



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 594-2013

PEGUIS PAVILION POND RENOVATIONS AND LANDSCAPING

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 PEGUIS PAVILION POND RENOVATIONS AND LANDSCAPING

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, August 7, 2014.

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

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

B3. SITE INVESTIGATION

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

B4. ENQUIRIES

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

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

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

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

B6. ADDENDA

- B6.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.
- B6.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B6.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>
- B6.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B6.2.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B7. SUBSTITUTES

- B7.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B7.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B7.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B7.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B7.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B7.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.

- B7.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.
- B7.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B7.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.
- B7.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B7.10 Notwithstanding B7.2 to B7.9, and in accordance with B8.7, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B15.1(a).

B8. BID COMPONENTS

- B8.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;
- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B8.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B8.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg, MB R3B 1J1
- B8.5.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B8.6 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.
- B8.7 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B15.1(a).
- B8.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to 204 949-1178.

B8.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.

B8.8.2 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B9. BID

B9.1 The Bidder shall complete Form A: Bid, making all required entries.

B9.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

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

B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.

B9.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

B9.4 Paragraph 10 of Form A: Bid shall be signed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;
- (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers;
- (d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B9.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B9.4.2 All signatures shall be original.

B9.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B10. PRICES

B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B10.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B10.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B11. QUALIFICATION

B11.1 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.

B11.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

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

B11.3 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);

B11.4 Further to B11.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractors has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:

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

B11.5 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.

B11.6 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.

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

B12.1 Bids will not be opened publicly.

B12.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be

available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>

- B12.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>
- 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 9 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 for the time period specified in Paragraph 9 of Form A: Bid.

B14. WITHDRAWAL OF BIDS

- B14.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- 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 10 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 10 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/her Bid after the Submission Deadline but before his/her 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.

B15. EVALUATION OF BIDS

- B15.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity or acceptable deviation there from (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B11 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B7.

- 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/her Bid or in other information required to be submitted, that he/she is responsible and qualified.
- B15.4 Further to B15.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B15.4.1 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 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B15.
- B16.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.
- B16.4 Notwithstanding C4, the City may issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.
- B16.5 The Contract, as defined in C1.1, in its entirety shall be deemed to be incorporated in and to form a part of the Purchase Order notwithstanding that it is not necessarily attached to or accompany said Purchase Order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Construction* (Revision 2006 12 15) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm
- 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 Renovations to the Pond and surrounding banks at Peguis Pavilion, Kildonan Park. Renovations include:

- (a) Placement of clay pond liner as per drawings;
- (b) Placement of salvaged limestone pond edge as per drawings;
- (c) Construction of pond by-pass system
- (d) Construction of pond water control structures;
- (e) Supply and installation of electrical service for aeration system and receptacles.
- (f) Construction of groundwater well and pond pump system;
- (g) Construction of concrete retaining walls and curbing;
- (h) Supply and installation of compacted granular with geotextile
- (i) Supply and installation of Allan Block retaining wall as per drawings;
- (j) Installation of salvaged concrete pavers on compacted granular;
- (k) Construction of steel framed timber bridge;
- (l) Excavation of sediment under vehicular bridge; and
- (m) Finished grading of existing slopes;

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is KGS Goup, represented by:

Dave Anderson
865 Waverley Street
Winnipeg Manitoba
R3T 5P4

Telephone No. (204) 896-1209

Email danderson@kgsgroup.com

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

D3.3 Bids Submissions must be submitted to the address in B8.5.

D4. CONTRACTOR'S SUPERVISOR

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

D5. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

- D5.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.
- D5.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.
- D5.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;
- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
 - (b) the Contract, all deliverables produced or developed; and
 - (c) any statement of fact or opinion regarding any aspect of the Contract.
- D5.4 A Contractor who violates any provision of D5 may be determined to be in breach of Contract.

D6. NOTICES

- D6.1 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.
- D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3, D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the facsimile number identified in D3.1.
- D6.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following facsimile number:
- The City of Winnipeg
Chief Financial Officer
Facsimile No.: 204 949-1174
- D6.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following facsimile number:
- The City of Winnipeg
Legal Services Department
Attn: Director of Legal Services
Facsimile No.: 204 947-9155

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

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

D8. SAFE WORK PLAN

- D8.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D8.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgmt/Safety/default.stm>

D9. INSURANCE

- D9.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
 - (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence;
 - (c) all risks installation floater, carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.
- D9.2 Deductibles shall be borne by the Contractor.
- D9.3 The Contractor shall provide the Contract Administrator with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than seven (7) Calendar Days from notification of the award of Contract by Purchase Order.
- D9.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D10. PERFORMANCE SECURITY

- D10.1 If the Contract Price exceeds twenty-five thousand dollars (\$25,000.00), the Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:
- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or
 - (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
 - (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.
- 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 The Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of Purchase Order and prior to the commencement of any Work on the Site.

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 seven (7) Calendar Days from notification of the award of Contract.

SCHEDULE OF WORK

D12. COMMENCEMENT

D12.1 The Contractor shall not commence any Work until he/she is in receipt of a Purchase Order from the Award Authority authorizing the commencement of the Work.

D12.2 The Contractor shall not commence any Work on the Site until:

(a) the Contract Administrator has confirmed receipt and approval of:

- (i) evidence of authority to carry on business specified in D7;
- (ii) evidence of the workers compensation coverage specified in C6.15;
- (iii) the Safe Work Plan specified in D8;
- (iv) evidence of the insurance specified in D9;
- (v) the performance security specified in D10; and
- (vi) the 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 Purchase Order.

D12.4 The City intends to award this Contract by August 22, 2014

D12.4.1 If the actual date of award is later than the intended date, the dates specified for Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D13. SUBSTANTIAL PERFORMANCE

D13.1 The Contractor shall achieve Substantial Performance within sixty (60) consecutive Working Days of the commencement of the Work as specified in D12.

D13.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.

D13.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D14. TOTAL PERFORMANCE

D14.1 The Contractor shall achieve Total Performance by November 15, 2014.

D14.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D14.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D15. LIQUIDATED DAMAGES

D15.1 If the Contractor fails to achieve Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City five hundreds dollars (\$500) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.

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

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

CONTROL OF WORK

D16. JOB MEETINGS

D16.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

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

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

D17.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

D18. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

D18.1 Further to B11.4, the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require updated proof of compliance, as set out in B11.4.

MEASUREMENT AND PAYMENT

D19. PAYMENT

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

WARRANTY

D20. WARRANTY

D20.1 Warranty is as stated in C13.

FORM H1: PERFORMANCE BOND
(See D10)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

BID OPPORTUNITY NO. 594-2013

PEGUIS PAVILION POND RENOVATIONS AND LANDSCAPING

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

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

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

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

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

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

_____ day of _____, 20____.

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

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

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 594-2013
PEGUIS PAVILION POND RENOVATIONS AND LANDSCAPING

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

This credit is subject to the Uniform Customs and Practice for Documentary Credit (2007 Revision), International Chamber of Commerce Publication Number 600.

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Specification No.</u>	<u>Specification Title</u>
	Table of Contents
CW 1110-R1	General Instructions
CW 1120-R1	Existing Services, Utilities and Structures
CW 1130-R2	Site Requirements
CW 3110-R18	Sub-Grade, Sub-Base and Base Course Construction
CW 3120-R4	Installation of Sub-Drains
CW 3130-R4	Supply and Installation of Geotextile Fabrics
CW 3310-R15	Portland Cement Concrete Pavement Works
CW 3170-R3	Earthwork and Grading
CW 3330-R5	Installation of Interlocking Pavement Stones
CW 3510-R9	Sodding
CW 3540-R5	Topsoil and Finish Grading for Establishment of Turf Areas
CW 3615-R3	Riprap

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
Cover-R0	Cover Sheet
L01-R0	Existing Conditions
L02-R0	Layout & Surfacing Plan
L03-R0	Grading
L04-R0	Planting
L05-R0	Details
L06-R0	Details & TYP. Sections
L07-R0	Ped. Bridge Details
G01-R0	Site Plan - Earthwork
G02-R0	Sections - Earthwork
S01-R0	Structural Rehabilitation & New Construction Bridge & Curb Details
S02-R0	Structural Rehabilitation & New Construction Sections
S03-R0	Structural Rehabilitation & New Construction Details
E01-R0	Electrical Scope of Work and Specifications and Single Line Diagram
E02-R0	Electrical Site Plan
E03-R0	Electrical Details
C01-R0	Ground Water Supply System and Subdrain Sump Detail
M01-R0	Mechanical Plans, Sections, & Details

E2. SOILS INVESTIGATION REPORT

- E2.1 A soils report is available by contacting Mark Jamieson, KGS Group, 204-896-1209.

E3. PRE-CONSTRUCTION MEETING

E3.1 The Contractor shall not begin the Work under this Contract until a pre-construction meeting has been held between representatives of the General Contractor, the City of Winnipeg, and the Contract Administrator.

E4. SITE ACCESS

E4.1 All access to be on the designated routes through the Site. These routes will be determined at the pre-construction meeting.

E4.2 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.

E4.3 The Contractor's operation 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. Damage to areas beyond the marked routes shall be repaired by and at the expense of the Contractor to the satisfaction of the Contract Administrator.

E5. PEDESTRIAN SAFETY AND TRAFFIC MANAGEMENT

E5.1 Further to CW 1130, the Contractor shall take such measures as are necessary to ensure safe and convenient pedestrian ingress and egress is maintained to the Peguis Pavilion, and along public access roadways and pedestrian routes adjacent to the Site. 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.

E5.2 Ambulance/ Emergency vehicle access must be maintained at all times.

E6. SITE CONDITION

E6.1 The Contractor and applicable Sub-Contractors shall examine the Site and make themselves familiar with the existing conditions (both above and below grade) and nature of Work to be done.

E6.2 No responsibility will be assumed by the City for correctness or completeness of the Drawings, when provided, with respect to the existing utilities, pipes or other objects either underground or on the surface; the City shall not be liable for the incorrectness and inadequacy thereof. 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. 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.

E6.3 The Contract Administrator or representative shall set all necessary control lines, benchmarks, survey, elevation stakes and layout in accordance with the individual Site conditions.

E7. PROTECTION OF EXISTING TREES

E7.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities:

- (a) All trees will have a 3m radius protective zone calculated from the circumference at the base of the trunk which will remain free of digging, trenching, grade changes, stock piling of materials and soil compaction, unless otherwise agreed to by the City and Contract Administrator throughout the duration of the Contract. Protective fencing around these areas is required.
- (b) Trees within and immediately adjacent to proposed construction and those identified to be at risk by the Contract Administrator are to be strapped with 25 x 100 x 2400 mm wood

planks, or suitably protected as approved by the Contract Administrator. Do not use nails or other fasteners that penetrate the tree trunk. The width and length of strapping may be reduced to suit the tree being protected as approved by the Contract Administrator.

- (c) Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches) where 1 inch diameter equals 1 foot measured from the outside edge of the trunk of the tree at 6 inches above grade. 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 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.
- (d) 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.
- (e) 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.
- (f) Repair, replace and maintain tree protection materials during construction until the Project completion.
- (g) Carefully remove safety fencing and strapping material without harming the tree as soon as the construction and restoration Work is complete.

E7.2 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.

E7.3 No separate measurement or payment will be made for the protection of existing structures, trees and property.

E8. EXISTING SERVICES AND UTILITIES

E8.1 This Specification shall amend and supplement CW 1120.

E8.2 Other than required to be done by the Contractor under the Work of this Contract, all necessary precautions shall be exercised by the Contractor so as not to remove, disturb, or damage any existing plant material, pavements, streets, roads, boulevards, light standards, hydro poles, fences, fire hydrants, culverts, 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. The Contractor shall also indemnify and save harmless the City from all claims made directly or indirectly against it in respect to any such damage.

E8.3 The Contractor's attention is drawn to the existing underground lines or services that may be located in the area of the Work.

E8.4 The Contractor shall take all necessary precautions when performing the Work to ensure that no damage is done to these existing services.

E8.5 No responsibility will be assumed by the City for correctness or completeness of the Drawings, when provided, with respect to the existing utilities, pipes or other objects either underground or on the surface; the City shall not be liable for the incorrectness and inadequacy thereof. It shall be the responsibility of the Contractor to determine the location of all such utilities, pipes and other objects and to make good any damage done to them.

- E8.6 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.
- E8.7 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.
- E8.8 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.

E9. PERMITS, NOTICES, LICENSES, CERTIFICATES, LAWS AND RULES

- E9.1 Further to C6.12, the Contractor shall give all necessary notices, obtain all necessary permits and pay all fees in order that the Work may be carried out. The Contractor shall submit all plans required by any inspection authority and obtain approval of same before proceeding with the Work, and pay any cost attached to the inspection of such plans.
- E9.2 The Contractor shall comply with all laws, ordinances, rules and regulations that would relate to the Work.
- E9.3 All notices, consents, approvals, statements, authorizations, documents or other communications to the City shall be submitted to the Contract Administrator.
- E9.4 All Work shall be performed in compliance with the Manitoba Workplace Health and Safety Act.
- E9.5 All Work shall be performed in compliance with the Manitoba Workplace Health and Safety Fall Protection guidelines.
- E9.6 The Contractor and Sub-Contractors must be fully aware of all Work involving hazardous materials. All Work must be performed in compliance with the Manitoba Department of Labour Workplace Health and Safety Guidelines and all other applicable codes. The Contractor is responsible for the immediate notification to the Contract Administrator of his/her encountering of suspected hazardous material during their course of Work.

E10. PROTECTION OF SURVEY INFRASTRUCTURE

- E10.1 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.
- E10.2 Further to C:6.26 (g), at least 72 hours prior to the commencement of the On-Site Work the Contractor shall contact the City of Winnipeg, Geomatics Services Branch at 204-918-1360 (8:00 am to 4:00 pm Monday to Friday excluding holidays) to obtain underground clearance. Geomatics Services will locate and mark all known outline survey monuments and geodetic control monuments and confirm the physical condition of those monuments upon completion of construction, at no cost to the Contractor.
- E10.3 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.
- E10.4 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 sub-Contractors are aware of this clearance procedure and the potential restoration costs.

E10.5 Where possible, amounts owed to the City in accordance with the above will be deducted from any payments to be made by the City to the Contractor.

E11. STAKES AND MARKS

E11.1 Further to E6.3, the Contract Administrator will mark, to the extent he / she determines to be necessary, the location, alignment and elevation of the Work by means of stakes or marks. The Contractor shall make the completed Works conform to the lines and marks provided.

E11.2 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.

E11.3 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.

E11.4 The Contractor shall determine and provide all dimensions and elevations measured from the stakes or marks.

E12. SITE ENCLOSURES

E12.1 Temporary Site enclosures, as determined necessary at the pre-construction meeting, shall be erected and maintained as required for the duration of the construction period.

E12.2 Site enclosures shall be considered incidental to the Contract Work.

E13. MOBILIZATION AND DEMOBILIZATION

E13.1 Measurement and Payment

E13.1.1 Mobilization and Demobilization will be measured on a lump sum basis and paid for at the Contract Lump Sum Price for "Mobilization and Demobilization". The work to be paid for shall be the total work performed in accordance with the specification and as required to complete all the work under the project, and shall include but not be limited to site access as necessary, site work roads, site drainage, care of surface water and seepage, all temporary erosion control measures, equipment mobilization and demobilization, general site cleanup and restoration, as accepted by the Contract Administrator. The payment for mobilization and demobilization during the construction will be determined based on the percentage of work completed, as determined by the Contract Administrator.

E14. TESTING ALLOWANCE

E14.1 The testing allowance will be utilized to cover items such as testing of the various fill materials (e.g. Proctor testing on the clay fill / liner, LA Abrasion testing of gabion backfill, etc.) as well and on-site material testing for items such as in-situ compaction density testing and concrete quality. All testing required for the project and the use of the testing allowance will be directed by the Contract Administrator.

E15. EXCAVATION AND ROUGH GRADING

E15.1 Description

E15.1.1 This Specification shall amend and supplement CW 3110 "Sub-grade, Sub-base and Base Course Construction" and CW 3170 "Earthwork and Grading".

- E15.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as herein specified.
- E15.1.3 Work shall include, but not necessarily be confined to, the following:
- (a) Excavation and Rough Grading of the Site to the design requirements noted on the Drawings and the Specifications, approved on Site by the Contract Administrator, to depths as required for each surface;
 - (b) Disposal of all unsuitable or surplus material in a legal manner;
- E15.2 Materials
- E15.2.1 All imported and salvaged fill materials shall conform to CW 3170.
- E15.3 Construction Methods
- E15.3.1 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 or surplus materials of whatever nature encountered.
- E15.3.2 Disposal of material shall be understood to mean the hauling of all unsuitable material from the Site and the unloading in a legal manner and in accordance with Section 3.4 of CW 1130 "Site Requirements".
- E15.3.3 The Contractor shall construct all sub-grades in accordance with Specification CW 3110. Excavation will be performed as per Section 4.3 of CW 3110.
- E15.3.4 The re-use of surplus material on Site may reduce the quantity of imported gravel and clean earth fill required. The Contractor shall use existing Site material prior to delivering new material to the Site. No separate payment will be made for placing and grading of surplus material as all costs for this Work is incidental to the lump sum price bid for Excavation and Rough Grading.
- E15.3.5 Surplus materials to be approved before use as fill for grading Work. Protect such approved material from contamination and stockpile in approved locations. Protection and stockpiling are incidental to unit price bid for Excavation and Rough Grading.
- E15.3.6 Prevent damage to surface or underground utility lines which are to remain. Make good any damage.
- E15.3.7 Do not disturb soil within branch spread of trees to remain, unless otherwise agreed to by the City and the Contract Administrator.
- E15.3.8 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.
- E15.3.9 Areas to Fill
- (a) Fill low and excavated areas to be sodded or seeded with excavated clay material 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 90% S.P.D. in 150mm (6") lifts.
 - (b) 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.
- E15.3.10 The Contractor shall construct subgrade in accordance with Specification CW 3110. This 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 90% Standard Proctor Density in all other areas disturbed under this Contract unless otherwise indicated.

- E15.3.11 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 that 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.
- E15.3.12 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 CW 3110.

E15.4 Measurement and Payment

- E15.4.1 The recompaction of the clay liner will be measured on an area basis and paid for at the Contract Unit Price for "Clay Liner Recompaction". The area to be paid for will be the total number of square metres of clay liner recompacted in accordance with the Purchaser's Drawings and the technical specifications, as measured and accepted by the Contract Administrator. The prices shall be full payment for supplying of all labour, equipment and materials, and performing all operations necessary including excavation, scarification, moisture conditioning, backfill, compaction, and all other items incidental to the Work for "Clay Liner Recompaction". The area for payment will exclude recompaction of the clay liner associated with the areas around the concrete walls, but include the areas within the foundations of the Gabions and Drain Lines.
- E15.4.2 The island fill will be measured on a volume basis and paid for at the Contract Unit Price for "Island Fill". The volume to be paid for will be the total number of cubic metres of the island fill in accordance with the Purchaser's Drawings and the technical specifications, as measured and accepted by the Contract Administrator. The prices shall be full payment for supplying of all labour, equipment and materials, and performing all operations necessary including excavation, scarification, moisture conditioning, backfill, compaction, and all other items incidental to the Work for "Island Fill".

E16. CONCRETE FORMWORK

- E16.1 General
- E16.2 Related Work
- E16.2.1 Cast in Place concrete and Standard City of Winnipeg related specifications
- E16.3 Reference Standards
- E16.3.1 All concrete formwork is to be done in accordance with CAN/CSA-A23.1 and CAN/CSA-A23.2
- E16.4 Materials
- E16.5 Formwork lumber: plywood and wood formwork materials conform to CAN-086.
- E16.5.1 Plywood: Douglas Fir to CSA 0121, concrete form grade, square edge, 19mm thick.
- E16.6 Form ties: removal or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25mm dia in concrete surface
- E16.7 Formwork release agent: chemically active release agents containing compounds that react with free lime present in concrete to provide water insoluble soaps, preventing concrete from sticking to forms.
- E16.8 Construction Methods

E16.9 Erection

- E16.9.1 Verify lines, levels and dimensions before proceeding with formwork and ensure dimensions agree with drawings.
- E16.9.2 Construct forms to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CAN/CSA-A23.
- E16.9.3 Align form joints and make watertight. Keep form joints to minimum.
- E16.9.4 Clean formwork in accordance with CAN/CSA-A23:1. Only permitted if in good condition

E16.10 Measurement and Payment

- E16.11 The supply and installation of Concrete Formwork be will be considered incidental to the supply and placement of Cast-in-Place Concrete, acceptably installed in accordance with this Specification and accepted by the Contract Administrator, and no separate payment will be made.

E17. CAST IN PLACE CONCRETE

E17.1 General

E17.2 Description

- (a) The work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all things necessary for and incidental to the satisfactory performance and completion of all work as hereinafter specified.

E17.3 Construction Methods

E17.3.1 Workmanship

- (a) Do all concrete Work in accordance with CAN/CSA-A23.1. All testing of concrete shall be done in accordance with CAN/CSA-A23.2. Obtain Contract Administrator's approval before placing concrete. Provide 3 Calendar Days notice prior to placing of concrete.
- (b) Pumping of concrete is permitted only after approval of equipment and mix.
- (c) Ensure reinforcing bars and reinforcement and inserts are not disturbed during concrete placement.
- (d) Do not place load upon new concrete until authorized by Contract Administrator as per City of Winnipeg Standards.

E17.3.2 Joint Fillers

- (a) Furnish filler for each joint in a single piece for depth and width required for joint, unless otherwise authorized by Contract Administrator. When more than one piece is required for a joint, fasten abutting ends and hold securely by stapling or other positive fastening.

E17.3.3 Cleanup and Damage

- (a) Immediately on completion of concrete Work the Contractor shall remove from Site all equipment, timbers, shores, excavated materials, unused concrete, rubbish etc. caused by operations, and leave the Site clean, level and ready for other Works.

E17.3.4 The Contractor shall be responsible for making good all areas damaged by operations.

E17.4 Method of Measurement

- E17.4.1 The Concrete Wall Type 1 (Drawing S01 Section A) will be measured on a length basis and paid for at the Contract Unit Price for "Wall Type 1". The length to be paid for shall be the total number of lineal metres of Concrete Wall Type 1 constructed in accordance with

the Purchaser's Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, recompacted clay liner within the foundation area, clay and granular backfill, weeping tile, compaction, geotextile, concrete, reinforcing steel, forming, waterstops and all other items incidental to the Work for "Wall Type 1" and accepted by the Contract Administrator.

E17.4.2 The Concrete Wall Type 2 (Drawing S01, Section B) will be measured on a length basis and paid for at the Contract Unit Price for "Wall Type 2". The length to be paid for shall be the total number of lineal metres of Concrete Wall Type 2 constructed in accordance with the Purchaser's Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, recompacted clay liner within the foundation area, clay and granular backfill, weeping tile, compaction, geotextile, concrete, reinforcing steel, forming, waterstops and all other items incidental to the Work for "Wall Type 2" and accepted by the Contract Administrator.

E17.4.3 The Concrete Retaining Wall (Drawing S01, Section D) will be measured on a length basis and paid for at the Contract Unit Price for "Retaining Wall". The length to be paid for shall be the total number of lineal metres of Concrete Retaining Wall constructed in accordance with the Purchaser's Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, clay and granular backfill, weeping tile, compaction, geotextile, concrete, reinforcing steel, forming and all other items incidental to the Work for "Retaining Wall" and accepted by the Contract Administrator.

E17.4.4 The downstream channel cleanout is a lump sum bid item. No measurement will be made for this work. The downstream channel cleanout will be paid for at the Contract Lump Sum Prices for "Downstream Channel Cleanout". The amount to be paid for shall be for completed work, which price shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, backfill, geotextile, disposal and all other items incidental to the Work for "Downstream Channel Cleanout" and accepted by the Contract Administrator.

E17.4.5 The vehicle structure is a lump sum bid item. No measurement will be made for this work. The vehicle bridge structure and related work will be paid for at the Contract Lump Sum Prices for "Vehicle Bridge Structure". The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, backfill, concrete, reinforcing steel, forming, waterstops and all other items incidental to the Work for "Vehicle Bridge Structure" and accepted by the Contract Administrator.

E17.4.6 The walk structure is a lump sum bid item. No measurement will be made for this work. The walk bridge structure and related work will be paid for at the Contract Lump Sum Prices for "Walk Bridge Structure". The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, backfill, concrete, reinforcing steel, forming, waterstops and all other items incidental to the Work for "Walk Bridge Structure" and accepted by the Contract Administrator.

E18. INSTALLATION OF MODULAR RETAINING WALL

E18.1 General

E18.1.1 Description

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

- (b) Work shall include, but not necessarily confined to the supply and installation of Allan Block retaining wall system to the extents and grades as shown on the drawing;

E18.2 Materials

E18.2.1 Allan Block Retaining Wall System – AB Collection. Colour – Rocky Mountain Blend

E18.2.2 Adhesive as per manufacturer's specifications.

E18.2.3 PVC drain pipe as per manufacturer's specifications

E18.3 Construction

E18.3.1 All construction and installation methods shall be in accordance with supplier recommendations, as accepted by the Contract Administrator.

E18.3.2 Retaining Wall to be installed level and true to correct elevations and location, as directed the Contract Administrator. The Contractor shall confirm proposed extents of retaining wall with Contract Administrator prior to installation.

E18.3.3 Contractor to saw cut the raised front lip off top course of retaining wall blocks only. Contractor to ensure smooth, level surface for pavers.

E18.4 Measurement and Payment

E18.4.1 The interlocking modular retaining wall will be measured on a length basis and paid for at the Contract Unit Price for "Allan Block Wall". The amount to be paid for shall be the total number of linear metres of Allan Block Wall installed in accordance with the Purchaser's Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, backfill, compaction, granular base, drainage pipe and all other items incidental to the Work for "Allan Block Wall" and accepted by the Contract Administrator.

E19. RIP RAP

E19.1 General

E19.1.1 Description

- (a) This Specification shall amend and supplement CW 3110 "Sub-grade, Sub-base and Base Course Construction" and CW 3170 "Earthwork and Grading".
- (b) The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as herein specified.

E19.2 Materials

E19.2.1 General

- (a) All materials shall conform to CW 3110, CW 3130, CW3615 and this Specification. Where the two do not agree, this Specification shall take precedence. 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.

E19.2.2 Boulder Rip Rap

- (a) Boulder Riprap shall be clean granite fieldstone of random profile with no cracks or splits. Boulder Riprap shall be light in colour, with diameters ranging from 350mm to 450mm and shall conform to CW 3615 as per Random Stone Riprap. No limestone is permitted.

E19.2.3 Crushed Stone

- (a) Crushed Stone shall be 12mm crushed granite

E19.2.4 Geotextile Fabric

- (a) Geotextile fabric shall be Terrafix 270R or approved equal.

E19.3 Construction

E19.3.1 Bed for Riprap

- (a) The bed for the riprap shall be cleared and trimmed to the lines as shown on the drawings or as stated in the field by the Contract Administrator, prior to the placing of any riprap. No geotextile fabric or riprap shall be placed until the bed has been approved. No riprap shall be unloaded and placed until the boulder material has been approved.

E19.3.2 Installation of Geotextile Fabric

- (a) The geotextile fabric shall be installed in width as shown on drawings, in accordance with the manufacturer's recommended procedure. The geotextile shall be installed with the long dimension parallel to any slope and shall be laid smooth and free of tension, stress, folds, wrinkles or creases.
- (b) Joints in the geotextile fabric shall be overlapped not less than 0.5 metres.
- (c) Securing pins with washers shall be inserted through the fabric at intervals not greater than 1.5 metres along a line 100 mm from both the lowest and highest exterior edge of the geotextile fabric.
- (d) The supply and installation of the geotextile fabric pins shall be incidental to the cost of the installation of Boulder Riprap.

E19.3.3 Placement of Boulder Riprap

- (a) Boulder riprap shall be pushed or rolled into place in such a manner that the larger boulders are uniformly distributed around the planting first and smaller boulders serve to fill the places between the larger boulders. Protect plantings at all time. Sufficient handwork and work/equipment shall be utilized to ensure gaps between boulders are filled to the satisfaction of the Contract Administrator.
- (b) Work to be coordinated with installation of paving and planting.

E19.3.4 Crushed Stone Backfill

- (a) Crushed stone shall be used to infill gaps between boulders so that no geotextile is visible after completion.

E19.4 Measurement and Payment

- E19.4.1 The riprap will be measured on a weight basis and paid for at the Contract Unit Price for "Riprap". The weight to be paid for will be the total number of tonnes of riprap supplied and placed in accordance with the Purchaser's Drawings and the technical specifications, as measured and accepted by the Contract Administrator. The prices shall be full payment for supplying of all labour, equipment and materials, including crushed stone backfill and performing all operations necessary including backfill, compaction, and all other items incidental to the Work for "Riprap". The amount for payment will exclude riprap associated with the well discharge, but include that within the downstream channel. The Contractor shall provide the weigh tickets to the Contract Administrator for the material supplied to the site at the time of delivery. No payment will be made for any weigh tickets that are not supplied at the time of delivery.

E20. INTERLOCKING PAVERS AND GRANULAR SURFACING

E20.1 General

E20.1.1 Description

- (a) The Specification shall supplement Standard Construction Specification CW 3330 – Supply and Installation of Interlocking Pavement Stones.
- (b) Work shall include, but not necessarily confined to the following:
 - (i) Supply and installation of new, concrete pavers to the extents and grades as shown on the drawings;
 - (ii) Installation of salvaged, concrete pavers to the extents and grades as shown on the drawings.
 - (iii) Supply and installation of compacted granular to the extents and grades as shown on the drawings;

E20.2 Materials

E20.2.1 Salvaged Concrete Pavers.

- (a) Salvaged Pavers to match existing pathways where they are being reinstalled.

E20.2.2 Pavers

- (a) Concrete Pavers shall be Barkman Holland Stone, colour: Double Charcoal.

E20.2.3 Filler Sand in accordance with CW 3330.

E20.2.4 Bedding Sand in accordance with CW 3330 and CW 3310.

E20.2.5 Crushed Limestone Base in accordance with CW 3110.

E20.2.6 Geotextile Fabric in accordance with CW 3130.

E20.3 Construction

E20.3.1 As per Standard Construction Specification CW 3330

E20.3.2 Geotextile Fabric in accordance with CW 3130.

E20.4 Measurement and Payment

E20.4.1 Salvaged Concrete Pavers on a granular base will be measured on an area basis and paid for at the Contract Unit Price for “Salvaged Concrete Paver on Granular Base”. The area to be paid for shall be the total number of square metres of Salvaged Concrete Pavers installed in accordance with the Purchaser’s Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, granular base, infill sand and all other items incidental to the Work for “Salvaged Concrete Paver on Granular Base” and accepted by the Contract Administrator.

E20.4.2 Concrete Pavers on a granular base will be measured on an area basis and paid for at the Contract Unit Price for “Concrete Paver on Granular Base (Lookout Area)”. The area to be paid for shall be the total number of square metres of Concrete Pavers installed in accordance with the Purchaser’s Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, granular base, bedding and infill sand and all other items incidental to the Work for “Concrete Paver on Granular Base” and accepted by the Contract Administrator.

E20.4.3 Compacted Granular c/w Geotextile will be measured on an area basis and paid for at the Contract Unit Price for “Compacted Granular c/w Geotextile”. The area to be paid for shall be the total number of square metres of Compacted Granular c/w Geotextile installed in accordance with the Purchaser’s Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, compaction, granular base, geotextile and all other items incidental to the Work for “Compacted Granular c/w Geotextile” and accepted by the Contract Administrator.

E21. WOODEN BRIDGE

E21.1 General

E21.1.1 Description

- (a) Work shall include, but not necessarily confined to construction of a wooden bridge at which is to be integrated into the concrete walk bridge structure
- (b) The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as herein specified.

E21.1.2 Related Sections

- (a) E17 - Cast in Place Concrete
- (b) E20 - Interlocking Pavers

E21.1.3 Shop Drawings

- (a) Shop drawings are required for wooden bridge.
- (b) Drawings showing all sizes and dimensions, position and spacing of reinforcing, openings, connection details, layout plan, finishes, all inserts, and all other relevant information showing immediate adjacent materials for proper coordination shall be submitted to the Contract Administrator for review prior to fabrication. Five copies of all shall be provided.
- (c) Contractor to submit shop drawings for review and approval prior to any fabrication.

E21.1.4 Samples

- (a) Submit a 600mm length x 140mm wide size sample of stained wood used for wooden bridge for Contract Administrator's approval. Deliver samples prepaid to Contract Administrator's business address and Notify Contract Administrator in writing, at time of submission of deviations in samples from requirements of Contract Documents

E21.2 Materials

E21.2.1 Pressure Treated Lumber

- (a) Use timber graded and stamped in accordance with applicable grading rules and standards of associations or agencies approved to grade lumber by Canadian Lumber Standards Accreditation Board of CSA.
- (b) All materials to be new and free from defects impairing strength, durability and appearance of the best commercial quality for the purpose specified.
- (c) Structural timber and lumber shall be ACQ (Alkaline Copper Quaternary) Pressure Treated.
- (d) Sizes as shown on drawings. Material shall be hand picked, number 2 grade or better; straight, free of cracks, splits and waness, colour green.
- (e) All bolts, nuts, washers, nails, screws and rebar spikes shall be hot-dip galvanized to CAN/CSA G164 and/or approved for use with ACQ lumber.

E21.2.2 Pedra Wood

- (a) Sizes as shown on drawings. Material shall be hand picked, straight, free of cracks, splits and waness, Adhesive to be exterior grade 100% waterproof glue.
- (b) Finish to be 2-coats of BEHR PREMIUM® Semi-Transparent Weatherproofing All-In-One Wood Stain & Sealer. Colour: Barn Red. Apply as per manufacturer's specifications.
- (c) Sample of finish to be provided to Contract Administrator for approval prior to completion of bench finishes

(d) Metal Work

- (i) Metal for bridge to be as dimensioned on the drawings. All metal to be galvanized, sanded and powder coated. Colour to be black.
- (ii) Standard angles and plates, unless otherwise specified, all steel for new members shall conform to the requirements of CSA Standard CAN/CSA-G40.21-M87, Grade 300W.
- (iii) Welding consumables for all processes shall be certified by the manufacturer as complying with the requirements of the following specifications:
- (iv) Manual, shielded metal arc-welding (SMAW):
- (v) All electrodes for manual, shielded metal arc welding shall conform to CSA Standard CSA W48.1-M1991 classification number E7018 for single pass tack welds and CSA W48.3-M1982, classification numbers E8016-B1, E8016-C3, E8018-B1 or E8018-C3 for final welds.
- (vi) Hardware: All bolts, nuts, washers, inserts, etc., as required for a complete installation shall be stainless steel, Type 316 unless noted otherwise.
- (vii) Equipment: All equipment shall be of a type approved by the Contract Administrator and shall be kept in good working order

E21.3 Construction Methods

E21.3.1 General

- (a) All Work is to be located and installed in accordance with the drawings using approved non-rusting, vandal resistant fasteners to ensure solid, durable, finished Work suitable for the purpose intended. Fasteners and assembly hardware shall be incidental to the Work.
- (b) Wooden bridge to be installed level and true to correct elevations and location, as directed the Contract Administrator.
- (c) Wooden bridge to be carefully handled so that no part will be bent, broken or otherwise damaged. Hammering, which will injure or distort fixture, is prohibited.
- (d) Galvanized washers and/or neoprene spacers to be used as required to set bridge level and flush with adjacent paving.
- (e) Except as otherwise specified herein, steelwork should be fabricated in accordance with the latest A.W.S. Specification D1.A and subsequent revisions. Fabrication shall be in accordance with the latest AASHTO specification and all subsequent revisions.
- (f) No fabrication or welding of steelwork shall commence until permission to do so has been received from the Contract Administrator.
- (g) The repair of any members damaged during fabrication shall be approved by the Contract Administrator.
- (h) Shipping: Structural members shall be loaded in such a manner that they can be transported and unloaded at their destination without being excessively stressed, deformed or otherwise damaged.
- (i) Hot-Dip Galvanizing: All items under this specification, except stainless steel fasteners shall be hot-dip galvanized. Hot-dip galvanizing of complete items shall be done after fabrication in accordance with CSA Standard G164-M1981 to a retention of 600 gm/m² unless noted otherwise. All metal surfaces to be galvanized shall be thoroughly cleaned of rust, rust scale, mill scale, dirt and other contaminants by commercial sand, grit or shot blasting and/or pickling prior to galvanizing. Heavy deposits of oil and grease shall be removed with solvents prior to blasting or pickling.
- (j) Handling and Storage of Materials: Material to be stored shall be placed on skids above the ground. It shall be kept clean and properly drained. Long members shall be supported on skids placed near enough to prevent injury from deflection.
- (k) Welding to Galvanized Metal: All Galv-alloy repairs shall be made flush with adjacent metal.

- (l) Drill and grout in Stainless Steel bolts in concrete base in pattern shown to a depth of 100mm.
- (m) Bridge anchor plates to be set over exposed anchor bolts and secured with stainless steel nuts.

E21.4 Measurement and Payment

- E21.4.1 The timber walk bridge is a lump sum bid item. No measurement will be made for this work. The timber walk bridge and related work will be paid for at the Contract Lump Sum Prices for "Timber Walk Bridge". The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including all fabrication, metalwork, metal structure, fasteners, and finishes and all other items incidental to the Work for "Timber Walk Bridge" and accepted by the Contract Administrator.

E22. PLACEMENT OF SALVAGED LIMESTONE POND EDGE

E22.1 General

E22.1.1 Description

- (a) The work consists of placing salvaged limestone pond edge as shown on the drawings.
- (b) The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as herein specified.

E22.2 Material

- E22.2.1 Salvaged Limestone Blocks – sizes vary, clean and free from cracks and splitting. Minimum block size to be 600mm x 600mm x 1000mm.

- (a) The Contractor shall mark limestone blocks to be reused and notify Contract Administrator to approve. The Contract Administrator has the right to reject the use of any boulder deemed unacceptable.

- E22.2.2 Geotextile Fabric in accordance with CW 3130.

E22.3 Construction Methods

- E22.3.1 Geotextile Fabric in accordance with CW 3130.

E22.4 Measurement and Payment

- E22.4.1 The placement of salvaged limestone blocks will be measured on a length basis and paid for at the Contract Unit Price for "Placement of Salvaged Limestone Blocks". The amount to be paid for shall be the total number of linear metres of limestone blocks installed in accordance with the Purchaser's Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, backfill, compaction, granular base, drainage pipe and all other items incidental to the Work for "Placement of Salvaged Limestone Blocks" and accepted by the Contract Administrator.

E23. MECHANICAL, WATER SUPPLY, DRAINS AND LINES

E23.1 General

E23.2 Description

- (a) This Specification shall include, but limited to, the supply and installation of a groundwater well system, water supply lines, pond aerators, drain lines, and pump fill lines.

E23.3 Measurement and Payment

- E23.3.1 The groundwater well system is a lump sum bid item. No measurement will be made for this work. The well system and related work will be paid for at the Contract Lump Sum Prices for "Groundwater Well System". The prices shall be full payment for supplying all labour, equipment and materials supply and install all equipment specified on the drawing 13-0109-001 M01 including well pump, indoor piping, valves, discharge header, water meter, pressure tank, pressure transmitter. The payment for "Groundwater Well System" will exclude the supply and installation of Groundwater Supply Line, Pond Fill Line, well drilling and installation.
- E23.3.2 The drain line will be measured on a length basis and paid for at the Contract Unit Price for "Drain Line". The length to be paid for shall be the total number of lineal metres of Drain Line supplied and installed in accordance with the Purchaser's Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including excavation, subgrade preparation, backfill, compaction, supply and installation of drain line and all other items incidental to the Work for "Drain Line" and accepted by the Contract Administrator.
- E23.3.3 The groundwater supply line will be measured on a length basis and paid for at the Contract Unit Price for "Groundwater Supply Line". The length to be paid for shall be the total number of lineal metres of Groundwater Supply Line supplied and installed in accordance with the Purchaser's Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including directional drilling, supply and installation of Groundwater Supply Line and all other items incidental to the Work for "Groundwater Supply Line" and accepted by the Contract Administrator.
- E23.3.4 The pond fill line will be measured on a length basis and paid for at the Contract Unit Price for "Pond Fill Line". The length to be paid for shall be the total number of lineal metres of Pond Fill Line supplied and installed in accordance with the Purchaser's Drawings. The prices shall be full payment for supplying all labour, equipment and materials, and performing all operations including directional drilling, supply and installation of Pond Fill Line and header to the pond, erosion protection at the discharge including excavation, compacted clay backfill, riprap, geotextile and bentonite/s and fill, and all other items incidental to the Work for "Pond Fill Line" and accepted by the Contract Administrator.
- E23.3.5 The weeping tile sump is a lump sum bid item. No measurement will be made for this work. The sump and related work will be paid for at the Contract Lump Sum Prices for "Weeping Tile Sump". The amount to be paid for shall be for completed work, which price shall be full payment for supplying all labour, equipment and materials including sump pump, manholes, 150mm diameter HDPE pipe connecting the sump to the weeping tile network, including necessary fittings, and 38mm diameter HDPE sump discharge line from the sump to the downstream side of the outlet control structure, and performing all operations including excavation, backfill, compaction, and all other items incidental to the Work for the weeping tile sump and accepted by the Contract Administrator.

E24. POWER DISTRIBUTION AND CONTROL SYSTEM

E24.1 General

E24.1.1 Description

- (a) This Specification shall cover the abandonment of existing services and supply and installation of all site electrical services, including power distribution and control system.

E24.2 Measurement and Payment

- E24.2.1 The power distribution and control system is a lump sum bid item. No measurement will be made for this work. The power distribution and control system and related work will be paid for at the Contract Lump Sum Prices for "Power Distribution and Control System". The prices shall be full payment for supplying all labour, equipment and materials supply and

install all equipment specified on the drawing 13-0109-001 E01, E02 and E03 including but not limited to a well pump control panel complete with VFD, line and load reactors, DV/DT filter and disconnect switch, transformer TR-3, 120/208V panel ODP, breakers, junction boxes, receptacles, conduits, all required permits, all trenching and pushing, all required coring, conduit, patching and painting, firestopping, all in ground junction boxes and all cables and conductors.

E25. SITE CLEAN UP

E25.1 General

- E25.1.1 The Contractor shall upon the completion of Work each day, load and dispose of all excess asphalt cuttings, spoiled concrete, reinforcing steel, granular and other material associated with the Works from the Site. The Contractor shall secure or remove all of his machinery and equipment at the end of each day from the immediate Work Site. The Contractor will not be permitted to store machinery, equipment, or materials on public roads overnight.
- E25.1.2 Unless otherwise specified the Contractor shall restore all areas which have been disturbed by his operations to as good as or better than original condition including removal of all construction debris, repair all vegetation, sod, concrete pavement, concrete curbs, concrete sidewalk and asphalt paving to remain etc. to the satisfaction of the Contract Administrator.
- E25.1.3 Total Performance of the Work shall not be attained until the Contractor has cleaned up the Site and has removed all tools, equipment, waste, debris and surplus foundation earth to the satisfaction of the Contract Administrator. Unless otherwise specified, the Contractor shall restore all areas of the Site beyond the established limit of Work, which have been disturbed by the Contractor's operations to as good as or better than the original condition to the satisfaction of the Contract Administrator.
- E25.1.4 Sod and Topsoil (repair to damaged areas). The Contractor shall install mineral sod and a minimum 75mm compacted thickness of topsoil, as required, and in accordance with CW 3510 and CW 3540.

E25.2 Measurement and Payment

- E25.2.1 Any costs in connection with Site Cleanup Works are considered incidental to other items. No payment shall be made.