (a) Trees, shrubs, perennials, grasses and ground covers are to be supplied and planted at the quantities and caliper listed on the Planting Lists which are shown on the Drawings. Any variations to species, size or caliper of specified plants will require a request for approval from the Contract Administrator.
- (b) Any changes in planting locations will be determined on-site by the Contract Administrator.
- (c) Trees are to be measured when the branches are in their normal position. Height dimensions specified are to refer to the main body of the tree and not from branch tip to root base. Where trees have been measured by caliper or diameter, reference is to be made to the diameter of the trunk measured 15cm above the ground as the tree stands in the nursery prior to lifting. Caliper of tree shall be appropriately designed on a permanently fixed tag on one of the branches.

#### E30.2.5 Shipment and Pre-Planting Care

- (a) Coordinate shipping of trees and excavation of holes to ensure minimum time lapse between digging and planting.
- (b) Tie branches of trees securely, and protect trees against abrasion, exposure and extreme temperature change during transit. Avoid binding of trees with rope or wire which would damage bark, break branches or destroy natural shape of tree. Give full support to root ball of trees during lifting.

- (c) Cover tree foliage with tarpaulin, and protect bare roots by means of dampened straw, peat moss, saw dust or other acceptable material to prevent loss of moisture during transit and storage.
- (d) Remove broken and damaged roots with sharp pruning shears. Make clean cuts, and cover cuts over 10mm diameter with a tree wound dressing.
- (e) Keep roots moist and protected from sun and wind. Heel-in trees which cannot be planted immediately in shaded areas and water well.

### E30.3 Construction Methods

#### E30.3.1 Workmanship

- (a) Location of trees will be staked out or painted on Site by the Contractor. Locations shall be approved by the Contract Administrator prior to installation.

#### E30.3.2 Planting Time

- (a) Plant deciduous trees during dormant period before buds have broken. Trees noted for spring planting only, must be planted in dormant period.
- (b) Plant only under conditions that are conducive to health and physical conditions of trees.

#### E30.3.3 Excavation

- (a) Planting pits shall be excavated as per drawing SCD-501 for shrubs, perennials, grasses and ground covers and drawing SCD-517 for trees. Hand dig pits where required to protect underground utilities.
- (b) Protect bottom of excavations against freezing.
- (c) Remove water which enters excavations prior to planting. Ensure source of water is not ground water and notify Contract Administrator.

#### E30.3.4 Installation

- (a) Installation shall be as per Drawing SCD-501 for shrubs and perennials, and Drawing SCD-517 for trees.
- (b) Planting shall be done during periods of suitable weather conditions and in accordance with locally accepted practice.
- (c) Trees are to be planted within forty eight (48) hours of excavation from the nursery.
- (d) No tree pit is to be left open at the end of the Contractor's Work Day. Planting program is to be planned to ensure that all approved trees delivered to the Site at designated planting locations are installed and thoroughly watered the same day as delivery.
- (e) With balled and burlapped root balls and root balls in wire baskets, burlap shall be loosened and cut away from the top 1/3 without disturbing root ball. Wire shall be cut away and removed from the top 1/3 of the root ball. Burlap or rope shall not be pulled from under root ball. Non-biodegradable wrapping shall be removed.
- (f) After inserting the tree and tamping the root system with topsoil in layer of 150mm, water shall be poured in until the pit is thoroughly soaked. Filling of the hole shall then be completed and the fill-in soil shall be packed firmly around the roots, leaving a concave surface for convenient watering. After filling, the planting shall be watered at frequent intervals.
- (g) Each tree is to have an earth saucer at its base having a diameter as large as the excavation with a 10cm lip formed at the perimeter of the saucer to retain water.
- (h) All nursery stock shall be set plumb in the centre of pits and at levels as shown on the planting details after settlement has taken place.
- (i) Nursery stock shall be faced to give the best appearance or relationship to adjacent structure and to the approval of the Contract Administrator. Trees shall be placed equal to depth they were originally growing in nursery.

- E30.3.5 Fertilizing
- (a) When planting is completed, give surface of planting saucer dressing of fertilizer meeting the requirements of Specification. Mix fertilizer thoroughly with top layer of planting soil and water in well.
- E30.3.6 Trunk Protection
- (a) Install trunk protection on trees as indicated.
  - (b) Install trunk protection prior to installation of tree supports when used.
- E30.3.7 Pruning
- (a) The Contractor shall provide a licensed Manitoba Certified Arborist for each work crew or work site.
  - (b) Employ clean sharp tools and make cuts flush with branch collars. Remove dead and injured branches.
- E30.3.8 Protection of Stock
- (a) All nursery stock shall be well protected from damage and drying out from the time of digging until the time of planting on site. All roots shall be cleanly cut; split roots are not acceptable.
  - (b) Nursery stock shall be transplanted with care to prevent damage. Branches shall be carefully tied in such a manner so as not to break or damage trunks. Points of contact with equipment shall be padded. All nursery stock, which cannot be planted immediately upon arrival at the site, shall be well protected to prevent drying out and shall be kept moist until commencement of planting.
- E30.3.9 Wound Dressing
- (a) Horticulturally accepted non-toxic, non-hardening emulsion. Wound Dressing must be approved by Contract Administrator.
- E30.3.10 Maintenance
- (a) The Contractor shall be responsible for the maintenance of the trees for a period of one (1) year from the date of Substantial Performance. Any areas planted after September 15th, the maintenance period will commence on May 15th of the following year or such date as mutually agreed upon by all parties.
  - (b) The Contractor shall be responsible for the maintenance of the shrubs and perennials for a period of one (1) year from the date of Substantial Performance. Any areas planted after September 15th, the maintenance period will commence on May 15th of the following year or such date as mutually agreed upon by all parties.
  - (c) Water to ensure soil moisture conditions for optimum growth and health of plant material. Ensure watering techniques do not cause erosion.
  - (d) Reform damaged watering saucers.
  - (e) Remove weeds bi-monthly.
  - (f) Replace or re-spread damaged, missing or disturbed mulch.
  - (g) If required to control insects, fungus and disease, use appropriate control methods in accordance with Federal, Provincial and Municipal regulations. Obtain product approval from Contract Administrator prior to application.
  - (h) Apply fertilizer as directed by manufacturer's specifications.
  - (i) Remove dead, broken or hazardous branches from plant material.
  - (j) Keep trunk protection and tree supports in proper repair and adjustment.
  - (k) Remove trunk protection, tree supports and level watering saucers at end of warranty period.

- (l) Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.
- (m) 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.

**E30.3.11 Warranty**

- (a) The Contractor shall, at his/her expense, warrant the Work against any and all defects or deficiencies resulting from insect infestation, disease and mechanical damage due to improper handling, installation or maintenance, for a period of two (2) years for trees and one (1) year for shrubs, perennials grasses and ground covers from the date of the Total Performance. Nursery stock damaged by vandalism or reasons beyond the control of the Contractor shall be replaced by the client.
- (b) End-of-Warranty inspection will be conducted by the Contract Administrator.
- (c) The Contract Administrator reserves the right to request material replacement or extend the Contractor's Maintenance responsibilities for an additional one (1) year if, at the end of the Warranty Period, leaf development and growth are not sufficient to ensure future survival of the plant material.

**E30.3.12 Replacements**

- (a) During the Maintenance Period, the Contractor shall remove from Site any plant material that has died or failed to grow satisfactorily as determined by the Contract Administrator and replace as per Specifications within a maximum ten (10) day period from notification.
- (b) Defective plants shall be replaced within three (3) days of notification to the Contractor.
- (c) The Contractor shall extend Maintenance and Warranty on replacement tree for a period equal to the original Maintenance and Warranty Periods.
- (d) The Contractor shall continue such replacement, Maintenance and Warranty until tree is acceptable.

**E30.3.13 Cleaning as per D22.**

**E30.3.14 Method of Measurement and Basis of Payment**

**E30.3.15 Method of Measurement shall be as follows:**

- (a) Trees, Shrubs and Perennials Planting will be measured on a per unit basis for:
  - (i) "Supply and Install 4" Perennials";
  - (ii) "Supply and Install 1 gal. Perennials";
  - (iii) "Supply and Install 2 gal. Shrubs", and;
  - (iv) "Supply and Install Trees" and on Form B: Prices.

**E30.3.16 Basis of Payment shall be as follows:**

- (a) Trees, Shrubs, Perennials, Grasses and Ground Covers will be paid for at the Contract unit price, which shall be payment in full including all costs for the trees, shrubs, perennials, extended maintenance, and all other items incidental to the Work included in this Specification.

**E31. WOOD CHIPS**

**E31.1 Description**

**E31.1.1** This specification shall cover the supply and installation of Woodchip Mulch:

- (a) located within and around planting beds; and
- (b) in separate areas as identified on Drawings.

### E31.2 Materials

#### E31.2.1 Woodchips

- (a) Natural. Clean bark or wood chip mulch with chips not less than 15mm nor larger than 75mm in size and not more than 20mm thick. **Mulch is to be free of leaves, branches and other extraneous matter.** Quantity 71 SM.

### E31.3 Construction Methods

- E31.3.1 Woodchip Surfacing around all areas shall include a 75mm layer of **compacted** woodchips throughout.

### E31.4 Cleaning as per **D22**.

### E31.5 Method of Measurement and Basis of Payment

#### E31.5.1 Method of Measurement shall be as follows:

- (a) The supply and installation of Woodchips shall be measured on a per square metre basis for:
  - (i) "Supply and Install Wood Chip Mulch", on Form B:Prices.

#### E31.5.2 Basis of Payment shall be as follows:

- (a) The supply and installation of Woodchips will be paid for at the Contract Unit Prices as indicated on Form B: Prices. The amount to be paid for shall be the total number of units on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

## **E32. SOIL AND SOD**

### E32.1 Description

- E32.1.1 In addition to the current version of CW 3510 and CW 3540, this specification shall cover the supply and installation of new topsoil and sod over all graded areas including; around the perimeter of new play area and the construction access route to the new play area.
- E32.1.2 The Contractor shall furnish all labour, materials, equipment and services necessary to complete the Work according to the Drawings and specifications.

### E32.2 Materials

- E32.2.1 Topsoil to conform to current version of CW 3540.
- E32.2.2 Sod to conform to current version of CW 3510.

### E32.3 Construction Methods

- E32.3.1 The Contractor shall install mineral sod and a minimum 75 mm compacted thickness of topsoil, as required, bringing up level of finished grade as necessary as per SD 243.
- E32.3.2 Areas to be sodded are to be laid out on Site and approved by the Contract Administrator before commencing Work. Work outside the limit approved by the Contract Administrator will not be measured and will not be paid for under this section but considered incidental to the Work. Such incidental items that will not be measured include but are not limited to topsoil and sod placed at the edge of new paving. Incidental Site restoration shall conform to the same Specifications.
- E32.3.3 Areas to be sodded are to be laid out on Site and approved by the Contract Administrator before commencing Work. Work outside the limit approved by the Contract Administrator

will not be measured and will not be paid for under this section but considered incidental to the Work. Such incidental items that will not be measured include but are not limited to topsoil and sod placed at the edge of new paving. Incidental Site restoration shall conform to the same Specifications.

E32.3.4 Where new sod will meet existing, employ a vertical shearing operation, such as using a sharp spade or edger, along the outside edges of the excavation to create a clean and definite line for the new sod to abut flush to.

E32.3.5 Restoration shall be achieved using topsoil and sod unless otherwise directed by the Contract Administrator.

E32.3.6 Thirty (30) day maintenance period on sod will commence at Total Performance and acceptance.

E32.4 Cleaning as per **D22**.

E32.5 Method of Measurement and Basis of Payment

E32.5.1 Method of Measurement shall be as follows:

- (a) Soil and Sod will be measured on a square metre basis for "Soil and Sod" on Form B: Prices.

E32.5.2 Basis of Payment shall be as follows:

- (a) Soil and Sod will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.