



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 100-2014

ELWICK PARK SITE IMPROVEMENTS - PHASE TWO

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 ELWICK PARK SITE IMPROVEMENTS - PHASE TWO

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, March 13, 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, only to the Bidder who requested approval of the substitute.

- B7.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he/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 will 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 site development work at Elwick Park/School Site, 30 Maberley Road.

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

- (a) Removal of a baseball diamond including the removal of the players' boxes, wings and infield surfacing. The backstop is to remain.
- (b) Sodding.
- (c) Removal of asphalt.
- (d) Supply and installation of asphalt paving.
- (e) Development of an artificial turf cricket pitch.
- (f) Supply and installation of chain link cricket batting cages.
- (g) Supply and installation of a concrete plaza including vertical concrete elements and concrete flatwork.
- (h) Supply and installation of concrete park benches.
- (i) Pick-up and installation of Tache bench.
- (j) Supply and installation of basketball and drop shot standards.
- (k) Line Painting.

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is David Wagner Associates Inc., represented by:

David Wagner
Landscape Architect
Telephone No. 204 452-2426
E-Mail Address: dwagner@dwla.ca

D3.2 At the pre-construction meeting, David Wagner 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 e-mail address 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/matmgt/Safety/default.stm>

D9. INSURANCE

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

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg and David Wagner Associates Inc. 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.

D12. DETAILED WORK SCHEDULE

D12.1 The Bidder shall provide a detailed work schedule.

D12.2 The detailed work schedule shall consist of the following:

- (a) Ordering of artificial turf;
- (b) Delivery of artificial turf;
- (c) Start of Work on Site;
- (d) Excavation and site preparation;
- (e) Installation of concrete bases, vertical concrete elements, and concrete paving;
- (f) Installation of artificial turf;
- (g) Installation of asphalt paving;
- (h) Site development and site restoration;
- (i) Completion.

SCHEDULE OF WORK

D13. COMMENCEMENT

D13.1 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.

D13.2 The Contractor shall not commence any Work on the Site until:

- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D7;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D8;
 - (iv) evidence of the insurance specified in D9;
 - (v) the performance security specified in D10;
 - (vi) the Subcontractor list specified in D11; and
 - (vii) the Detailed Work Schedule specified in D12.
- (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.

D13.3 The Contractor shall not commence the Work on the Site before July 1, 2014.

D14. SUBSTANTIAL PERFORMANCE

D14.1 The Contractor shall achieve Substantial Performance within twenty-five (25) consecutive Working Days of the commencement of the Work as specified in D13.

D14.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted

during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

- D14.3 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.

D15. TOTAL PERFORMANCE

- D15.1 The Contractor shall achieve Total Performance within thirty (30) consecutive Working Days of the commencement of the Work as specified in D13.

- D15.2 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.

- D15.3 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.

D16. LIQUIDATED DAMAGES

- D16.1 If the Contractor fails to achieve Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City five hundred dollars (\$500) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.

- D16.2 The amount specified for liquidated damages in D16.1 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.

- D16.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D17. SCHEDULED MAINTENANCE

- D17.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

(a) Sodding as specified in E20.4.

- D17.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

CONTROL OF WORK

D18. JOB MEETINGS

- D18.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

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

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

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

D20. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

D20.1 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.

D21. DRAWINGS AND SPECIFICATIONS

D21.1 **The Contractor shall maintain one full size set of colour Drawings and Specifications on Site at all times during construction.**

D21.2 The Contractor shall maintain a set of record drawings on Site marking all Changes in Work to be submitted to the Contract Administrator at Total Performance.

MEASUREMENT AND PAYMENT

D22. PAYMENT

D22.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D23. WARRANTY

D23.1 Warranty is as stated in C13.

D23.2 Manufacturer's warranties on artificial turf shall apply.

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. 100-2014

ELWICK PARK SITE IMPROVEMENTS - PHASE TWO

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. 100-2014
ELWICK PARK SITE IMPROVEMENTS - PHASE TWO

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
L1	Existing Conditions & Removals Plan
L2	Development Plan
L3	Layout Plan
L4	Grading Plan
L-D1	Landscape Details One
L-D2	Landscape Details Two
L-D3	Landscape Details Three
SCD-121A	Tache Bench Composite with Arms

E2. HAZARDOUS MATERIALS

- E2.1 If asbestos or other hazardous materials are encountered during the Work of the Contract, the Contractor shall stop all work and notify the Contract Administrator immediately. Removal of hazardous materials shall be dealt with by the City and the Contractor shall await further instruction by the Contract Administrator.

GENERAL REQUIREMENTS

E3. SITE ACCESS

- E3.1 Access to the Site will be determined at the pre-construction meeting. The access shall be provided and maintained by the Contractor at his own expense and approved by the Contract Administrator.
- E3.2 The Contractor shall be restricted to the Site access locations and routes only so that there is a minimum of disturbance to the existing ground surface. 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.

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

- E4.1 Further to C: 6.12, the Contractor shall give all necessary notices, obtain all necessary permits and pay all fees in order that the Work may be carried out. The Contractor shall submit all plans required by any inspection authority and obtain approval of same before proceeding with the Work, and pay any cost attached to the inspection of such plans.

- E4.2 The Contractor shall comply with all laws, ordinances, rules and regulations that would related to the Work.
- E4.3 All notices, consents, approvals, statements, authorizations, documents or other communications to the City shall be submitted to the Contract Administrator.
- E4.4 All Work shall be performed in compliance with Manitoba Workplace Safety and Health.
- E4.5 All Work shall be performed in compliance with Manitoba Workplace Safety and Health Fall Protection guidelines.
- E4.6 The Contractor and Sub-contractors must be fully aware of all Work involving hazardous materials. All Work must be performed in compliance with the Manitoba Department of Labour Workplace Safety and Health Guidelines and all other applicable codes. The Contractor is responsible for the immediate notification to the Contract Administrator of his/her encountering of suspected hazardous material during their course of Work.

E5. PROTECTION OF SURVEY INFRASTRUCTURE

- E5.1 Further to CW1130, the Site has been cleared for survey monuments. The Geomatics Job Number is 11810.

E6. DAMAGE TO EXISTING STRUCTURES AND PROPERTY

- E6.1 Further to C: 17, all necessary precautions shall be exercised by the Contractor so as not to remove, disturb, or damage any existing trees, shrubs, sod, pavements, streets, roads, boulevards, poles, hydrants, water pipes, gas pipes, electrical wires, cables, conduits, sewers or other existing facilities and equipment at the Sites of the Work. For all damage incurred thereto in the performance of the Work, the Contractor shall upon instructions from and to the satisfaction of the Contract Administrator and the owners thereof, either replace and repair such damage, whichever may be deemed necessary in the opinion of, and acceptable to, the Contract Administrator and the owners thereof. The cost of which shall be borne entirely by the Contractor. The Contractor shall also indemnify and save harmless the City and David Wagner Associates Inc. from all claims made directly or indirectly against it in respect to any such damage.

E7. EXISTING SERVICES AND UTILITIES

- E7.1 No responsibility will be assumed by the Owner 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 Owner 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. PROTECTION OF EXISTING TREES

- E8.1 There are no existing trees within the construction boundary.

E9. TEMPORARY UTILITIES

- E9.1 Further to C: 6.12, the Contractor shall 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.
- E9.2 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.

E10. SITE ENCLOSURES

- E10.1 Further to E27, temporary Site enclosures, if determined necessary at the pre-construction meeting, shall be erected and maintained as required for the duration of the construction period.
- E10.2 Site enclosures and protection shall be considered incidental to the Contract Work.

E11. LAYOUT

- E11.1 The Contractor is responsible for the layout of all Work. The Contract Administrator shall be advised of the staking of the layout at least twenty-four (24) hours in advance in order that the layout may be inspected and adjusted as required prior to construction.

E12. SAMPLES

- E12.1 Samples called for in the Specification or requested by the Contract Administrator shall be submitted within fifteen (15) Calendar Days of request.
- (a) Identify samples with name of project, date, name of Contractor, name of supplier/manufacturer and use of material represented by sample.
 - (b) Do not proceed with delivery of materials until samples are reviewed by the Contract Administrator. No deviation is permitted after approval of sample.
 - (c) Approval of samples does not imply acceptance of finished Work.
 - (d) Where required, submit a range of samples, as may be reasonable.

E13. TEST REPORTS

- E13.1 Where required by the Contract Administrator, the Contractor shall provide certified copies of tests upon materials to be used in construction of the Work, indicating that the materials comply with the Specifications.
- E13.2 Submit test results to the Contract Administrator within ten (10) Calendar Days of request.
- E13.3 All testing costs shall be the responsibility of the Contractor.

SITE WORKS

E14. CONSTRUCTION BOUNDARY

- (a) Further to E3, E6, and E10, Contractors are to work only within the Construction Boundary as shown on the Drawings or as directed by the Contract Administrator.

E15. REMOVALS

- E15.1 General Description
- (a) This specification shall cover the removal of the following:
 - (i) Chain link baseball players' boxes and wings.
 - (ii) Baseball infield surfacing.
 - (iii) Asphalt paving and any associated base materials.
 - (b) It shall also cover the removal of turf and any other demolition and removal necessary to construct the project, which may be considered incidental to other items of Work.
- E15.2 Methods
- (a) Removal of Baseball Players' Boxes and Wings

- (i) The extent of the removals for this item are to be confirmed on site with the Contract Administrator. The baseball backstop is to remain and be protected throughout the Contract.
- (ii) The chain link players' boxes and wings are to be removed in their entirety including the removal of all foundations.
- (b) Removal of Baseball Infield Surfacing
 - (i) The existing baseball infield surfacing and any adjacent non-turf surfacing is to be removed to a depth of 150mm.
- (c) Removal of Asphalt and Associated Base Materials
 - (i) As per CW3110.
 - (ii) Asphalt shall be sawcut to separate asphalt to remain from asphalt to be removed.
 - (iii) Asphalt is to be removed from areas designated on the Drawings, taking care to preserve adjacent paving surfaces that are to remain.
 - (iv) Base materials are to be removed as well as rubble, stones, silt, rubbish and any surplus material as required to prepare the subgrade to receive new surfaces as shown on the Drawings.
- (d) Removal of existing turf for the construction of other surfaces shall be considered incidental to the construction of those Works.
- (e) All materials, to be demolished and removed, are to be removed from the Site and disposed of in a safe and legal manner. Excavated materials shall be recycled or legally disposed of off-site.

E15.3 Site Restoration

- (a) Any holes left by the removal of posts or foundations shall be filled with compacted clean clay fill to meet the adjacent grades and be restored to match surrounding conditions to the satisfaction of the Contract Administrator.
- (b) Any site restoration required due to removals, and not shown on the Drawings as areas for new development, shall be considered incidental to the removal Work.

E15.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price for the Items of Work listed below, which price shall include all costs of removal and proper disposal, and any associated Site restoration.
- (b) Items of Work:
 - (i) Removal of Baseball Players' Boxes and Wings
 - (ii) Removal of Baseball Infield Surfacing
 - (iii) Removal of Asphalt and Base

E16. SITE GRADING

E16.1 General Description

- (a) Further to CW 3170, this specification shall cover the Site grading, including:
 - (i) The cut and fill required to achieve the proposed Site grades.
 - (ii) The cut and fill required for the construction of the concrete plaza including modifications to the existing hill.

E16.2 Methods

- (a) The construction areas are to be excavated or filled to achieve rough grade.
 - (i) Rough grade is to be to levels, profiles and contours allowing for surface treatment as indicated on Drawings.
- (b) Base preparation and associated site grading for the concrete and asphalt paving shall be as specified under those Items of Work.

- (c) Wherever the proposed Site grading is to meet existing Site grades, the grades are to match and positive Site drainage is to be maintained. Where sloped areas meet flat areas, at both top and bottom of slopes, the transition shall be rounded to the extent that future maintenance by turf mowing equipment can be easily done.
- (d) In fill areas, the Contractor shall scarify the existing ground to a minimum depth of 150mm prior to the placement of any fill.
- (e) Compaction shall include the use of sheep's foot or other suitable compaction equipment as approved by the Contractor to achieve a minimum compaction of 95% Proctor Density.
- (f) All surplus materials shall be disposed of off Site in a legal manner and as directed by the Contractor.
- (g) Following rough grading and compaction, the Work area shall be fine graded to provide a maximum deviation of 25mm in 10m from the design grade with no low areas to hold water. The finished surface of all disturbed areas shall be dragged smooth in such a manner that there are no loose soil particles greater than 25mm in maximum dimensions.

E16.3 Basis of Payment

- (a) Payment for Work, specified under this section, shall be incidental to the other Items of Work and no separate payment will be made for Site grading.

E17. ARTIFICIAL TURF CRICKET PITCH

E17.1 General Description

- (a) This specification shall cover the supply and installation of the artificial turf on top of the existing cricket pitch.

E17.2 Materials

- (a) Artificial Turf
 - (i) Challenger Industries Inc., GS5M / Grand Slam 5mm nylon, monofilament, Turf Green, 9mm pile ht., c/w 237 g/m² stabilized dual layered woven polypropylene primary backing and 2526g/m² pre-coat 5mm urethane foam scrim secondary backing. (Challenger Ind. Inc., Dalton, Ga., 1-800-334-8873); or
 - (ii) Easy Turf, Tru-Roll Putting Green, 16mm pile ht., c/w Putting Green Pad underlay. (Easy Turf, <http://www.easyturf.com>);
 - (iii) or approved substitute in accordance with B7.

E17.3 Methods

- (a) The existing granular surface is to be graded smooth and compacted to 90%.
- (b) The PT wood retaining timbers are to be installed true and level to grade.
- (c) The interior and exterior of the wood frame is to be filled with granular, coarse sand, or top soil as required.
- (d) The artificial turf and underlay are to be installed as per the manufacturer's specifications. The turf is to be one continuous piece / surface. Seams and or joints are not permitted.
- (e) The materials are to be stretched and fastened as per the manufacturer's specifications. Wrinkles are not permitted.
- (f) A minimum 2M long piece the width of the roll, is to be supplied and left with the owner for incidental patching purposes in the future.

E17.4 Basis of Payment

- (a) Payment for Work, specified under this section, shall be paid for at the Unit Price, measured on a lump sum basis, for the Items of Work listed below. The shall include all costs of excavation, material supply and proper material installation for base preparation and artificial turf. Rough and final grading and Site restoration work shall be considered incidental to the Work.

- (b) Items of Work:
 - (i) Artificial Turf Cricket Pitch

E18. CRICKET BATTING CAGE

E18.1 General Description

- (a) Further to CW 3550, this specification shall cover the supply and installation of the chain link batting cages.

E18.2 Materials

- (a) Chain link fencing as specified in CW 3550 and on the Drawings.

E18.3 Methods

- (a) Contractor must supply shop drawings for the chain link batting cages, based on dimensions as shown on the Drawings, to the Contract Administrator prior to Construction.
- (b) The layout for the batting cages shall be as shown on the Drawings.
 - (i) Adjustments to the layout may be required to avoid underground electrical services. The Contractor shall confirm proposed locations with the Contract Administrator prior to installation.

E18.4 Basis of Payment

- (a) Payment for Work, specified under this section, shall be paid for at the Unit Price, measured on a lump sum basis, for the Items of Work listed below. The price shall include all costs of material supply and proper material installation. Site restoration work to the existing granular surfacing shall be considered incidental to the Work.
- (b) Items of Work:
 - (i) Cricket Batting Cage

E19. ASPHALT PAVING

E19.1 General Description

- (a) Further to CW 3110 and CW 3410, this specification shall cover the supply and installation of the asphalt surfacing including excavation, sub-base and base construction, and asphaltic paving.

E19.2 Materials

- (a) As per CW 3110 and CW 3410.
- (b) Clean clay fill material shall be used in areas requiring non-aggregate backfill or to replace unacceptable material excavated from the Site.
- (c) Granular Sub-base:
 - (i) 50mm down crushed limestone
- (d) Granular Base:
 - (i) 20mm down crushed limestone
- (e) Asphalt shall be Type II (10mm aggregate is to be used in the asphalt mix).
- (f) Geotextile Fabric: Non woven type, CW 3130

E19.3 Methods

- (a) Excavations
 - (i) As per CW 3110.
 - (ii) All rubble, stones, silt, rubbish and any surplus material shall be legally disposed of off-site.

- (b) Sub-Grade Preparation
 - (i) As per CW 3110 and E16.
 - (ii) Clean fill shall be compacted to 98% SPD where necessary to obtain required sub-grade elevations.
- (c) Base Courses
 - (i) As per CW 3110.
 - (ii) Sub-Base – 150mm depth, compacted.
 - (iii) Base – 50mm depth, compacted.
- (d) Construction details as specified on the Drawings.
- (e) Paved areas are indicated on the Drawings.
- (f) This Work shall be coordinated with the construction of the concrete plaza.
- (g) The Contract Administrator shall inspect the sub-base prior to the installation of asphalt.
- (h) The Contractor is to ensure that the adjacent materials and surfaces remain clean and free of asphalt. Over pour of asphalt and excess granular base shall be removed prior to acceptance of the asphalt paving.

E19.4 Basis of Payment

- (a) Payment for Work, specified under this section, shall be paid for at the Unit Price, measured on a square meter basis, for the Items of Work listed below. The price for Asphalt Paving shall include all costs of excavation, material supply and proper material installation for sub-grade, sub-base and base preparation, and asphaltic paving. Rough and final grading and Site restoration work shall be considered incidental to the Work.
- (b) Items of Work:
 - (i) Asphalt Paving

E20. TOPSOIL AND SODDING

E20.1 General Description

- (a) This specification shall cover the site preparation and the supply and installation of topsoil and sod.
 - (i) Associated Site grading shall be considered incidental to this Work.
 - (ii) Topdressing to level drain tile trenches in areas shown on L2 shall be considered incidental to this Work.

E20.2 Materials

- (a) Topsoil: As per CW 3540.
- (b) Sodding
 - (i) As per CW 3510.
 - (ii) Sod shall be mineral base.

E20.3 Methods

- (a) Areas to be sodded shall be excavated and/or filled with clean fill and rough graded to meet the grades required for the installation of topsoil and sod and as shown on the Drawings. Surplus materials shall be removed off-site in a legal manner.
- (b) No area for Sodding shall be less than the width of a full piece of sod.
- (c) Where Sodding meets existing turf, the edges are to be cut neatly in straight lines using a sod cutter and new sod is to be installed to match the existing grades of the surrounding turf.
- (d) Seams between new and old turf are to be topdressed, seeded and rolled.

- (e) Areas where drain tile was previously installed and where the ground has settled are to be topdressed and seeded to be level with surrounding turf.
- (f) Only those areas shown on the Drawings as New Sodding shall be paid for under this section. All other Site restoration shall be considered incidental to other Works.

E20.4 Maintenance Period

- (a) The Contractor shall maintain the sod for 30 Calendar Days after the completion of the installation or until such a time as the turf is established in accordance with CW 3510.

E20.5 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a square metre basis, for the Items of Work listed below, which price shall include all costs of removals and disposal, material supply, sub-grade preparation, hill modification, proper material installation, maintenance and all other items incidental to the Work.
- (b) Items of Work
 - (i) Topsoil and Sodding

E21. FOUNDATIONS

E21.1 In ground installed site furnishings are to be set in concrete footings or piles to ensure stability and prevent frost heaving. The current Standard Construction Specifications of the City of Winnipeg, CW 2160 – Concrete Underground Structures and Works, is to be utilized in the installation of the concrete works for all below ground components.

E21.2 The specific concrete requirements shall be;

- (a) Sulfate resistant, Type 50 Cement;
- (b) 28 day compressive strength of 30 Mpa;
- (c) maximum aggregate size of 20 mm, nominal;
- (d) slump 80 ±20 mm;
- (e) maximum water/cement ratio 0.49.

E21.3 Installation

- (a) Contractor shall notify the Contract Administrator at least 48 hours prior to installation of concrete, so that footings may be inspected in advance of concrete being poured.
- (b) Work under this section is considered incidental to the installation of the site furniture.

E22. SITE FURNITURE

E22.1 General Description

- (a) This specification shall cover the supply and installation of site furniture as shown on the Drawings.

E22.2 Materials

- (a) Benches
 - (i) Barkman Concrete Park Bench, OB001-12.
 - (ii) Tache Composite Bench with Arms, in-ground mount, Drawing No. SCD-121A, Product #52501085GLV, 1.8 M length (6'), manufactured by the City of Winnipeg, galvanized finish for metal and cedar tone for the boards. This bench is for pick-up and install only. Cost of supply borne by City.
- (b) Drop Shot
 - (i) Landscape Structures Drop Shot, product # 100042A, in ground mount.
 - (ii) Colours: Funnel to be Tangerine and Post to be Denim.

- (c) Basketball Standard
 - (i) Sportsplay single heavy duty basketball standard, product # 541-616 , 114mm O.D. galvanized steel post, 1200mm extension, aluminum backboard, super goal (double rimmed) and chain net.
 - (ii) The basketball standard is to match the existing basketball standards.

E22.3 Methods

- (a) All site furnishings are to be installed according to Drawings and manufacturer's specifications, 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) Foundations as per E21.
- (c) All furnishings are to be installed plumb and true to correct elevations. The Contractor shall confirm proposed locations with the Contract Administrator prior to installation.
- (d) Where site furniture is located on asphalt, the foundation holes are to be neatly formed or cut into the asphalt in a consistently round or square shape. The concrete foundations are to be finished cleanly and flush with the asphalt.
- (e) Site furnishings are to be kept clean of any granular, concrete, asphalt or other materials. Any damaged surfaces shall be touched-up to the satisfaction of the Contract Administrator.

E22.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per unit basis, for the Items of Work listed below, which price shall include all costs of proper material installation. Site restoration work and required foundations shall be considered incidental to the Work.
- (b) Items of Work:
 - (i) Concrete Benches – Supply & Install
 - (ii) Tache Bench – Pick-up & Install
 - (iii) Drop Shot
 - (iv) Basketball Standard

E23. LINE PAINTING

E23.1 General Description

- (a) This specification shall cover all aspects of the supply and installation of:
 - (i) Line Painting for one (1) Four Square, two (2) Regular Hopscotch, and one (1) Snail Hopscotch.

E23.2 Materials

- (a) Line Paint
 - (i) Line paint shall be to CGSB 1-GP-74M, alkyd traffic paint. Colour to CGSB 1-GP-12C, White 513-301.
 - (ii) Thinner to CGSB 1-GD-5M.
- (b) Samples
 - (i) Material samples shall be submitted at least 4 weeks prior to commencing painting Work.
 - (ii) Sampling shall be to CGSB 1-GP-71.
 - (iii) Samples are to be marked with the name of project and location, paint manufacturer's name and address, name of paint, CGSB specification number, formulation number, and batch number.

E23.3 Methods

- (a) The asphalt pavement surface shall be dry, free from ponded water, frost, ice, dust, oil grease or any other foreign materials. The surface shall be cleaned using a power broom or air-blower.
- (b) After the surface has been thoroughly cleaned, the designated game lines shall be marked in accordance with the Drawings.
- (c) Application of line painting is only to be done under conditions conducive to a clean and accurate installation. Unless otherwise approved by the Contract Administrator, paint is to be applied only when air temperature is above 10 degrees C° and no rain or wind is forecast.
- (d) The paint shall be applied evenly at a rate of 3 sq.m/L by an approved pressure type module distributor.
- (e) Tolerances: All paint markings shall be painted within 10mm, plus or minus. Lines are to be of uniform colour and density with sharp edges.
- (f) The line painting shall be protected until dry.

E23.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price for the Items of Work listed below, which price shall include all costs of material supply, proper material installation and all other items incidental to the Work.
- (b) Items of Work
 - (i) Line Painting

CONCRETE PLAZA

E24. GENERAL

E24.1 The following specifications apply to the construction of the concrete plaza in its entirety. The Work to be done by the Contractor shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other items necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as specified herein.

E24.2 The Contractor is obliged to provide a complete concrete plaza as shown on the Drawings.

E24.3 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Lump Sum Price for the Items of Work listed below, which price shall include all costs of site grading, base material supply and proper material installation, supply and installation of vertical concrete elements, supply and installation of all poured-in-place concrete works, steel rails, and all other items incidental to the Work.
- (b) Items of Work
 - (i) Concrete Plaza

E25. PRECAST VERTICAL ELEMENTS

E25.1 At the Contractor's discretion and with the Contract Administrator's approval, the Contractor may use precast concrete elements for the vertical work in the concrete plaza.

E25.2 The precast elements are to meet or exceed the specifications herein.

E25.3 Should precast concrete elements/components be deemed appropriate, the Contractor and the element/component manufacturer are to work together to provide the best possible finished

product, coordinating the supply and installation of the precast and poured-in-place concrete works and the metal works.

- E25.4 Precast concrete elements must be ordered and manufactured prior to the commencement of Work on Site.

E26. SHOP DRAWINGS

- E26.1 Shop drawings shall be submitted to the Contract Administrator for all poured-in-place and precast vertical elements prior to their manufacture.

- (a) Shop Drawings shall include, but not be limited to:
- (i) Layout and configuration of elements;
 - (ii) Dimensions of elements; and
 - (iii) Installation details.

E27. PROTECTION

- E27.1 The Contractor shall be responsible for protecting their Work until the Work has been completed, fully cured and set; also for protecting other surfaces during execution of Work in accordance with the Specifications.
- E27.2 Should the Work be suspended for any cause whatsoever, the Contractor shall assume all responsibility for proper protection during such period.
- E27.3 The Contractor is responsible for securing the Site at all times. Experience has shown that a security guard is required 24/7 during the critical concrete curing stages to prevent trespassing onto the Site. Security fencing is not sufficient to prevent such trespassing.

E28. BASE PREPARATION FOR CONCRETE WORKS

- E28.1 General Description

- (a) Further to CW 3170 and CW 3110 and the detail Drawings, this specification shall cover the base preparation for the concrete Works, including:
- (i) The base preparation for the poured-in-place concrete flatwork and vertical elements.
- (b) The modification of the existing hill shall be considered incidental to this Work.

- E28.2 Related Work

- (a) Site Grading as specified in E16.

- E28.3 Materials

- (a) Geotextile Fabric: Non woven type, CW 3130
- (b) Granular Sub-base: 50mm mm crushed stone
- (c) Granular Base: 20mm crushed stone

- E28.4 Fine Grading

- (a) Subgrade shall be fine graded to depths required to allow for base materials.
- (b) Sub-grade shall be graded to same slopes as the finished surface grades and towards the perimeter of the concrete Work. Sub-grade shall be proof rolled to 95% Standard Proctor Density.

- E28.5 Base Installation

- (a) The base installation is to the specifications shown on Drawings.
 - (i) Base materials are to be compacted to 95% Standard Proctor Density.

E29. CONCRETE WORK

E29.1 General Description

- (a) Further to CW 3310, this specification shall cover the supply and installation of concrete for the construction of the concrete plaza:
 - (i) Poured-in-place concrete for the vertical elements and the flatwork for the concrete plaza.

E29.2 Reference Standards

- (a) All concrete Work shall be to The City of Winnipeg Standard Construction Specifications and the following:
 - (i) CAN3-CSA A23.1 "Concrete Materials and Methods of Concrete Construction", latest edition.
 - (ii) CAN3-CSA A23.2 "Method of Test for Concrete", latest edition.
- (b) Where discrepancies may occur between Drawings, Specifications and Standards, the highest quality specification shall apply.

E29.3 Mix Designs

- (a) Contractor is to submit mix design to Contract Administrator for approval a minimum of one week prior to the first pour.
- (b) Mix design shall be:
 - (i) Concrete strengths at 28 days shall be as follows:
 - Exterior slabs: 35 MPA; Water/cement ratio 0.40
 - Slump Max. 90 mm;
 - Aggregate Max. 20 mm;
 - Entrained Air / Category : 1
 - Class of Exposure: C-1
 - (ii) Air entraining admixtures shall conform to the requirements of ASTM C260 "Standard Specification for Air Entraining Admixtures for Concrete". Superplasticizing admixtures shall conform to ASTM C494/C494M-99a "Standard Specification for Chemical Admixtures for Concrete", or ASTM C1017/C1017M-99 "Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete" when flowing concrete is applicable. Air entrained admixtures are to have a durability factor greater than 75, when tested to ASTM Standards C666 Procedure A. Spacing factor for any air entraining admixture must be 0.17mm or less when tested in accordance with ASTM C457 "Standard Test Method for Microscopical Determination of Parameters of the Air-Void System in Hardened Concrete".
- (c) Sample Panels for each Type (I & II) of concrete Work will be required prior to authorization for general concrete Work within the concrete plaza. The Contractor shall prepare one pour test panels complete with the required level of finish for review, approval and maintenance as a "standard".
- (d) The Contractor may choose to construct the sample panels within the Contract area but may be required to remove the Work if it does not meet specification for shape and finish.
- (e) The Contractor may choose to construct a smaller panel outside of the Contract area for the purpose of review and approval only.
 - (i) Obtain approval of Contract Administrator for test sections.
 - (ii) Prepare a representative test section of each finish on site in an inconspicuous location, at least one square meter.
- (f) The test section must be produced by the same workers who will complete the Work.
- (g) The Contract Administrator will utilize a brick layers level or other straight edge or other specified devise to check for consistent shape and slope over the entire sample panels. Insitu test areas showing irregularities in the finish surface exceeding 3mm shall be

removed and replaced by the Contractor. Grinding or rub finishing are not permissible methods of remedying irregularities.

- (h) Written approval from the Contract Administrator is required prior to additional concrete Work.

E29.4 Materials

- (a) Materials are to comply with CSA A23.
- (b) Cement: Type 10 - Normal Portland cement.
- (c) Aggregates: CW 3310
- (d) Additives: CW 3310.
- (e) Reinforcement: as per Drawings
 - (i) All reinforcing steel to be CSA G30.18M 300 MPA deformed bars. All reinforcing is to be detailed in accordance with the latest edition of the ACI Detailing Manual, except otherwise noted.
 - (ii) **All reinforcing to be held in place and tied by the use of proper accessories such as hi-chairs, spacers, etc., and are to be supplied by the reinforcing steel fabricator.**

E29.5 Formwork

- (a) Any forms, if required, shall be so constructed that the finished concrete will conform to the shapes, lines grades and dimensions shown on the Drawings.
- (b) Form plywood shall be used for exposed concrete surfaces.
- (c) Any walls shall be formed using plastic cone ties. All ties shall be arranged in symmetrical, aligned vertical and horizontal rows. They shall be so arranged that when the forms are removed, no ties shall be within 1" of any exposed surface. Wire ties may be permitted only on light work and shall not be used through surfaces where discolouration will be objectionable. All wall reinforcing shall be continuous at corners and intersections. Corner bars or hooks shall be used.
- (d) All cracks and holes are to be plugged, taped and sealed in forms to withstand pressure and remain watertight.
- (e) Forms are to be designed to permit removal without damage to finish.
- (f) Formwork is to be cleaned and conditioned before each use. Damaged forms are not permitted.
- (g) After removal of plastic cone ties, tie ends are to be treated with rust inhibitive coating. Cement plugs are to be recessed to uniform depth, taking care not to damage surrounding edge of concrete.
- (h) Lumber used in forms shall be free from warp. For any exposed surfaces, it shall be dressed to a uniform width and thickness and be free from loose knots, decay or other defects. For unexposed surfaces and rough work, undressed lumber may be used if means are taken to prevent leakage.
- (i) The inside of forms shall be coated with non-staining mineral oil or other approved liquid or thoroughly wetted (except in freezing weather). Where oil is used, it shall be applied before the reinforcement is placed.
- (j) Care is to be taken to ensure that forms do not become dried and warped before concrete is deposited. Before concrete is placed, forms and reinforcement shall be checked and approved by the Contract Administrator.
- (k) Forms shall not be disturbed until the concrete has adequately hardened. Forms are to be removed in a regular sequence of elapsed time between pour and removal so as to maintain colour consistency.
- (l) All exposed edges of concrete shall have a 25mm radius.

E29.6 Shaping Templates

- (a) The shape of the features is critical to the success of the plaza.
- (b) All wooden templates must be prepared in a controlled environment to ensure accuracy and prevent warping. Templates must be approved through shop drawings and numbered to relate to the contract drawings for ease of assembly on site.

E29.7 Workmanship

- (a) The concrete plaza shall be constructed in accordance with the Drawings provided. Finishing shall produce a first class, smooth surface, free from irregularities or imperfections greater than 3mm from specified surface finishes.
- (b) Curved and flat surfaces are to be screeded using accurately cut screed boards and templates in accordance with Drawing sections.
 - (i) Screeds and templates are to be reinforced and of manageable size to avoid distortion.

E29.8 Tolerances for Concrete

- (a) Variations from level or plumb of wall and slab surfaces:
 - (i) Plus or minus 3mm over 3m distance for all banks and slabs. Level and true concrete panels are extremely important to the safety of the concrete plaza.
- (b) Variation in thickness of slabs and walls:
 - (i) Plus or minus 6mm.

E29.9 Tolerances for Reinforcing

- (a) Shear and bending tolerance:
 - (i) Straight bars: plus or minus 25mm.
 - (ii) Stirrups, ties or spirals: plus or minus 12mm.
 - (iii) Bents bars – length: plus or minus 12mm.
- (b) Placing tolerance:
 - (i) Place within 6mm with respect to concrete thickness and center to center spacing.

E29.10 Joints

- (a) Joints are to conform to Drawings unless otherwise indicated. All construction key joints are to be a minimum of 38mm deep.
- (b) Saw cuts shall be completed when concrete has sufficiently hardened that cutting can be performed without damaging slabs.
- (c) Expansion joints shall be installed along vertical elements such as walls and ledges.

E29.11 Concrete Pouring

- (a) Typically the plaza concrete is placed in individual panels and segments to suit the designed, compound surfaces. These are placed in 'leap frog' fashion, allowing 5-7 days for maximum shrinkage to take place before placing intermediate segments.
- (b) Drainage slopes must be planed with care from base of banks, stairs and other elements to drain to edge of the concrete plaza.

E29.12 Curing and Protection

- (a) Slabs shall be kept moist for at least 7 consecutive days after placing unless otherwise approved by the Contract Administrator.
- (b) All concrete shall cure for 28 days prior to allowing any traffic. Protective barriers are to be installed to prevent traffic into the plaza. Refer to E27.

E29.13 Winter Concrete

- (a) Not permitted.

E29.14 Finishing Surfaces

- (a) Broom Finish Concrete
 - (i) A light broom finish perpendicular to direction of travel is to be used on stair treads and sidewalk only.
- (b) Smooth Finish Concrete
 - (i) Concrete finish for any banks, ledges and walls shall be a hard trowel finish (12 passes) to produce a smooth, dense surface with no irregularities. Smooth finish is to be non-textural with no exposed aggregate. Flat slabs are to be power towelled.
 - (ii) All "flatwork" is to have a minimum sloped grade of 1% and be in accordance with the overall grading plan for the plaza.
 - (iii) For both hand and power towelled surfaces, on site test panels are to be done prior to start to establish acceptance and criteria for plaza standards.
- (c) All edges shall be rounded with a 25mm radius rounding tool unless shown differently on Drawings.
- (d) Prior to final completion of concrete elements, dress all areas with dressing stone and grinder as directed by Contract Administrator. This will include slab surfaces, edges, control and construction joints, and walls.

E30. JOINT SEALANT

E30.1 General Description

- (a) Further to CW CW 3310, this specification shall cover the supply and installation of joint sealants for concrete.

E30.2 References

- (a) Conform to CAN2-19.13-M82.

E30.3 Submittals

- (a) Provide samples of manufacturer's product brochures and product names, range of colours in each type of sealant for selection by Contract Administrator.

E30.4 Warranty

- (a) Promptly correct, at no expense to Owner, any defects or deficiencies which become apparent within warranty period. Defects shall include, but shall not be limited to, sag and failure in adhesion or cohesion, air and moisture leakage, hardening, running, sagging, change of colour, crumbling, melting, bubbling, and staining of adjacent materials.

E30.5 Environmental Conditions

- (a) Do not apply any sealant at ambient temperatures below 5°C without consulting manufacturer and obtaining Contract Administrator's approval. Apply only to completely dry surfaces.

E30.6 Materials

- (a) All sealants utilized in the sealant system shall be compatible.
- (b) Provide sealant formulation recommended by the manufacturer for the type of joint, substrate and service conditions applicable.
- (c) Sealant Type A: Multi-component, polyurethane base, chemical curing, CAN2-19.24-M80, Dymeric by Tremco Ltd., 220 Wicksteed Ave., Toronto, (416) 421-3300, or approved substitute in accordance with B7.

- (d) Sealant Type B: Self-levelling, multi-component, polyurethane base, chemical curing, THC-900 and THC 900 Joint Primer by Tremco Ltd., 2200 Wicksteed Ave., Toronto, (416) 421-3300, or approved substitute in accordance with B7.
- (e) Sealant Backing: Extruded, foamed, closed cell, round, polyethylene urethane, neoprene or vinyl rod, 30% greater diameter than joint width, with Shore 'A' hardness of 20 and 830 – 900 KPa tensile strength, and manufactured especially for the purpose.
- (f) Expansion Joint Filler: Preformed PVC closed cell, Rodofoam by Sternson Canada Limited, or approved substitute in accordance with B7.
- (g) Joint Primer: As recommended by sealant manufacturer for type of surface being primed.

E30.7 Preparation

- (a) Clean joints and spaces which are to be sealed and ensure that they are dry and free of dust, loose mortar, oil, grease and other foreign material. Clean ferrous metals of all rust, mill scale and foreign materials by wire brushing, grinding or sanding.
- (b) Wipe all metal surfaces to be sealed, except pre-coated metals, with cellulose sponges or clean rags soaked with ethyl alcohol, ketone solvent, xylol or toluol and wipe dry with clean cloth. Where joints are to be sealed with silicone based sealants clean joint with methyl-ethyl-ketone (MEK) only. Clean pre-coated metals with solutions or compounds which will not injure finish and which are compatible with joint primer and sealant. Check that ferrous metal surfaces are painted before applying sealant.
- (c) Examine joint sizes and correct to achieve proper width/depth ratio and as per drawings:
 - (i) 6 mm x 6 mm minimum joint size
 - (ii) 6 mm to 12 mm depth shall equal width
 - (iii) 12 mm to 50 mm depth equal 1/3 of width or 12 mm whichever is less
- (d) Install joint backing or apply bond breaker tape to achieve correct joint depth.
- (e) On horizontal traffic surfaces, support joint filler against vertical movement which might result from traffic loads, including foot traffic.
- (f) Where surfaces adjacent to joints are likely to become coated with sealant during application, mask them prior to priming and sealing.
- (g) Prime sides of joints, if priming is recommended by sealant manufacturer for type of surface being sealed.
- (h) Check form release agent used on concrete for compatibility with primer and sealant. If they are incompatible inform Contract Administrator and change primer and sealant to compatible types approved by Contract Administrator or clean concrete to Contract Administrator's approval.

E30.8 Application

- (a) Apply sealant using air or hand operated guns fitted with suitable nozzles and equipment approved by sealant manufacturer. Apply in strict accordance with manufacturer's directions and recommendations.
- (b) Apply sealant under pressure to assure good adhesion to sides of joints and to completely fill all voids in joint.
- (c) Form surface of sealant smooth, concave, free from ridges, wrinkles, sags, air pockets and embedded foreign matter.
- (d) Upon completion, remove masking, sealant smears and droppings from adjacent and other surfaces.
- (e) Use one of sealants specified for each type in following locations. Ensure that sealant chosen for each location is recommended by manufacturer for use for conditions encountered.

- (i) Type A: Vertical joints in exterior concrete surfaces; joints in paving; and all other locations where sealing is required except in locations designated for Type B and except where sealing specified in other Sections.
- (ii) Type B: Joints in exterior horizontal concrete surfaces.

E31. MISCELLANEOUS METALS

E31.1 General Description

- (a) This specification shall cover the supply and installation of miscellaneous metal Work including steel handrail.

E31.2 Workmanship

- (a) Metal Work shall be finished straight, even and smooth and free of any defects to sizes specified and required.
- (b) Work shall include all necessary angles, brackets, metal inserts, rivets, anchor bolts, frames, adjusting screws, gaskets and other items necessary for the complete installation of the Work.
- (c) Welding is to be neat, symmetrical, clean and unobtrusive in appearance.

E31.3 Reference Standards

- (a) Canadian Institute of Steel Construction (CISC)
- (b) American Society for Testing and Materials (ASTM)
- (c) Canadian Standards Association (CSA)

E31.4 Submittals

- (a) Samples of any component, requested by the Contract Administrator, shall be submitted prior to fabrication.
- (b) Shop Drawings shall be submitted the handrail. All dimensions are to be verified prior to fabrication.

E31.5 Materials

- (a) Unless detailed or specified otherwise, standard products will be acceptable if construction details and installation meet the intent of the Drawings and Specifications in the opinion of the Contract Administrator.
- (b) Materials to be stainless steel as shown on Drawings.
- (c) Work is to be free from defects which impair the strength or durability or which are visible. Work is to be new or best quality, and free from rust, waves or buckles.
- (d) Fasteners: Unless otherwise specified, provide fasteners as follows:
 - (i) Steel anchor bolts to conform to ASTM A307.
 - (ii) Steel bolts and lag screws to conform to ASTM A325.

E31.6 Fabrication

- (a) Site measurements are to be taken before fabrication to ensure accurate fitting.
- (b) Weld joints tight, flush, and grind smooth, in true planes with base materials. Make welds continuous.

E31.7 Installation

- (a) As per Drawings.
- (b) Install Work plumb, true, square, level, straight, and accurately and tightly fitted together and to surrounding Work.