



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 256-2008

ELZÉAR GOULET MEMORIAL PARK

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 ELZÉAR GOULET MEMORIAL PARK

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, April 22, 2008..

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

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

B3. SITE INVESTIGATION

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

B3.2 The Bidder is advised that the existing site is being excavated by other and all existing buildings are being removed. It is anticipated that the site will be cleared of all buildings and deleterious materials now on site prior to Construction start up.

B4. ENQUIRIES

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

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

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

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

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

B5. ADDENDA

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

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

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

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

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

B6. SUBSTITUTES

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

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

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

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

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

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

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

B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.

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

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

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

B7. BID COMPONENTS

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

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

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

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

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

B7.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.

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

B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, may result in the Bid being determined to be non-responsive.

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

B7.8 Bids shall be submitted to:

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

B8. BID

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

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

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

- B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.
- B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B8.4 Paragraph 12 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
 - (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B8.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.
- B8.4.2 All signatures should be witnessed, except where a corporate seal has been affixed.
- B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B9. PRICES

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

B10. QUALIFICATION

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

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

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

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

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

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

B11. BID SECURITY

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

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

B11.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.

B11.1.2 All signatures on bid securities shall be original, and shall be witnessed or sealed as required.

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

B11.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B11.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B11.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

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

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

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

B12.1.1 Bidders or their representatives may attend.

B12.1.2 Bids determined by the Manager of Materials, or his designate, to not include the bid security specified in B11 will not be read out.

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

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

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

B13. IRREVOCABLE BID

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

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

B14. WITHDRAWAL OF BIDS

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

B14.1.1 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.

B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

(a) retain the Bid until after the Submission Deadline has elapsed;

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

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

B15. EVALUATION OF BIDS

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

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

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

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

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

- (a) If the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder is within the budgetary provision for the Work, no adjustment will be made to the Total Bid Price; or
- (b) If the lowest responsive Bid submitted by a responsible and qualified Bidder exceeds the budgetary provision for the Work, the Total Bid Prices of all responsive Bids submitted by responsible and qualified Bidders will be adjusted by progressively deducting items in the order listed, until a Total Bid Price within the budgetary provision is achieved.
 - (i) Item 23 – Supply and install native forbe plugs
 - (ii) Item 22 – Supply and install planting bed
 - (iii) Item 17 – Supply and install plaza interpretive wall
 - 4 meters of precast concrete cap
 - 6 square face meters of concrete core
 - 5 square meters of stone veneer
 - (iv) Item 20(a) – Supply and install sidewalk lighting (bollard)

B15.5 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B15.6 Further to B15.1 (a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B16. AWARD OF CONTRACT

- B16.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.
- B16.2.1 Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B16.3 Subject to B16.2, 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.
- B16.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of the development of a passive memorial park with earthwork, paving, walls, lighting and site furniture.

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

- (a) Earth work and grading;
- (b) White concrete sidewalk;
- (c) Limestone pathway;
- (d) Unit paver plaza;
- (e) Concrete walls with veneer stone finish;
- (f) Site lighting;
- (g) Site furniture;
- (h) Landscape rocks;
- (i) Sodding;
- (j) Planting bed with native forbe plugs.

D3. CONTRACT ADMINISTRATOR

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

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

D3.2 At the pre-construction meeting, Ms. Russell will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D4. CONTRACTOR'S SUPERVISOR

D4.1 At the pre-construction meeting, the Contractor shall identify his designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

D5. NOTICES

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

D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3,

D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.

D5.3 All notices of appeal to the Chief Administrative Officer shall be sent to the following address or facsimile number:

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

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

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

D6. FURNISHING OF DOCUMENTS

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

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

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

D8. SAFE WORK PLAN

D8.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D8.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

D9. INSURANCE

D9.1 The Contractor shall provide and maintain the following insurance coverage:

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability, broad form property damage cover and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
- (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- (c) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.

D9.2 Deductibles shall be borne by the Contractor.

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

D9.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator.

D10. PERFORMANCE SECURITY

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

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

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

D10.2 If the bid security provided in his Bid was not a certified cheque or draft pursuant to B11.1(c), the Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D11. SUBCONTRACTOR LIST

D11.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.

SCHEDULE OF WORK

D12. COMMENCEMENT

- D12.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.
- D12.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D7;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D8;
 - (iv) evidence of the insurance specified in D9;
 - (v) the performance security specified in D10;
 - (vi) the Subcontractor list specified in D11.
 - (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.
- D12.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.
- D12.3 The City intends to award this Contract by May 02, 2008.

D13. CRITICAL STAGES

- D13.3 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) Sections of existing gravel may be temporarily left at the discretion of the Contractor to facilitate installation of feature rocks, concrete wall cores, and their foundations, to be coordinated on site with Contract Administrator.
 - (b) The City has planned an opening ceremony for the park, the week of September 08, 2008 and all Work must be complete a minimum of two days prior to the event. The date for the event will be discussed at the start up meeting.

D14. WORK BY OTHERS

- D14.1 Demolition and removal of existing buildings including removal and disposal of foundations (slabs, grade beams, concrete pads, piles 1m below existing grade, directly associated with the buildings), fences and any garbage (old refrigerators, etc.) by Paragon. Demolition work schedules for completion by April 30, 2008.
- D14.2 Entrance sign and interpretive signage installation to be coordinated with work to be completed under this contract.

D15. SUBSTANTIAL PERFORMANCE

- D15.1 The Contractor shall achieve Substantial Performance by August 8, 2008.
- 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 August 22, 2008.

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 one thousand dollars (\$1000.00) per Calendar Day for each and every Calendar 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.

CONTROL OF WORK

D18. JOB MEETINGS

D18.1 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.

D18.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D19. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D19.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

MEASUREMENT AND PAYMENT

D20. PAYMENT

- D20.1 Further to C12, effective January 1, 2007 the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

FORM H1: PERFORMANCE BOND
(See D10)

KNOW ALL MEN BY THESE PRESENTS THAT

_____ ,
(hereinafter called the "Principal"), and

_____ ,
(hereinafter called the "Surety"), are held and firmly bound unto **THE CITY OF WINNIPEG** (hereinafter called the "Obligee"), in the sum of

_____ dollars (\$_____.)

of lawful money of Canada to be paid to the Obligee, or its successors or assigns, for the payment of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has entered into a written contract with the Obligee dated the

_____ day of _____, 20____, for:

BID OPPORTUNITY NO. 256-2008

ELZÉAR GOULET MEMORIAL PARK

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;
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)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

By: _____ (Seal)
(Attorney-in-Fact)

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

(Date)

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

RE: PERFORMANCE SECURITY – BID OPPORTUNITY NO. 256-2008

ELZÉAR GOULET MEMORIAL PARK

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Specifications shall apply to the Work.
- E1.2 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.2.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- 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>
L1.1	Layout Plan / Planting Plan
L1.2	Layout Plan - Dimensions
L1.3	Enlargement Plans
L2	Grading Plan
L3.1	Details
L3.2	Details
E1	Electrical Plan
SS1	Site Services Plan

GENERAL REQUIREMENTS

E2. PROTECTION OF EXISTING TREES

- E2.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities.
- E2.2 All trees will have a protective zone at the dripline of the crown, which will remain free of digging, trenching, grade changes, stock piling of materials and soil compaction, throughout the duration of the Contract. Protective snow fencing around these areas is required.
- E2.3 Trees within and immediately adjacent to proposed construction areas and those identified to be at risk by the Contract Administrator, will require 25 x 100 x 2400mm wood planks strapped to the tree trunk to completely protect the tree trunk from impact damage. (Smaller trees will be similarly protected using proportionally sized wood planks.)
- E2.4 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 3m 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. They must be properly trimmed with sharp tools to prevent crushing or being pulled up by construction equipment. No paint is required. All exposed roots must be mulched until the excavated area is filled with clean earth to avoid exposure to sunlight and desiccation.
- E2.5 Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the Work required. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of

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

E2.6 Work on-Site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.

E2.7 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the City Forester or his designate.

E2.8 No separate measurement or payment will be made for the protection of trees.

E2.9 Auguring under existing trees will be the only acceptable method of underground installations. Any other excavations must be approved by the Forestry Branch.

E3. PROTECTION OF SURVEY INFRASTRUCTURE

E3.1 Notwithstanding clause 4 "Protection of Survey Bars" of the Standard Provisions: Current legislation, The Surveys Act, places the onus on those undertaking construction to protect the Survey Infrastructure from damage as a result of their activity.

E3.2 Further to C6.26(g), at least 72 hours prior to the commencement of the On-Site Work the Contractor shall contact the City of Winnipeg, Geomatics Services Branch at 986-4826 (8:00 am to 4:00 pm Monday to Friday excluding holidays) to obtain underground clearance. Geomatics Services will locate and mark all known outline survey monuments and geodetic control monuments and confirm the physical condition of those monuments upon completion of construction, at no cost to the Contractor.

E3.3 Where a survey post, bar or control monument lies in the line of the proposed Work and must be disturbed, the Contractor shall provide the Contract Administrator with 48 hours notice to permit referencing for future replacement, at no cost to the Contractor. Failure to provide the specified notice shall result in the Contractor paying for all costs associated with replacing or relocating the disturbed outline survey monuments and geodetic control monuments.

E3.4 Survey monuments and geodetic control monuments at or adjacent to the Site, not in the line of the proposed construction, that are damaged or disturbed by the Contractor shall be replaced or relocated by the City or its agent and all associated costs shall be paid for by the Contractor. An approximate estimate of the costs involved to restore a legal survey monument is \$1,000 per bar and \$3,000 per control monument. Contractors must ensure their landscaping and other subcontractors are aware of this clearance procedure and the potential restoration costs.

E3.5 Where possible, amounts owed to the City in accordance with the above will be deducted from any Protection of survey infrastructure payments to be made by the City to the Contractor.

E4. PEDESTRIAN SAFETY AND TRAFFIC MANAGEMENT

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

E4.2 Vehicle access must be maintained at all times on public right of way and on adjacent properties.

E5. STAKES AND MARKS

E5.1 Further to C6.26(h), the Contractor will mark, to the extent he determines to be necessary, the location, alignment and elevation of the Work by means of stakes or marks, for review and approval by Contract Administrator. The Contractor shall make the completed Works conform to the lines and marks thus approved and indicated.

- E5.2 The Contractor shall notify the Contract Administrator immediately of the disturbance of any such stakes or marks. The cost of correcting any errors arising out of neglect of the Contractor to so notify the Contract Administrator shall be borne entirely by the Contractor, as well as the cost of replacing any disturbed stakes or marks.
- E5.3 Before commencing Work, the Contractor shall satisfy himself as to the meaning and correctness of all stakes and marks and no claims shall be entertained by the City on account of any alleged inaccuracies. If any error is suspected in the Drawings, Specifications or the directions of the Contract Administrator, Work shall be discontinued until the errors are rectified, but no claims shall be made on account of any delay occasioned thereby.
- E5.4 The Contractor shall determine and provide all dimensions and elevations measured from the stakes or marks

E6. WATER USED BY CONTRACTOR

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

E7. SURFACE RESTORATIONS

- E7.1 The Contractor shall temporarily repair any Work commenced and not completed in the 2008 construction season to the satisfaction of the Contract Administrator. The Contractor shall maintain the temporary repairs in a safe condition as determined by the Contract Administrator until permanent repairs are completed. The Contractor shall bear all costs associated with temporary repairs and their maintenance.

E8. TEMPORARY RELOCATION OF AFFECTED STRUCTURES

- E8.1 The Contractor shall temporarily relocate any portable structure such as benches, waste receptacles, picnic benches, etc., which will interfere with the construction of the Work and are not identified as items to be relocated. The Contractor Administrator will identify the temporary locations for the portable structures. Following the completion of the applicable Work the Contractor shall replace the structures to the locations designated by the Contract

Administrator. These relocations shall be considered incidental to the associated Works and no separate measurement for payment will be made.

E9. TRUCK WEIGHT LIMITS

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

E10. PRE-CONSTRUCTION MEETING

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

E11. ACCESS

E11.1 All access is to be on the designated routes through the Site. These routes will be determined at the Pre-Construction Meeting.

E11.2 Access to the Site as required by the Contractor shall be provided and maintained by the Contractor at his own expense and approved by the Contract Administrator.

E11.3 The Contractor's operations shall be limited to the minimum area necessary for undertaking the Work and he shall be responsible for all damage resulting from his Work on private property. The Contractor shall take such measures as are necessary to ensure safe and convenient pedestrian ingress and egress in maintained to private properties while he is working near them. Any damage caused by the negligence of the Contractor or his Sub-Contractors to the adjacent Works or properties, shall be promptly repaired by him at his own expense, to the satisfaction of the Contract Administrator.

E11.4 All necessary precautions shall be exercised by the Contractor so as not to remove, disturb, or damage any existing trees, shrubs, sod, pavements, streets, roads, boulevards, poles, hydrants, water pipes, gas pipes, electrical wires, cables, conduits, sewers or other existing facilities and equipment at the Site of the Work. For all damage incurred in the performance of the Work (either directly or indirectly), the Contractor shall either replace and repair such damage, whichever may be deemed necessary in the opinion of, and acceptable to, the Contract Administrator and the cost of which shall be borne entirely by the Contractor.

E12. SITE CONDITION

E12.1 The Contractor shall examine the Site and make themselves familiar with the existing conditions (both above and below grade) and nature of Work to be done.

E12.2 Surface and sub-surface conditions shown on the Drawings and included herein are provided for general information and variations there from shall not affect the terms of the Contract.

E12.3 The Contractor shall set all necessary control lines, benchmarks, survey, elevation stakes and layout in accordance with the individual Site conditions and in consultation with the Contract Administrator.

E13. EXISTING UNDERGROUND SERVICES

E13.1 The Contractor's attention is drawn to the existing underground lines or services that may be located in the area of the Work.

E13.2 The Contractor shall take all necessary precautions when performing the Work to ensure that no damage is done to these existing services.

- E13.3 No responsibility will be assumed by the City for correctness or completeness of the Drawings, when provided, with respect to the existing utilities, pipes or other objects either underground or on the surface, shall not be liable for the incorrectness and inadequacy thereof. It shall be the responsibility of the Contractor to determine the location of all such utilities, pipes and other objects and to make good any damage done to them.
- E13.4 All costs in connection with this item including location of the existing service, repairs to any existing services damaged by the construction operation, etc. shall be included in the unit prices bid for supply and installation of the items included under this Contract.
- E13.5 The Contractor will be required to make his own arrangements in connection with the temporary use of lighting, power, gas, sewer, water or other utilities, and pay all costs in connection therewith.
- E13.6 All necessary permits, fees and other like expenses as well as the cost of temporary connections to existing facilities shall be arranged and paid for by the Contractor.

E14. DAMAGE TO STREETS AND STRUCTURES

- E14.1 The Contractor is to be advised of the following existing Site features to be retained and protected to the City of Winnipeg Standards:
- | | | |
|-------------|-----------------------------|-----------------|
| a) trees | e) light standards | i) hydro poles |
| b) curbs | f) fire hydrants | j) catch basins |
| c) sidewalk | g) street signs | k) curb inlets |
| d) sod | h) all underground services | l) fences |

E15. PERMITS, NOTICES, LICENCES, CERTIFICATIONS, LAWS, AND RULES

- E15.1 The Contractor shall give all necessary notices, obtain all necessary permits and pay all fees in order that the Work may be carried out. The Contractor shall submit all plans required by any inspection authority and obtain approval of same before proceeding with the Work, and pay any cost attached to the inspection of such plans.
- E15.2 The Site Development Permits (including lot grading and damage deposits) will be obtained and paid for by the City of Winnipeg Planning, Property and Development Department prior to commencement of construction. A copy of this permit will be provided to the Contractor upon award of Contract.
- E15.3 The Contractor shall comply with all laws, ordinances, rules, and regulations that would relate to the Works.

E16. EARTHWORK AND ROUGH GRADING

- E16.1 This specification is supplemental to CW 3110 and CW 3170. The Work of this section comprises the furnishing of all labour, equipment and materials required to complete the excavation and related Work including, but not necessarily confined to, the following:
- Excavation, removals, disposal, subgrade compaction and rough grading of the existing Site for the construction of concrete sidewalk paving, limestone pathways, unit paver plaza, planting beds, walls, swales, etc. to the design requirements noted on the Drawings, approved on Site by the Contract Administrator, less the appropriate surface finish allowance.
 - Stockpile suitable, approved material on Site for reuse (clean topsoil, clean earth fill and gravel fill). Remove and dispose of unsuitable material.
 - Earthwork and Grading of the existing Site to the design elevations shown on the Drawings, less the appropriate surface finish allowance.
 - Earthwork and Grading of the existing Site (cut and fill including compaction of subgrade and fill material) to ensure positive drainage in all paved areas, swales and adjacent sodded/seeded areas and planting beds.

- (e) Supply and Install imported fill in areas as required to create berms as shown on the drawings and ensure positive drainage.

Materials

E16.2 All fill materials shall conform to CW 3170.

Construction Methods

- E16.3 The Contractor shall construct the Site within the limits indicated to the design elevations and gradients noted on the Drawings, less the appropriate surface treatment depths specified and shall excavate, remove and dispose of all unsuitable materials of whatever nature encountered.
- E16.4 The Contractor shall construct all sub-grades in accordance with Specification CW 3110, including removal of unsuitable excavated material and surplus materials.
- E16.5 The Contractor shall restrict his activities strictly to within the limits of the Work, unless receiving prior written approval from the Contract Administrator. The Contractor shall take all precautions to prevent damage to traffic structures, pole lines, existing trees, Site services and adjacent property and he shall be liable for any damages occurring in the performance of this Work.
- E16.6 The Contractor shall examine the Site and make themselves familiar with the existing conditions and the nature of the Work to be done.
- E16.7 Prevent damage to surface or underground utility lines which are to remain. Make good any damage.
- E16.8 The Contractor shall excavate to the design grades shown less the appropriate allowance for surface treatment and shall excavate, remove and dispose of all unsuitable materials of whatever nature encountered.
- E16.9 Excavated or graded materials to be approved before use as fill for grading Work. Protect such approved material from contamination. Stockpile in approved locations on Site. Protection and stockpiling are incidental to unit prices bid for excavation, removals and rough grading.
- E16.10 The Contractor shall ensure that upon completion of the earthwork and grading operations the Site is left in a neat condition free from debris, etc. for approval by the Contract Administrator prior to placing base courses and clean fill.
- E16.11 Except for drainage swales, berms and embankments indicated, the design gradient for all other areas shall be considered to be straight grade between the design elevations shown. Changes in grade at swales, berms, embankments and field shall be gently contoured as directed by the Contract Administrator to provide future ease of grass mowing operation.
- E16.12 Construction to the new design grades shall be accomplished by the placement of clean fill in areas as indicated on the Drawings.
- E16.13 Areas of Fill
 - (a) Fill low areas in subgrade of paved areas with compacted gravel sub-base material compacted to 98% SPD. Cost incidental to unit price bid for paved areas.
 - (b) Fill low areas in sodded/planting bed areas with clean earth fill suitable for plant growth (from Site excavations or imported as required) free from roots, muskeg, organic or cohesive matter, building debris, waste materials, rubble, rubbish, frozen portions, soluble materials and rocks larger than 25mm (1") in diameter and capable of sustaining plant and seed growth. Compact to 95% S. P. D. in 150mm (6") lifts.
 - (c) Construct sodded berms, sloped areas using clean earth fill suitable for plant growth (from Site excavations or imported as required) free from roots, muskeg, organic or cohesive matter, building debris, waste materials, rubble, rubbish, frozen portions, soluble materials and rocks larger than 25mm (1") in diameter and capable of sustaining plant and seed growth. Compact to 95% S. P. D. in 150mm (6") lifts.

- (d) Prior to placing fill over existing ground, scarify surface to depth of 150mm. Maintain fill and existing surface at approximately the same moisture content to facilitate bonding.
- (e) No direct payment will be made for placing and grading of existing fill as all costs for this Work shall be included in the lump sum bid for excavation, removals and rough grading within the limit of the Work.

E16.14 Compaction shall include the use of sheep's foot or other suitable compaction equipment as approved by the Contract Administrator to achieve a minimum compaction of 98% Standard Proctor Density below all paved areas and rock areas, and 95% Standard Proctor Density in all other areas disturbed under this Contract.

E16.15 The Contractor shall construct the sub-grade surface to the following depths below the grades shown on the Drawings for each area:

- (a) Planting bed 250mm
- (b) Concrete sidewalk 277mm
- (c) Limestone path 178mm
- (d) Unit paver plaza 240mm

E16.16 The Contractor is advised that all excavations, removals, disposal, rough grading, compaction and related Work for construction of reinforced concrete sidewalk, crushed limestone pathway, unit paver plaza, and planting areas shall be incidental to the unit prices bid for each item as listed in the schedule of prices.

E16.17 Following earth moving, rough grading and compaction the Work areas shall be fine graded to provide a maximum deviation of 50mm in 10 metres from the design grade with no low areas to hold water. The finished surface of all disturbed areas shall be dragged and smoothed in such a manner that there are no loose soil particles greater than 50mm in maximum dimensions. Fine grading is incidental to the unit prices bid for each item listed in the schedule of prices.

E16.18 If required and at locations directed by the Contract Administrator, the Contractor shall excavate and remove unsuitable subgrade material and replace it with compacted granular material in accordance with Specification CW3110.

Method of Measurement

E16.19 Rough grading for sodded and seeded areas will be measured on an area basis. The area to be paid for shall be the total number of square metres that are excavated in accordance with this Specification as computed from measurements made by the Contract Administrator. No payment will be made for material removed outside of the limits of excavation as established by the Contract Administrator.

E16.20 Measurement of supply and install imported compacted clean earth fill and related Work will be on a cubic metre basis.

E16.21 Measurement of remove and dispose of unsuitable subgrade and replace with compacted granular in paved areas will be on a cubic meter basis.

E16.22 No measurement will be made for excavation, removal, disposal, compaction, rough grading and related Work for construction of concrete sidewalk, reinforced concrete paving, crushed limestone pathway, unit paver plaza and planting areas as this Work is incidental to the unit prices bid for each item as listed in the schedule of prices.

E16.23 No measurement will be made for stockpiling suitable topsoil, clean earth fill and granular base course as these items are incidental to this specification.

E16.24 No measurement will be made for filling holes/low areas left by excavation and removals operations as this item shall be incidental to this specification.

- E16.25 No measurement will be made for the excavation or compaction of the subgrade as this shall be incidental to this specification.
- E16.26 No measurement will be made for the removal and disposal or delivery/reinstallation of signage posts and signage as this shall be incidental to this specification.
- E16.27 No measurement will be made for disposing of surplus fill and unsuitable material as this shall be incidental to this specification.

Basis of Payment

- E16.28 Rough grading for sodded and seeded areas will be paid for at the contract unit price per square metre, measured as specified herein, which shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.
- E16.29 Supply and install compacted clean earth fill and related Work will be paid for on a cubic metre basis, measured as specified herein, which shall be payment in full for performing all operations herein described and for all other items incidental to the Work included in this specification.
- E16.30 Remove and dispose of unsuitable subgrade and replace with compacted granular will be paid for at the contract unit price per cubic meter, measured as specified herein, which shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.
- E16.31 No payment will be made for excavation, removal, disposal, compaction, rough grading and related Work for construction of concrete sidewalk, crushed limestone pathway, unit paver plaza and planting areas as this Work is incidental to the unit prices bid for each item as listed in the schedule of prices.
- E16.32 No payment will be made for stockpiling suitable topsoil, clean earth fill and granular base course as these items are incidental to this specification.
- E16.33 No payment will be made for filling holes/low areas left by excavation and removals operations as this item shall be incidental to this specification.
- E16.34 No payment will be made for the excavation or compaction of the subgrade as this shall be incidental to this specification.
- E16.35 No payment will be made for the removal and disposal or delivery/reinstallation of signage posts and signage as this shall be incidental to this specification.
- E16.36 No payment will be made for disposing of surplus fill and unsuitable material as this shall be incidental to this specification.

E17. CLEARING AND GRUBBING

- E17.1 The Drawings clearly document the trees that are to remain, and the trees and shrubs that are to be removed by the Contractor.
- E17.2 The Contractor is to note that the clearing and grubbing is to include the removal of all the individual trees and shrubs shown on the Drawings, as well as all the root masses associated with these trees and shrubs.
- E17.3 Construction methods to be in accordance with CW 3010

Method of Measurement and Basis of Payment

- E17.4 Clearing and Grubbing will be measured and paid for at the per tree unit price for "Clear and grub existing trees". The area to be paid for shall be the total number of square metres of

clearing and grubbing completed in accordance with this Specification and the Construction Drawings, as determined by the Contract Administrator

E18. MATCHING EXISTING GRADES

E18.1 Wherever the proposed paving, or sod meets existing pathway/pavement, curb edge, or property line, the Contractor shall construct the proposed element to an acceptable grade, as directed by the Contract Administrator, to ensure that proper drainage and accessibility are maintained.

E19. CSP CULVERT

Description

E19.1 Further to CW3610 CSP culverts are to be installed as shown on the Drawings and as specified herein.

Materials

E19.2 Culverts to be corrugated steel pipe in accordance with CW3610 at 300mm diameter at 6m length.

E19.3 Rock rip rap to be in accordance with CW3615.

E19.4 Grout to be in accordance with CW3615.

Construction Methods

E19.5 Following rough grading operation culverts are to be installed in the centre of swales centred on sidewalk locations as shown on the Drawings.

E19.6 Excavate subgrade as required for installation of granular levelling course. Ensure slope and invert elevation of culvert is consistent with swale grades.

E19.7 Set culvert on levelling course and backfill with material as per the Drawings.

E19.8 Following installation of concrete sidewalk complete rip rap work as shown on the drawings.

E19.9 Grout rocks to ensure smooth flow into and out of culvert and that minimal grout is visible.

E19.10 Clean area of all excess rip rap and grout.

E19.11 All riprap, levelling course, grout and other materials required to install the culverts are incidental to the unit price bid per culvert.

Method of Measurement

E19.12 CSP culverts shall be measured on a per item basis. The number to be paid for shall be the total number of units placed in accordance with this Specification and the Construction Drawings, as determined by the Contract Administrator.

Basis of Payment

E19.13 CSP culverts will be paid for at the contract unit price for "Supply and install CSP culvert" as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.

E20. CAST-IN-PLACE CONCRETE

Description

- E20.1 The Work of this section comprises the furnishing of all labour, equipment and materials required to complete the supply and installation of cast-in-place concrete wall cores, bases for site furniture and reinforced footings for concrete wall as shown on the drawings and as hereinafter specified, including, but not necessarily confined to the following:
- (a) Stamped Shop Drawings (stamped by registered structural engineer) for all footings. Submit for review and approval by the Contract Administrator prior to construction.
 - (b) Stamped Shop Drawings (stamped by registered structural engineer) for all concrete wall cores. Submit for review and approval by the Contract Administrator prior to construction.
 - (c) Excavation
 - (d) Granular Fill Work as required
 - (e) Supply, erection and removal of all formwork as required
 - (f) Design of concrete mixes
 - (g) Supply, placing and curing as follows:
 - (i) Concrete bases for waste receptacles
 - (ii) Concrete bases (reinforced concrete pile and pile cap) for feature rocks
 - (iii) Reinforced concrete footings for walls
 - (iv) Concrete core for walls: Contractor to specify either cast-in-place concrete wall core as per this specification or precast concrete wall core as per specification E.23
 - (h) Co-ordination of the installation of all other items to be installed in the Concrete Works by other trades.
 - (i) Detailing, supply and placing of reinforcing.
 - (j) Supply and installation of all other reinforcing and concrete required and not supplied by other sections.
 - (k) Finishing of all surfaces as specified.
 - (l) Supply and installation of all joint material in concrete Work.
 - (m) Supply and installation of all other reinforcing and concrete required and not supplied by other sections.
 - (n) Supply and Installation of compacted granular base courses not supplied by other sections.
 - (o) Clean-up.
- E20.2 The following items of Work are specified under other sections of the specifications and are not included in this section:
- (a) Supply of miscellaneous metal anchors, weld plates, bolts, inserts, etc.
 - (b) Graffiti coating. Refer to E25

Materials

- E20.3 All concrete Work shall be in accordance with CAN3-A23.1-Concrete Materials and Methods of Concrete Constructions. Proportion normal density concrete in accordance with CAN3-A23.1 to govern the following properties.
- E20.4 Concrete for cast-in-place bases for waste receptacles as follows:
Cement: Type 50
Max. Coarse Aggregate: 40mm
Min Compressive Strength at 28 days = 25 Mpa
Min. Cement Content: 310 kg/cu.m
Max. Water Cement Ratio: 0.45
Class of Exposure: S-2

Max. Slump: 90mm ± 20mm
Air Content: 4 to 7%
Flyash content: Max 15% of Cementitious Material

- E20.5 Concrete for cast-in-place walls as follows:
Cement: Type 50
30 MPa minimum at 28 days
Slump: 90mm
Entrained air category: 4 to 7%
Barkman Desert Buff colouring agent or approved equal in accordance with B6
- E20.6 Concrete for cast-in-place footings for walls as follows:
Cement: Type 50
30 MPa minimum at 28 days
Slump: 90mm
Entrained air category: 4 to 7%
- E20.7 Concrete for cast-in-place pile and pile cap for feature rock
Cement: Type 50
30 MPa minimum at 28 days
Slump: 90mm
Entrained air category: 4 to 7%
- E20.8 Fine aggregate shall consist of natural sand or manufactured sand and shall conform to all requirements of CAN3.A23.1.
- E20.9 Coarse aggregate shall consist of hard, strong, uncoated durable particles of crushed stone, gravel or approved combination thereof and shall be free from an excess of thin, elongated or soft pieces, frozen lumps, vegetable matter or other deleterious matter, and shall conform with all the requirements of CAN3-A23.1. Maximum size of coarse aggregate shall be 20 mm.
- E20.10 Water for concrete shall be clean and free from injurious amounts of oil, acid, alkali, salts, silt, organic matter or other deleterious matter. The quality of the water shall be equal to or better than that of potable water.
- E20.11 A non-detergent type of air-entraining admixture, supplied in liquid form, shall be metered into the mix. The total air in the placed concrete shall be 5% - 8%.
- E20.12 Reinforcing steel shall be grade 400 deformed bars or as noted on the Drawings. Detailing of reinforcing steel shall be in accordance with ACI 315. All bars which require bending shall be bent in shops.
- E20.13 All reinforcing steel shall be straight, clean and free from paint oil, mill scale, excess rust and any injurious defects which may affect its strength or bond.
- E20.14 Ends of reinforcing steel intended for bonding that are to be left exposed for some time shall be protected from injury, oils or moisture.
- E20.15 Curing compound shall be Sternson ritcure or approved equal in accordance with B6.
- E20.16 Bonding agent shall be Sternson ST 431 epoxy bonding agent.
- E20.17 Form coating shall be Sternson's Formseal or approved equal in accordance with B6.
- E20.18 Compacted granular base courses for all cast in place concrete Works shall be in accordance with City of Winnipeg Specifications.
- E20.19 Weld plates as supplied by precast concrete wall manufacturer to be installed as per manufacturer's directions.

- E20.20 The Contract Administrator may engage a fully qualified inspecting engineer and testing laboratory to:
- (a) Inspect the pile excavations to determine that they have been augured to the specified depth, are of the specified size, are clean and level, and meet the design criteria.
 - (b) Take test cylinders during concrete placing and carry out compression tests to determine whether concrete produced complies with these Specifications.
 - (c) Take compaction tests of compacted granular sub-base and sub-grade material.
 - (d) Submit reports to the Contract Administrator of all materials, concrete, and caisson tests and inspections.
 - (e) Three concrete test cylinders to be taken for pile cast. One cylinder from each group shall be tested at 7 days, one at 14 days and the remainder at 28 days. Sampling and testing procedures shall be according to CAN3-A23.1 latest edition.

E20.21 The Contractor is advised that no joints will be allowed in the slab except as directed on Site in conjunction with the Contract Administrator.

Placing of Concrete

- E20.22 Placing of concrete shall be in accordance with CAN3-A23.1
- E20.23 No concrete shall be placed until formwork, insulation, reinforcing steel, sleeves, hangers, anchors, inserts, etc., required to be built into the concrete have been inspected by the Contract Administrator.
- E20.24 Before placing concrete on bearing strata, notify the Contract Administrator so that he may make an inspection of the exposed bearing surface.
- E20.25 No concrete shall be placed in water or upon frozen surfaces.
- E20.26 Before placing any concrete, all debris shall be removed, forms shall be thoroughly oiled except where form oil will be detrimental to the finished surface. Equipment shall be cleaned of hardened concrete and foreign material.
- E20.27 All concrete shall be thoroughly vibrated during pouring. Precautions shall be taken to prevent separation or loss of ingredients while transporting the concrete. At no time shall concrete be allowed to a free fall of more than 1.5 m.
- E20.28 Conveying equipment shall be on temporary runways built over the floor system and runway supports shall not bear upon the fresh concrete.
- E20.29 Placement of concrete shall be carried out as a continuous operation until the placing of an individual section is completed. Concrete shall be carefully Worked around reinforcement and embedded fixtures, along surfaces and into corners of forms. Vibrators shall be used, and operated under experienced supervision; forms must be constructed to withstand their action.
- E20.30 The Contractor is advised that no joints will be allowed in the slab except as directed on Site in conjunction with the Contract Administrator.
- E20.31 Sandblast the top surface of the concrete core to remove the top ± 3 mm of the core and expose the top surface of the aggregate. Contractor to sandblast a small area for review and approval by the Contract Administrator.
- E20.32 Apply graffiti coating as per Professional® Water Sealant & Anti-Graffiti manufacturer's specifications. Refer to E25. Contractor to apply graffiti coating to a small area for review and approval by the Contract Administrator.

Construction Joints

E20.33 Location of construction joints to be determined on Site in conjunction with the Contract Administrator.

E20.34 All joint shall be complete with additional reinforcing as shown on the Drawings. No additional joints will be allowed in paving and slabs except as shown on the drawings.

E20.35 No joints will be allowed in the slab except as shown on the Drawings.

Cold Weather Concreting

E20.36 The protection of concrete and concreting operations during cold weather shall be in accordance with CSA A23.1

E20.37 Equipment for heating concrete after placement must be in operation before pouring is commenced. Provide sufficient thermometers to be placed in accordance with the Contract Administrator's instructions. Tarpaulins shall not be placed directly on the surface of slabs. Indirect light units only shall be used.

Curing and Protection

E20.38 Curing shall immediately following the finishing operation as in CSA A23.1, Section 18 and shall continue for a minimum of five (5) days at 10°C.

E20.39 When the outside temperature is less than 4°C. the temperature of the concrete shall be maintained between 10°C. and 21°C. for the required curing period.

E20.40 When heat required for curing is being removed, the maximum temperature change shall not exceed 2.5°C. per hour or 27°C., in any 24 hour period.

E20.41 Unless adequate protection is provided, no concrete shall be placed during rain, sleet or snow.

E20.42 Rainwater shall not be allowed to increase the mixing water nor damage the surface finish.

Clean up and Damage

E20.43 Immediately on completion of all piles and foundations Contractor shall remove from Site all equipment, timbers, shores, excavated material, unused concrete, rubbish, etc., caused by his operations, and leave the Site clean, level and ready for placing of grade beams.

E20.44 This Contractor shall be responsible for making good all areas damaged by his operations in connection with this Contract regardless of the limits of the Contract as shown on the Drawings.

Method of Measurement

E20.45 Concrete bases shall be measured on a per item basis. The number to be paid for shall be the total number of units placed in accordance with this Specification and the Construction Drawings, as determined by the Contract Administrator.

E20.46 Concrete footing shall be measured on a lineal metre basis. The length to be paid for shall be the total number of metres of footing placed in accordance with this Specification and the Construction Drawings, as determined by the Contract Administrator.

E20.47 Concrete wall shall be measured on a lineal meter basis. The length to be paid for shall be the total number of metres of wall placed in accordance with this Specification and the Construction Drawings, as determined by the Contract Administrator.

Basis of Payment

E20.48 Concrete bases will be paid for at the contract unit price for "Supply and install concrete bases" as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.

E20.49 Concrete footings will be paid for at the contract lineal metre price for “Supply and install concrete footings” as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.

E20.50 Concrete wall will be paid for at the contract lineal meter price for “Supply and install concrete core”, as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this specification.

E21. CONCRETE SIDEWALK

E21.1 The Contractor shall refer to City of Winnipeg Specification CW 3325 for the construction of all sidewalk paving on Site.

E21.2 Cement to be Medusa White or approved equal. Colour to be incidental to the unit price bid for concrete sidewalk.

E21.3 Concrete sidewalk to be 127mm thick and reinforced with welded wire mesh placed at the centre of the sidewalk depth with a minimum 50mm cover as indicated on the drawings. Welded wire mesh to be incidental to the unit price bid for concrete sidewalk.

E21.4 150mm depth compacted granular base course as indicated on the drawings to be incidental to the unit price bid for concrete sidewalk.

E21.5 All joints in sidewalk shall be sawcut as shown on the Drawings as directed by the Contract Administrator on Site.

E21.6 The sidewalk should be treated with a sealer if the temperature is higher than 31°C.

Finishing of Pavement

E21.7 All pavement shall be finished by a speciality concrete finishing subcontractor.

E21.8 The size of finishing crews shall be planned with due regard for the effects of concrete temperatures and atmospheric conditions on the rate of hardening of the concrete.

Method of Measurement

E21.9 Concrete Sidewalk Paving shall be measured on an area basis. The area to be paid for shall be the total number of square metres of Concrete Sidewalk placed in accordance with this Specification and the Construction Drawings, as determined by the Contract Administrator.

Basis of Payment

E21.10 Concrete Sidewalk Paving will be paid for at the contract unit price per square metre for “Supply and install white reinforced concrete sidewalk” as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification including supply and install topsoil and sod in areas disturbed by construction.

E22. INTERLOCKING PAVING STONES

Description

E22.1 Further to CW 3330 this Specification shall cover the:

- (a) supply and installation of interlocking paving stones (unit pavers),
- (b) supply and installation of sand setting bed,
- (c) supply and installation of polymeric joint sand
- (d) supply and installation of crushed limestone base.

E22.2 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 or and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

Materials

E22.3 Concrete interlocking paving stones (unit pavers) shall be:

- (a) Megalith paver, Desert Buff
- (b) Holland Paver, Autumn Brown
- (c) Roman paver, Desert Buff

supplied by Barkman Concrete, contact Wayne Wiebe, phone 667-3310, as shown on the Drawings.

E22.4 Sand:

- (a) Polymeric sand as joint filler, colour to match stone colour
- (b) Clean brick sand setting bed
- (c) Clean brick sand as joint filler

E22.5 Crushed limestone in accordance with CW3330.

E22.6 Geotextile to be Nilex NW120 12 oz. or equivalent.

Construction Methods

E22.7 Granular base, sand setting bed and unit pavers shall be installed in accordance with CW3330.

E22.8 Spread polymeric sand in joints and as per manufacturer's recommendations for megalith paver

E22.9 Replace at no extra cost all whole or cut stones marked as unacceptable.

E22.10 Remove cracked, chipped, broken or otherwise damaged paving materials from Site immediately.

E22.11 Upon completion, clean in accordance with manufacturer's recommendations.

Method of Measurement

E22.12 Supply and installation of interlocking paving stones will be measured on a surface area basis. The surface area to be paid for shall be the total number of square metres installed in accordance with the Drawings and Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

Basis of Payment

E22.13 Supply and installation of interlocking paving stones will be paid for at the Contract Unit Price per square metre for "Supply and install unit paver" measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E23. CRUSHED LIMESTONE PATHWAY

Description

E23.1 Further to CW 3410 and CW 3110 the Work of this section comprises the furnishing of all labour, equipment and materials incidental and required to complete the construction of limestone pathway as shown on the drawings and as hereinafter specified.

Related Work

E23.2 Earthwork and Site Grading

E23.3 Topsoil & Finish Grading

Materials

E23.4 Crushed granular material to meet the following requirements:

- (a) All Materials supplied under this Specification shall be of a type approved by the Contract Administrator and shall be subject to inspection and testing by the Contract Administrator;
- (b) Crushed limestone consisting of hard, durable, angular particles, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
- (c) Granular Levelling Course - Gradations to be within limits specified below when tested to ASTM C136-83 and have a smooth curve without sharp breaks when plotted on semi-log grading chart;

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

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

E23.5 If materials have been tested by an independent testing laboratory within previous 2 months and have successfully passed tests equal to requirements of this specification, submit test certificates from testing laboratory showing suitability of materials for this project.

E23.6 Geotextile as per City of Winnipeg Specifications.

Construction methods

E23.7 Subgrade inspection and installation of Geotextile

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

E23.8 Placement and compaction of granular and crushed limestone

- (a) Place crushed granular base course material to a minimum compacted thickness of 150mm. Compact to 100% standard proctor density.
- (b) Place crushed granular levelling course material to a minimum compacted thickness of 50mm. Compact to 100% standard proctor density.
- (c) Crushed Limestone fines to a minimum compacted thickness of 50mm as finishing course. Compact to 98% standard proctor density.

- (d) Add crushed granular material as required to replace unsuitable subgrade material. Place in layers not exceeding 200mm thickness and compact to 98% standard proctor.
- (e) Compact subgrade to min. 98% standard proctor density.
- (f) Finished surface to be within 12mm of specified grade, but not uniformly high or low. Ensure positive drainage on paved areas and in adjacent sodded areas.

Field Quality Control

E23.9 Inspection and testing of crushed stone paving will be carried out by designated testing laboratory, cost of testing to be paid for by cash allowance as directed by the Contract Administrator.

Acceptance

E23.10 Any Work not satisfactory as specified herein and as determined by the Contract Administrator for initial testing, shall be rectified by the Contractor. This process of inspection and correction shall continue until the Contract Administrator is satisfied that the Work is 100% complete and as per the construction drawings and specifications. All additional tests for failed or unacceptable results will be borne solely by the Contractor.

Method of Measurement

E23.11 Crushed Limestone Pathway shall be measured on a square metre basis. The area to be paid for shall be the total number of square metres of limestone pathway placed in accordance with this Specification and the Construction Drawings, as determined by the Contract Administrator.

Basis of Payment

E23.12 Crushed Limestone Pathway will be paid for at the contract unit price per square metre for "Supply and install limestone pathway" measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification

E24. PRECAST CONCRETE WALLS

Description

E24.1 This specification covers the supply and installation of precast concrete walls including the supply of following custom precast concrete products:

- (a) Precast concrete core
- (b) Precast concrete cap

Including all mounting and or installation hardware, adhesives and mortar.

E24.2 The following items of Work are specified under other sections of the specifications and are not included in this section:

- (a) Graffiti coating. Refer to E25.

E24.3 Contractor to specify either precast concrete wall core as per this specification or cast-in-place concrete wall core as per specification E20

Related Work

E24.4 Earthwork and Grading – E16

E24.5 Veneer Stone – E25

E24.6 Cast-In-Place Concrete – E20

Delivery and Storage

- E24.7 Store units in a protected location, immediately upon arrival on the Site.
- E24.8 Remove from Site any units which have been damaged during transportation and replace.

Quality of Assurance

- E24.9 Precast concrete elements to be fabricated and erected by manufacturing plant certified by Canadian Standards Association in appropriate category according to CSA A251. Precast concrete manufacturer to be certified in accordance with CSA's certification procedures for precast concrete plants prior to submitting tender and to specifically verify as part of tender that plant is currently certified in appropriate category. Only precast elements fabricated in such certified plants to be acceptable to owner, and plant certification to be maintained for duration of fabrication, erection until warranty expires.

Tolerances

- E24.10 Tolerance of precast elements to CAN3-A23.4, Section 10.

Shop Drawings

- E24.11 Submit shop drawings in accordance with CAN3-A23.4 and CAN3-A23.3. Include the following items:
 - E24.12 Design calculations for items designated by manufacturer.
 - E24.13 Methods of handling and erection.
 - E24.14 Openings, sleeves, inserts, related reinforcement and installation hardware.
 - E24.15 Each drawing submitted shall bear stamp and signature of qualified professional engineer registered or licensed in province of Manitoba, Canada.

Products

- E24.16 Custom precast concrete wall panels including all galvanized installation hardware, Desert Buff colour, to be supplied by:
 - Barkman Concrete Ltd.
 - 909 Gateway Road
 - Winnipeg, Manitoba, R3K 3L1
 - Contact: Wayne Wiebe
 - T (204) 667-3310
- E24.17 Custom precast concrete wall cap, Desert Buff colour to be supplied by:
 - Barkman Concrete Ltd.
 - 909 Gateway Road
 - Winnipeg, Manitoba, R3K 3L1
 - Contact: Wayne Wiebe
 - T (204) 667-3310
- E24.18 Adhesive shall be Sika Anchor Fix 3 to be supplied by:
 - Johnson Construction Materials
 - Contact: Mitch Tessier
 - T (204) 233-4107
- E24.19 Mortar to CSA A179-94
 - (a) Colour: to be selected for exterior grouts to match wall colour.
 - (b) Use aggregate passing 1.18mm sieve where 6mm thick joints are indicated.
 - (c) Use same brands of materials and source of aggregate for entire project to ensure uniformity of colouration and other mix characteristics.
 - (d) Mortar for exterior masonry above grade:
 - (i) Loadbearing: Type S based on Property specifications.

- (ii) Non-loadbearing: Type S based on Property Proportion specifications.

Installation

- E24.20 Construct footings as per Drawings and section E19. Ensure top is level and clean.
- E24.21 Dry fit all wall panels prior to installation to ensure exact fit.
- E24.22 Set wall panels in place. Ensure wall sections are plumb and in line with adjacent panels. Secure with adhesive.
- E24.23 Weld all plates set in concrete footing to weld plates in wall panels.
- E24.24 Backfill around walls as shown on the Drawings.
- E24.25 Sandblast the top surface of the concrete core to remove the top ± 3 mm of the core and expose the top surface of the aggregate. Contractor to sandblast a small area for review and approval by the Contract Administrator.
- E24.26 Install veneer stone as per E25.
- E24.27 Apply graffiti coating as per Professional® Water Sealant & Anti-Graffiti manufacturer's specifications. Refer to E25. Contractor to apply graffiti coating to a small area for review and approval by the Contract Administrator.
- E24.28 Prepare area for signage by others
- E24.29 Mortar all wall caps in place.

Method of Measurement

- E24.30 Supply and installation of precast concrete core will be measured on linear meter basis. The number of metres to be paid for will be the total number supplied and placed in accordance with this Specification and accepted by the Contract Administrator, as measured by the Contract Administrator.
- E24.31 Supply and installation of precast concrete cap will be measured on linear meter basis. The number of metres to be paid for will be the total number supplied and placed in accordance with this Specification and accepted by the Contract Administrator, as measured by the Contract Administrator.

Basis of Payment

- E24.32 Supply and installation of precast concrete core shall be paid for at the unit price bid per metre for "Supply and install precast concrete core", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E24.33 Supply and installation of precast concrete cap shall be paid for at the unit price bid per metre for "Supply and install precast concrete cap", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E25. VENEER STONE

Description

- E25.1 This specification covers the supply and installation of veneer stone on concrete core and graffiti coating on veneer stone and exposed sections of concrete wall.

Materials

- E25.2 Veneer stone to be Northland stone as supplied by Barkman Concrete as follows:
- (a) 70% of stone to be Old Country Limestone Sandewood
 - (b) 30% of stone to be Split Field Michigan Split.
- E25.3 Graffiti Coating as supplied by
Alsip's Industrial Products Ltd.
1 Cole Ave
Winnipeg, MB R2L 1J3
Phone: (204) 667-3330
Fax: (204) 668-7581
Contact: Jason Alsip
- E25.4 Mortar to be type S or type N mortar specified "Veneer Mortar" and "Joint Grout". Colour to be selected to match veneer stone colour.

Construction Methods

- E25.5 Application over masonry and concrete:
- (a) The veneer stones to be adhered directly to the clean, unpainted concrete with a nominal 12 – 19mm thick bed of mortar.
 - (b) Painted or waterproofed surfaces should be prepared by sandblasting and cleaning.
 - (c) Before the mortar begins to harden, use a notched trowel to "scratch" the mortar surface.
 - (d) Coat the back of each unit with sufficient mortar and press it firmly into place until the excess material spreads from the sides of the unit.
 - (e) Once all the units are in place, fill a grout bag with joint grout and fill each joint by extruding the grout from the bag. The joints can then be tooled, brushed, or raked.
- E25.6 Do not install in freezing temperatures. Cover and protect if temperatures drop to near freezing.
- E25.7 Install corner units first. Corner units will be used for corners and the top of wall corners. The proper mix of these units to produce the desired affect must be confirmed on site with Contract Administrator and manufacturer prior to construction to determine acceptable exemplar.
- E25.8 Placement of veneer stone must be staggered to avoid joints lining up and forming an unbroken line, and to avoid forming a plus (+) sign where four units might otherwise meet at the same point. Random appearance is desired.
- E25.9 While installing veneer stone select subsequent individual units from multiple pallets in order to get well-blended appearance.
- E25.10 Veneer stones should be trimmed to allow for best fit. Trim in such away that trimmed edge in located where grout fill will cover the cut or trim line.
- E25.11 Joint widths should be 6mm.
- E25.12 Grout technique on the vertical will be a standard indented grout finish. Approximately 12mm below stone's face.
- E25.13 Grout lines on the top of the wall must be worked to slope down to the sides so that there will be no standing water on horizontal surfaces.
- E25.14 Apply graffiti coating as per Professional® Water Sealant & Anti-Graffiti manufacturer's specifications. Contractor to apply graffiti coating to a small area for review and approval by the Contract Administrator.

Method of Measurement

E25.15 Supply and installation of veneer stone will be measured on a square meter basis. The area to be paid for will be the total number of square meters supplied and installed in accordance with this Specification and accepted by the Contract Administrator, as measured by the Contract Administrator.

E25.16 No measurement will be made for Water Sealant and Anti-Graffiti Coating as it shall be considered incidental to this specification.

Basis of Payment

E25.17 Supply and installation of veneer stone shall be paid for at the contract unit price per square metre for "Supply and install veneer stone", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E25.18 No payment will be made for Water Sealant and Anti-Graffiti Coating as it shall be considered incidental to this specification.

E26. SITE FURNITURE

Description

E26.1 This specification covers the supply and installation of:

- (a) Waste Receptacles – Ornamental flat iron slat c/w inserts painted black including concrete base.
- (b) Rock Benches

General

E26.2 Store units in a protected location, immediately upon arrival on the Site.

E26.3 Remove from Site any units which have been damaged during transportation and replace.

Products

E26.4 Rock Benches as supplied by:
Mariash Construction Ltd.
Box 425, Stony Mountain,
Manitoba, Canada,
R0C 3A0

E26.5 Waste Receptacles as supplied by:
City of Winnipeg
Public Works, Equipment and Material Services,
102 1155 Pacific Ave.
Winnipeg, Manitoba R3E 1G6
Ph: (204) 986-5504 Fax: (204) 783-1248
Attn. Foreman

E26.6 Concrete Bases specified under Section E26 of this Specification.

Installation

E26.7 Site Furniture shall be installed in locations as indicated on the Construction Drawings.

E26.8 Waste Receptacles to be installed as per the drawings.

E26.9 Rock benches to be installed on compacted granular base as per the drawings.

E26.10 Protect and maintain Site furnishings, including accessories, until acceptance of project Work.

E26.11 Immediately remove from Site, damaged furnishing and accessories. Replace, repair, re-finish, or otherwise make good to approval of Contract Administrator.

Method of Measurement

E26.12 Supply and installation of rock benches will be measured on a unit basis. The number of each item to be paid for will be the total number supplied and placed in accordance with this Specification and accepted by the Contract Administrator, as measured by the Contract Administrator.

E26.13 Supply and installation of waste receptacles will be measured on a unit basis. The number of each item to be paid for will be the total number supplied and placed in accordance with this Specification and accepted by the Contract Administrator, as measured by the Contract Administrator.

Basis of Payment

E26.14 Supply and installation of rock benches shall be at the per unit price bid for "Supply and install rock benches", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E26.15 Supply and installation of waste receptacle shall be at the per unit price bid for "Supply and install waste receptacles", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E27. PLANTING BED PREPARATION

Description

E27.1 The following list generally describes the scope of this Section:

- (a) Cultivate subsoil
- (b) Supply and install planting soil mixture in planting beds
- (c) Supply and install wood chip mulch

E27.2 Submit to the Contract Administrator samples of the following materials:

- (a) Planting Soil Mixture: 1 kg
- (b) Wood chip mulch: 500g

Delivery and Storage

E27.3 Deliver and store fertilizer in waterproof bags showing weight, analysis and name of manufacturer.

Materials

E27.4 Planting Soil: For planting of native plugs, mix imported topsoil with 20% peatmoss loose by volume, and 5% sand loose by volume. Incorporate bonemeal into planting soil at rate of 5 lbs /cu.yd. of soil mixture. Planting soil items to be comprised as follows:

E27.5 Peatmoss: horticultural grade Class "A" decomposed plant material, fairly elastic and homogeneous. Free of decomposed colloidal residue, weed, sulphur and iron. To have pH value of 5.9 to 7.0, 60% organic matter by weight, moisture content not exceeding 15% and water absorption capacity of not less than 300% by weight on oven dry basis.

E27.6 Bonemeal: shall be raw bonemeal, finely ground with a minimum analysis of 3% nitrogen and 20% phosphoric acid.

- E27.7 Imported topsoil: natural, fertile, agricultural soil typical of locality, capable of sustaining vigorous plant growth, from well drained Site that is free of flooding, not in frozen or muddy condition, not less than 6% organic matter to a maximum 25% organic matter by volume, and pH value of 5.9 to 7.0. Free from subsoil, slag or clay, stones, lumps, live plants and their roots, sticks, crabgrass, couchgrass, noxious weeds and foreign matter.
- E27.8 Sand: hard, granular natural beach sand, washed free of impurities, chemical or organic matter.
- E27.9 Fertilizer: commercial type with 50% of the elements derived from organic sources.
- E27.10 Wood chip mulch: varying in size from 15-25 mm and 5-20 mm thick, from coniferous trees.

Construction Methods

- E27.11 Remove debris, broken roots, branches, stones in excess of 50mm diameter and other deleterious materials. Remove subsoil that has been contaminated with oil, gasoline or calcium chloride. Dispose of removed materials as directed.
- E27.12 Excavate bed to a depth of 250mm as per details on the Drawings.
- E27.13 Cultivate entire area of bed bottom to 100mm depth.
- E27.14 Do not spread planting soil mixture until Contract Administrator has inspected sub-grade.
- E27.15 Spread planting soil mixture with adequate moisture in uniform layers during dry weather over approved, dry, unfrozen sub-grade, where planting is indicated.
- E27.16 Bring planting soil mixture up to 50 mm finished grade in beds.
- E27.17 Remove stones, roots, grass, weeds, construction materials, debris and foreign non-organic objects from soil mixture.
- E27.18 Spread fertilizer at manufacturer's recommended rate of application. Mix fertilizer thoroughly into upper 50mm of planting soil.
- E27.19 Fine grade entire planting soil area to 50mm below level of pathway or adjacent sodded area. Eliminate rough spots.
- E27.20 Compact planting soil to leave surface smooth, uniform, firm against deep foot printing, with a fine, loose texture. Tolerance: plus or minus 15mm of design grade.
- E27.21 Supply and install 50mm wood chip mulch in beds.

Method of Measurement

- E27.22 Supply and install planting bed shall be measured on an area basis. The area to be paid for shall be the total number of square metres in place in accordance with this Specification acceptable to the Contract Administrator, as computed from measurements made by the Contract Administrator.

Basis of Payment

- E27.23 Payment for supply and install planting bed will be made at the Contract unit price per square metre for 'supply and install planting bed' which price shall be payment in full for supply of all materials and performing all operations herein described and for all other items incidental to the Work included in this Specification.

E28. PLANT MATERIAL

Description

- E28.1 The following list generally describes the scope of this section:

- (a) Supply and planting of native plug plants.
- (b) Maintenance to Total Performance.
- (c) Maintenance for 1 year from date of Total Performance

General

- E28.2 Obtain approval of plant material at source.
- E28.3 Notify Contract Administrator of source of material at least 7 days in advance of shipment. No Work under this Special Provision is to proceed without approval.
- E28.4 Acceptance of plant material at source does not prevent rejection at Site prior to or after planting operations.
- E28.5 Cover plant foliage with tarpaulin, and protect bare roots by means of dampened straw, peatmoss, sawdust or other acceptable material to prevent loss of moisture during transit and storage.

Materials

- E28.6 Water should be potable and free of minerals, which may be detrimental to plant growth.
- E28.7 Wild flowers and native grasses to be plug plants by Prairie Originals. Proposed plant list to be submitted to Contract Administrator 5 days after Award of Contract.

Construction Methods

- E28.8 Layout planting area with plugs for review and approval by Contract Administrator prior to planting.
- E28.9 Plant only under conditions that are conducive to health and physical conditions of plants.
- E28.10 Remove water, which enters excavations prior to planting. Ensure source of water is not ground water.
- E28.11 Place plant material to depth equal to depth they were originally growing in nursery.
- E28.12 Tamp planting soil around root system in layers of 75mm eliminating air voids. Frozen or saturated planting soil is unacceptable.
- E28.13 Following planting install bark nugget mulch as per E27.
- E28.14 Planting can only be done from April to July 31 to ensure rooting as per grower's recommendation. Therefore, planting in this contract must be completed in early May 2009

Maintenance

- E28.15 After completion of planting operation to the satisfaction of the Contract Administrator, the Contractor shall be responsible for the maintenance of the plant material until date of Total Performance and for 1 year from date of Total Performance.
- E28.16 Replace any dead or damaged plant material during the maintenance period, including replacement of vandalized material.
- E28.17 Water sufficiently to maintain optimum growing conditions. Ensure adequate moisture in root zone at freeze-up.
- E28.18 The Contractor shall provide all necessary personnel for the ongoing maintenance operations.

- E28.19 Personnel should have at least one year of experience in landscape maintenance and should be under the direction of a foreman, in all cases, with not less than five years of experience with similar maintenance operations.

Maintenance Methods

- E28.20 Planting beds shall be watered twice weekly, or as required to maintain good growing conditions. Do not over water plants.
- E28.21 To determine the need for watering, make a soil test weekly with a one-inch auger. Take a test sample to a minimum depth of 600 mm. The soil shall contain enough moisture to hold together when compressed in the hand, but not be muddy.
- E28.22 Fertilize planting area 1 week prior to end of maintenance. Fertilizer to be based on soil analysis. Analysis to be obtained by Contractor at his own cost.

Method of Measurement

- E28.23 Supply and installation of plant material will be measured on a unit basis. The number of units to be paid shall be the total number of each type and size of units supplied and installed in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator.

Basis of Payment

- E28.24 Supply and installation of plant material will be paid for at the Contract Unit Price per unit type and size specified for "Supply and install plant material", measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.

E29. SODDING

- E29.1 All Work to be to CW 3510.

Method of Measurement

- E29.2 Sodding will be measured on an area basis. The area to be paid for shall be the total number of square metres sodded and maintained in accordance with this Specification and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

Basis of Payment

- E29.3 Sodding will be paid for at the Contract Unit Price per square metre for 'Supply and Install Sod', measured as specified herein, which price shall be payment in full for completing all operations herein described and all other items incidental to the Work included in this Specification.

E30. FEATURE AND LANDSCAPE ROCKS

General

- E30.1 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 hereinafter specified.

Scope of Work

- E30.2 The following list generally describes the scope of this Section:

- (a) Supply and install feature rocks – 1.7m ht. rock (5.6 ton), 2.0m ht. rock (6.6 ton) and 2.6m ht. rock (8 ton)
- (b) Supply and install large landscape rocks (2-3 tons each)
- (c) Supply and install landscape rocks (450mm-900mm each)

Reference Standards

- E30.3 City of Winnipeg Specification CW3110 – Sub-Grade, Sub-Base and Base Course Construction
- E30.4 City of Winnipeg Specification CW3130 – Supply and Installation of Geotextile Fabrics

Product

- E30.5 Stone as supplied by
Mariash Construction Ltd.
Box 425, Stony Mountain,
Manitoba, Canada,
R0C 3A0

Construction Methods

- E30.6 Grade existing soil, eliminating uneven areas and low spots, ensuring positive drainage with minimal disturbance of existing trees. Remove debris, broken roots, branches, stones in excess of 50mm diameter and other deleterious materials. Remove subsoil that has been contaminated with oil, gasoline or calcium chloride. Dispose of removed materials as off site.
- E30.7 Install feature rock on concrete pile and pile cap. Refer to detail by structural engineer on L3.1 for the installation of concrete pile and pile cap and E20: Cast-In-Place Concrete
- E30.8 Install large landscape rock on granular base and geotextile fabric as per locations and details shown on the drawings.
- E30.9 Install landscape rocks on granular fill and 10mm poly as per locations and details shown on the drawings.

Method of Measurement

- E30.10 Supply and installation of feature rocks will be measured on a unit basis. The number of units to be paid shall be the total number of each type and size of units supplied and installed in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator.
- E30.11 Supply and installation of large landscape rocks will be measured on a unit basis. The number of units to be paid shall be the total number of each type and size of units supplied and installed in accordance with the Drawings and Specifications and as measured and accepted by the Contract Administrator.
- E30.12 Supply and installation of landscape rocks (450mm – 900mm) will be measured on a cubic meter basis. The cubic meter to be paid for shall be the total number of cubic metres in place in accordance with this Specification acceptable to the Contract Administrator, as computed from measurements made by the Contract Administrator.
- E30.13 No measurement will be made for excavation, removal, disposal, rough grading, supply and installation of granular base courses, geotextile fabric and compaction as these items are incidental to this specification.

Basis of Payment

- E30.14 Supply and installation of feature rock will be paid for at the Contract Unit Price per unit type and size specified for "Supply and install feature rock", measured as specified herein, which

price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.

- E30.15 Supply and installation of large landscape rock will be paid for at the Contract Unit Price per unit type and size specified for "Supply and install large landscape rock", measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.
- E30.16 Supply and installation of landscape rock (450mm – 900mm) will be paid for at the Contract Unit Price per cubic meter for "Supply and install landscape rock", measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.
- E30.17 No payment will be made for excavation, removal, disposal, rough grading, supply and installation of granular base courses, geotextile fabric and compaction as these items are incidental to this specification.