



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 104-2006

WOLSELEY AREA – RIVERBANK ACCESS PARK IMPROVEMENTS

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PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

B1.1 WOLSELEY AREA – RIVERBANK ACCESS PARK IMPROVEMENTS

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, May 10, 2006.

B2.2 Bid Submissions 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. ENQUIRIES

B3.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

B3.2 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.

B3.3 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.

B3.4 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.

B3.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B4. ADDENDA

B4.1 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.

B4.2 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.

B4.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

B4.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet site for addenda shortly before submitting his Bid.

B4.3 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.

B5. SUBSTITUTES

- B5.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B5.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B5.3 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.
- B5.4 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.
- B5.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B5.6 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.
- B5.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B5.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B5.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B13.
- B5.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B6. BID SUBMISSION

B6.1 The Bid Submission consists of the following components:

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

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

B6.2.1 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.

B6.3 Bid Submissions submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B6.4 Bid Submissions shall be submitted to:

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

B7. BID

B7.1 The Bidder shall complete Form A: Bid, making all required entries.

B7.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

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

B7.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B7.2.

B7.3 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.

B7.4 Paragraph 10 of Form A: Bid shall be signed in accordance with the following requirements:

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

B7.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.

B7.4.2 All signatures shall be original.

B7.5 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 Submission and the Contract, when awarded, shall be both joint and several.

B8. PRICES

B8.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B8.2 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.

B8.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B9. QUALIFICATION

B9.1 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;
- (b) be responsible and not be suspended, debarred or in default of any obligation to the City;
- (c) be financially capable of carrying out the terms of the Contract;
- (d) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract;
- (e) have successfully carried out Work, similar in nature, scope and value to the Work;
- (f) employ only Subcontractors who:
 - (i) are responsible and not suspended, debarred or in default of any obligation to the City (a list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>); and
 - (ii) have successfully carried out Work similar in nature, scope and value to the portion of the Work proposed to be subcontracted to them, and are fully capable of performing the Work required to be done in accordance with the terms of the Contract;
- (g) have a written Workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba);

B9.2 The Bidder shall be prepared to 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.

B9.3 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.

B10. OPENING OF BIDS AND RELEASE OF INFORMATION

B10.1 Bid Submissions will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Branch, or in such other office as may be designated by the Manager of Materials.

B10.1.1 Bidders or their representatives may attend.

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

B10.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

B10.4 The Bidder is advised that any information contained in any Bid Submission 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.

B11. IRREVOCABLE BID

B11.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B11.2 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.

B12. WITHDRAWAL OF BIDS

B12.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B12.1.1 Notwithstanding GC:23.3, 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.

B12.1.2 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.

B12.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials shall:

- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
- (b) open the Bid Submission 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 B12.1.3(b), declare the Bid withdrawn.

B12.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B11.2 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.

B13. EVALUATION OF BIDS

B13.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B9 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B5.

B13.2 Further to B13.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission 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 if the interests of the City so require.

B13.3 Further to B13.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid Submission or in other information required to be submitted, that he is responsible and qualified.

Further to B13.1(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.

B13.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B13.4 Further to B13.1(c), the Total Bid Price shall be adjusted if necessary, as follows:

- (a) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder is within the budgetary provision for the Work, no adjustment will be made to the Total Bid Price; or
- (b) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder exceeds the budgetary provision for the Work, the Total Bid Price of all responsive Bids submitted by responsible and qualified Bidders will be adjusted by progressively deducting the following items in the order listed, until a Total Bid Price within the budgetary provision is achieved.
 - (i) Greenwood Park: Item 1, 9, 10, 11, 12, 6
 - (ii) Aubrey Green: Item 16, 25, 24, 21
 - (iii) William Marshall Park: Item 40, 41
 - (iv) Arlington Green: Item 56, 57, 54
 - (v) Canora Green: Item 62, 70, 66, 65

B14. AWARD OF CONTRACT

B14.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B14.2 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.

- B14.2.1 Without limiting the generality of B14.2, 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.
- B14.3 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.
- B14.4 Notwithstanding GC:4, the City will issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.
- B14.5 The Contract, as defined in GC:1.1, 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

C1. GENERAL CONDITIONS

C1.1 The *General Conditions for Construction Contracts* (Revision 2000 11 09) are applicable to the Work of the Contract.

C1.1.1 The *General Conditions for Construction Contracts* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

- D1.1 In addition to the *General Conditions for Construction Contracts*, these Supplemental Conditions are applicable to the Work of the Contract.
- D1.2 The General Conditions are amended by striking out "The City of Winnipeg Act" wherever it appears in the General Conditions and substituting "The City of Winnipeg Charter".
- D1.3 The General Conditions are amended by striking out "Tender Package" wherever it appears in the General Conditions and substituting "Bid Opportunity".
- D1.4 The General Conditions are amended by striking out "Tender Submission" wherever it appears in the General Conditions and substituting "Bid Submission".
- D1.5 The General Conditions are amended by deleting GC:6.16 and GC:6.17. The City of Winnipeg is now within the jurisdiction of the Manitoba Ombudsman pursuant to The Ombudsman Act.

D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of site improvements to five (5) existing park sites in the Wolseley area of Winnipeg.
- D2.2 The major components of the Work are as follows:

Site grading

- (b) Sidewalk paving and plaza development
- (c) Landscaping
- (d) Fencing
- (e) Timber steps and metal railings
- (f) Park sign posts.

D3. CONTRACT ADMINISTRATOR

- D3.1 The Contract Administrator is Ken Rech Landscape Architects Inc., represented by:
Ken Rech
Landscape Architect
1480 Wellington Crescent, Winnipeg, Manitoba, R3N 0B3
Telephone No. (204) 489-6616
Facsimile No. (204) 489-6852
- D3.2 At the pre-construction meeting, Ken Rech will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D4. CONTRACTOR'S SUPERVISOR

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

D5. NOTICES

- D5.1 Except as provided for in GC:23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.
- D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3, D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.
- D5.3 All notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:
- The City of Winnipeg
Chief Administrative Officer Secretariat
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: (204) 949-1174
- D5.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:
- The City of Winnipeg
Corporate Services Department
Legal Services Division
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

SUBMISSIONS

D6. INSURANCE

- D6.1 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) all inclusive, with The City of Winnipeg being added as an additional insured, with a cross-liability clause, such liability policy to also contain a Contractual liability, an unlicensed motor vehicle liability and a products and completed operations endorsement to remain in place at all times during the performance of the Work and throughout the warranty period;
 - (b) automobile liability insurance for owned and non-owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- D6.2 Deductibles shall be borne by the Contractor.
- D6.3 The Contractor shall provide the City Solicitor with a certificate of insurance of each policy, in a form satisfactory to the City Solicitor, 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.

D6.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator.

D7. PERFORMANCE SECURITY

D7.1 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.

D7.1.1 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.

D7.2 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.

SCHEDULE OF WORK

D8. COMMENCEMENT

D8.1 The Contractor shall not commence any Work until he is in receipt of a Purchase Order from the Award Authority authorizing the commencement of the Work.

D8.2 The Contractor shall not commence any Work on the Site until:

- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence that the Contractor is 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;
 - (ii) evidence of the Workers compensation coverage specified in GC:6.14;
 - (iii) evidence of the insurance specified in D6;
 - (iv) the performance security specified in D7;
- (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.

D8.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the Purchase Order.

D9. SUBSTANTIAL PERFORMANCE

- D9.1 The Contractor shall achieve Substantial Performance within forty (40) consecutive Working Days of the commencement of the Work as specified in D8.
- D9.2 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.
- D9.3 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.

D10. TOTAL PERFORMANCE

- The Contractor shall achieve Total Performance within forty-five (45) consecutive Working Days of the commencement of the Work as specified in D8.
- D10.2 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 re-inspected.
- D10.3 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.

D11. LIQUIDATED DAMAGES

- 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 (\$500.00) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.
- D11.2 The amount specified for liquidated damages in D11.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Total Performance by the day fixed herein for same.
- D11.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D12. SCHEDULED MAINTENANCE

- The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:
- (a) Two year tree maintenance as specified in E29;
- D12.2 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

D13. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

Further to GC:6.26, 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).

WARRANTY

D14. WARRANTY

D14.1 Notwithstanding GC:13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter, except where longer warranty periods are specified in the respective Specification sections, unless extended pursuant to GC:13.2.1 or GC:13.2.2, in which case it shall expire when provided for there-under.

D14.1.1 For the purpose of Performance Security, the warranty period shall be one (1) year.

D14.2 Notwithstanding GC:13.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.

D14.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in GC:13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See D7)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____.)

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

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

_____ day of _____, 20____, for:

BID OPPORTUNITY NO. 104-2006

WOLSELEY AREA – RIVERBANK ACCESS PARK IMPROVEMENTS

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)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)**
(See D7)

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 104-2006
WOLSELEY AREA – RIVERBANK ACCESS PARK IMPROVEMENTS

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

The City of Winnipeg Standard Construction Specifications in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.

E1.1.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

E1.1.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.

E1.1.3 Further to GC:2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.

E1.2 The following Drawings are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
L1	Greenwood Park – Site Plans and Details
L2	Aubrey Green – Site Plans
L3	Aubrey Green – Miscellaneous Details
L4	Canora Green – Miscellaneous Site Plans and Details
L5	Canora Green – Fencing and Miscellaneous Details
L6	Wolseley Sites – Sign Post and Bench Anchoring Details
L7	William Marshall Park - Site Plans and Details
L8	William Marshall Park – Stair Sections/Elevations and Misc. Details
L9	Arlington Green – Site Plans
L10	Arlington Green – Site Step/Walk Sections

E2. WORK BY OTHERS

E2.1 Second Nature Landscaping will be working at the Canora Green site doing the following work: shrub bed topsoil; plant material, and wood chip mulch. Second Nature has already installed the tree plant material. The Contractor is to co-ordinate their Work, to allow Second Nature access to his work area, prior to installing the finish surface materials.

E2.2 The City of Winnipeg will be supplying the birdhouse, metal sign, brackets, and mounting hardware for the steel sign posts, as shown on drawing L6, at no cost to the Contractor. The Contractor shall install the above noted products.

E3. DEPARTMENT OF FISHERIES AND OCEANS JURISDICTION

E3.1 The Contractor is made aware that they will be working adjacent to the Assiniboine River, and as such, their construction may be monitored by the Federal Department of Fisheries and Oceans.

E3.2 The Contractor must not deposit or allow any site materials to erode and wash into the River, including any existing or newly installed ground materials.

E3.3 The Contractor shall erect a suitable silt fence/curtain, to prevent any materials from entering the river, where risk exists.

- E3.4 The Contractor shall accelerate all Work closest to the river in the Work schedule, during times of favourable weather.
- E3.5 Should the Contractor not provide adequate protection to prevent contaminants from entering the river, and should the Department of Fisheries and Oceans levy fines on this project, the Contractor will be responsible for paying for any fines assessed against the City of Winnipeg or Ken Rech Landscape Architects Inc.
- E3.6 Measurement and Payment.
- (a) No separate payment will be made for erosion control measures.

E4. LAYOUT OF WORK

- E4.1 The Contractor shall set control lines and bench marks by means of stakes, buoys or marks and the Contractor shall make the completed Works conform to the lines and marks thus indicated. The Contractor shall furnish all other lines and levels required. The Contractor shall be responsible for the careful preservation of all stakes and marks. Care must be taken that the Contract Administrator be notified immediately of the disturbance of any such stakes or marks; the cost of correcting any errors arising out of neglect of the Contractor or his agent or his employees, 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.
- E4.2 The City of Winnipeg Survey Branch will inspect each site prior to construction commencing and verify all legal survey pins are in place and not damaged. Any damage to the pins by the Contractor, will have to be rectified to the satisfaction of the City of Winnipeg, and all associated costs paid for by the Contractor. For information contact Rod Davis at tel: 986-4826.
- E4.3 All layout Work shall be inspected and approved by the Contract Administrator prior to construction. Items indicated to be field located are to be roughly located by the Contractor, and approved by the Contract Administrator. The Contract Administrator may also roughly lay out the shapes or locations of items, for further refinement by the Contractor.
- E4.4 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 of Winnipeg on account of any alleged inaccuracies. If any error is suspected in the plans, 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.
- E4.5 All shapes laid out by the Contractor must be within the area allowance for all items shown in the Unit Price Forms.
- E4.6 All proposed tree planting locations shall be staked with minimum 610mm height vertical markers, and be approved by the Contract Administrator prior to excavating the tree pit.
- E4.7 The Contractor shall locate and protect all underground utilities prior to commencing construction.

E5. EXISTING SURVEY INFORMATION

- E5.1 Existing site photos are available for viewing in the Contract Administrator's office.

E6. SITE ACCESS

- E6.1 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.
- E6.2 All necessary precautions shall be exercised by the Contractor so as not to remove, disturb, or damage any existing trees, shrubs, sod, pavements, streets, roads, boulevards, poles, hydrants, water pipes, gas pipes, electrical wires, cables, conduits, sewers or other existing facilities and equipment at the Site of the Work. For all damage incurred thereto in the performance of the Work, the Contractor shall upon instructions from and to the satisfaction of the City thereof, either replace and repair such damage, whichever may be deemed necessary in the opinion of, and acceptable to, the City thereof 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.
- E6.3 The Contractor's operations shall be limited to the minimum area necessary for undertaking the Work and he shall be responsible for all damage resulting from his Work on private property. The Contractor shall take such measures as are necessary to ensure safe and convenient pedestrian ingress and egress is maintained to private properties while he is Working near them. Any damage caused by the negligence of the Contractor or his Subcontractors to the adjacent Works or properties, shall be promptly repaired by him at his own expense, to the satisfaction of the Contract Administrator.
- E6.4 Care shall be taken to protect existing trees and their root systems from damage, compaction, and contamination resulting from construction to the satisfaction of the Contract Administrator. No heavy equipment shall be driven or parked on the area within the drip line of any trees.
- E6.5 Access to the Work areas shall be as noted below, unless approved otherwise by the Contract Administrator:
- (a) Greenwood Park: off of Wolseley Street, via the new park entrances.
 - (b) Aubrey Green: via the existing pumping station service road.
 - (c) William Marshall Park: via Dominion Street roadway.
 - (d) Arlington Green: via Arlington Street roadway.
 - (e) Canora Green: via Wolseley Street, the new park entranceway.

E7. PROTECTION OF EXISTING TREES

- E7.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing boulevard trees, and trees within the Site, within the limits of the construction area. If the Contractor requires further information on these specifications, contact the City of Winnipeg Forestry Branch at 986-2004.
- (a) For trees greater than 100 mm in diameter, attach wood strapping material having a minimum thickness of 25 millimetres and minimum length of 2440 millimetres around the tree trunks in a manner that will not harm the trees. Do not use nails or other fasteners that penetrate the tree trunk. The width of the strapping may be reduced to suit tree being protected. Length of strapping may be reduced to suit tree being protected as approved by the Contract Administrator.
 - (b) For trees less than 100 mm in diameter, install PVC safety fencing around the tree to a 2.0 metre radius complete with installation hardware, to adequately support the safety fence. The 2.0 metre radius safety fence may be reduced to suit the tree being protected as approved by the Contract Administrator.
 - (c) Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the Work. Equipment shall not be parked, repaired, refuelled;

construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of the trees. The dripline of a tree shall be considered to be the entire ground surface located directly beneath the tree, from the trunk to 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.

- (d) Repair, replace and maintain tree protection materials during construction until such time no equipment will be working in the area.
 - (e) Remove safety fencing and strapping material without harming the trees as soon as the construction and restoration Work is complete.
- E7.2 Obtain approval from the Contract Administrator to excavate within 2.0 metres of a tree.
- E7.3 Excavate in a manner to minimize damage to the tree root systems. Keep exposed roots in excavations and trenches moist or shaded. If stockpiling of excavated soil material is required, stockpile in areas away from the tree roots.
- E7.4 Prune exposed roots with equipment such as chain saws, root cutters or other methods acceptable to the Contract Administrator in a manner that will leave a neat, clean root end.
- E7.5 Take precautions to ensure tree limbs overhanging the Work area are not damaged by construction equipment. Pruning of overhanging or damaged limbs and branches and other unanticipated problems with trees during the construction of the Works, shall be done by a licensed Manitoba Arborist after consultation with the City of Winnipeg Forestry Branch. Contact Mr. Dave Domke at tel: 986-3701.
- E7.6 American Elm trees are not to be pruned between April 1st and August 1st and Siberian Elm trees between April 1st and July 1st of any year under the provisions of The Dutch Elm Disease Act. Contact Ms. Cheryl Henning at tel: 986-2036.
- E7.7 The City of Winnipeg Naturalist Branch, also has authority for Natural stands of forested/brush/native grass areas, and may also instruct the Contractor on protective measures to protect the forests
- E7.8 Further to the Naturalist requirements the Contractor must set up a temporary orange safety fence to define the agreed upon Work area to ensure that additional damage does not occur to adjacent vegetation. Damage to vegetation beyond the defined Work area will result in damage charges of \$10.00 per square metre. Any damage to established trees will result in additional charges based on the Forestry Branch assessment of the tree valuation.
- E7.9 All damage to existing trees caused by the Contractor shall be repaired to the requirements and satisfaction of the Contract Administrator and the Forestry Branch. Damages must be repaired by an Individual with a Manitoba Arborist Licence or by the Forestry Branch.
- E7.10 The Forestry Branch will remove and replace any trees deemed to have died or that are dying due to damage from carelessness during construction. Removal and replacement costs will be determined by size, market price of the largest transplantable tree of same or different species and may include appraised value of the existing tree as determined by current International Society of Arboriculture evaluation procedure presently used by the Forestry Branch in conjunction with the City's Claims Branch. Estimated replacement cost of a 250 and 600 millimetre diameter American Elm, on a boulevard, based on an appraised value, is approximately \$4,700.00 and \$27,000.00 respectively.
- E7.11 Protection of existing trees, repair of trees and pruning of damaged limbs will not be measured for payment and is to be included with the Underground or Surface Works. Removal and replacement of existing trees by the Forestry Branch deemed to have died or that are dying due

to damage from carelessness during construction, will be at the Contractor's cost. The Contractor will be invoiced for the cost, or have the cost deducted from any payments owing.

E8. DEMOLITION AND SALVAGE

- E8.1 In general terms the scope of Work under demolition and salvage phase of Work, is as listed below for each site.
- (a) Greenwood Park:
 - (i) Salvage and relocation of ten wood bollards.
 - (b) Aubrey Green:
 - (i) Salvage of interlocking paving, three (3) benches.
 - (ii) Removal of timber edging, granular sub base.
 - (iii) Relocation of one picnic table.
 - (c) William Marshall Park:
 - (i) Removal of existing metal guard rail, posts and footings.
 - (ii) Removal of existing wood steps and footings
 - (iii) Removal of fifteen (15) precast concrete pavers
 - (iv) Relocation of one traffic sign
 - (v) Salvage of five (5) benches.
 - (vi) Removal of four (4) small sections of existing concrete curb to permit installation of the new Roman Stone planter wall.
 - (d) Arlington Green:
 - (i) Relocate two (2) shrubs.
 - (e) Canora Green:
 - (i) Removal of wire mesh fence and dead tree brush stockpile
- E8.2 Materials which are shown to be salvaged but not reinstalled are to be delivered to the City of Winnipeg storage facility. Location will be determined at the start up meeting.
- E8.3 Duckbill anchors for reinstalling picnic table at Aubrey green shall be as manufactured by Foresight Products, model 68. Provide two anchors per picnic table.
- E8.4 The cost for the demolition Work or salvaging shall be included in the lump sum cost of the related site, and as identified in the Unit Price Forms.
- E8.5 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, which price shall include all costs for demolition and legal removal of the product from each site. The cost for salvaging items is to be included in the re-installation cost of the related item, or where the item is not to be reinstalled, it shall be included in the lump sum cost of the salvaged item.
 - (i) Greenwood Park, Reinstallation of wood bollards in item No: 2 – Relocate ten (10) existing wood bollards and associated chain.
 - (ii) Aubrey Green, item No: 15 – Salvage interlocking paving, 3 benches, remove timber edging and gravel paving, and relocate one (1) picnic table c/w duckbill anchors.
 - (iii) William Marshall Park, item No: 32 –Remove metal guardrail and posts, existing park name sign, fifteen (15) precast concrete pavers, existing wood

- steps and footings. Salvage five (5) benches and reinstall one (1) road end marker sign.
- (iv) Arlington Green, item No: 48 – Relocate two (2) shrubs.
 - (v) Canora Green, item No: 61 – Remove wire mesh fencing and dead brush. Salvage two (2) benches.

E9. ROUGH GRADING

- E9.1 In general terms the scope of Work under rough grading phase of Work, is as listed below for each site.
- E9.2 Greenwood Park:
- (a) Rough grading is limited to walkway and shrub bed excavation.
- E9.3 Aubrey Green:
- (a) Rough grading is limited to walkway and shrub bed excavation, and construction of one (1) sodded berm.
- E9.4 William Marshall Park:
- (a) Rough grading is limited to contouring the land around the new timber steps and seating plazas.
- E9.5 Arlington Green:
- (a) Rough grading is limited to contouring the land around the new timber steps and seating area, as well as excavation for the walkways and shrub beds.
- E9.6 Canora Green:
- (a) Rough grading is limited to contouring the land around the new viewing plaza, as well as excavation for the walkways and shrub beds.
- E9.7 All site areas shall have the sub-grade compacted to 95% Standard Proctor density below landscaped areas. Paved areas shall be compacted to 100% Standard Proctor density.
- E9.8 The cost for the Rough Grading Work shall be included in the lump sum cost of the related site, and as identified in the Unit Price Forms.
- E9.9 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, which price shall include all costs for excavation and legal removal of the product from each site, if required. Where a rough grading itemized price is not provided in the unit price form, the cost shall be included in the related new area of Work, or restoration item.
 - (i) Greenwood Park, excavation for granular paving in item No: 7 – Granular paving, 200mm depth, c/w rough grading.
 - (ii) Aubrey Green, item No: 19 – Construct one berm.
 - (iii) William Marshall Park, item No: 38 – Rough grading.
 - (iv) Arlington Green, item No: 49 – Rough grading.
 - (v) Canora Green, item No: 68 – Rough grading.

E10. SITE RESTORATION

E10.1 Total Performance of the Work shall not be attained until the Contractor has cleaned up the Site and has removed all plant, tools, equipment, waste, debris and surplus foundation earth to the satisfaction of the Contract Administrator. Unless otherwise specified, the Contractor shall restore all areas of the site beyond the established limit of Work, which have been disturbed by the Contractor's operations to as good as or better than the original condition to the satisfaction of the Contract Administrator. The Contractor shall pay all costs associated with this Work. No separate payment will be made for this Work.

E11. GRANULAR PAVING

E11.1 This Specification shall amend and supplement City Specification CW 3110-R9 Sub Grade, Su-Base, and Base Course Construction and CW-3150-R4 Gravel Surfacing. The Work to be done by the Contractor under this Specification shall cover all phases of supply and placement of crushed limestone surfacing materials necessary to install gravel paved walkways for Greenwood Park, Arlington Green, and Aubrey Green.

E11.2 New granular walkway paving shall consist of a 125 mm subbase depth of 39 mm diameter crushed limestone down, a 50 mm base depth of 19 mm diameter crushed limestone down, with a 25 mm capping depth of 6 mm diameter limestone dust.

E11.3 Install material to the depth and design elevations indicated on the Construction Drawings. Install only on clean unfrozen surface, properly shaped and compacted. Place the material using methods which do not lead to segregation or degradation of aggregate.

E11.4 The finished surface is to be within plus or minus 10 mm of established grade and cross section, but not uniformly high or low. Any surface irregularities shall be corrected by loosening and adding or removing material until surface is within specified tolerance.

E11.5 Walkways shall have a minimum 2% and maximum 3% cross slope installed on them so as not to pond water over the full walk width. Install cross slope in direction of drainage where existing land slopes.

E11.6 Unless noted otherwise in the Unit Price Forms or on the drawings, the Contractor is responsible for making all sodding repairs, as a result of the granular paving installations, at no additional cost to the City.

E11.7 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per square metre basis for the Items of Work listed below, which price shall include all costs for the walkway excavation, and granular paving.
 - (i) Greenwood Park, item No: 7 – Granular paving, 200 mm depth c/w rough grading and sodding repairs.
 - (ii) Aubrey Green, item No: 22 – Granular paving, 200 mm depth c/w rough grading and sodding repairs.
 - (iii) Arlington Green, item No: 50 – Granular paving, 200 mm depth c/w rough grading.

E12. INTERLOCKING PAVING

E12.1 Interlocking paving shall be installed in accordance with CW 3330-R3 Specification for Installation of Interlocking Paving Stones.

- E12.2 Granular base for interlocking paving varies from one site to another and shall consist of a 150 to 300 mm depth of granular paving topped with a 12 mm capping of levelling sand. See drawing details for various depths.
- E12.3 Granular paving shall be crushed limestone, sizes and depths noted on the drawings.
- E12.4 Type, size, colours and paving pattern are shown in the Details on the drawings. All paving stones shall be as manufactured by Barkman Concrete.
- E12.5 Edging for paving shall be "Snap Edge" or poured in place concrete as noted on the drawings.
- E12.6 Install granular sub-base for interlocking paving a minimum 150mm past all edges of the paving stones, to permit the snap edge to be installed on a compacted granular base.
- E12.7 Basis of Payment
- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per square metre basis for the Items of Work listed below, which price shall include all costs for the excavation, granular base, sand levelling base, interlocking paving, and Snap Edge retainer. The interlocking paving component of the two (2) viewing plazas at Aubrey Green and Canora Green is to be included in the lump sum cost of each viewing plaza.
 - (i) Aubrey Green, item No: 16 – Entry plaza interlocking paving, dtl. 3-L2.
 - (ii) William Marshall Park, item No: 33 – Interlocking paving, c/w Snap Edge pvc retainer.
 - (iii) Canora Green, item No: 62 – Interlocking paving, c/w Snap Edge pvc retainer.

E13. WOOD BOLLARDS

- E13.1 This Specification shall cover the supply and installation of new wood bollards as shown in Detail 9-L1 and located at Greenwood Park, Drawing L1. This specification shall also cover the relocation of existing wood bollards at Greenwood Park.
- E13.2 Materials
- (a) Granular backfill shall be 6mm diameter crushed limestone.
 - (b) Wood posts shall be green ACQ pressure treated pine, size shown on drawings.
 - (c) Chain shall be 6mm diameter galvanized coated.
- E13.3 Install bollard in 300mm diameter holes, minimum 900mm below grade, and backfill with compacted granular material in 150 mm lifts, installed completely up to finish grade.
- E13.4 Salvage existing wood bollards and associated chain, and install in new location. Supplement with additional new chain if salvageable length is insufficient to complete project. Fill original bollard hole locations with compacted sand.
- E13.5 Cost for new bollards is to be included in the Unit Price Forms and will be paid for on a lump sum basis and shall include all costs for the supply and installation of the wood bollard, excavation, backfill, removal of excavated material, and new chain.
- E13.6 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, which price shall

include all costs for the new wood bollard, excavation, backfill and removal and legal disposal of excavated material.

- (i) Greenwood Park, item No: 2 – Relocate 10 existing wood bollards and associated chain.
- (ii) Greenwood Park, item No: 3 – Supply and install 5 new wood bollards and associated chain.

E14. SUPPLY AND INSTALLATION OF SITE FURNITURE

E14.1 This specification will cover the salvage and reinstallation of one existing picnic table and associated duckbill anchor, and supply and installation of new benches at the various park sites.

E14.2 Materials

- (a) Benches shall be Victorian 5' (1525mm) , manufactured by Recycled Design, surface mount, powdercoated black frame, "Dura-wood" colour dark grey.. Distributed by Sudden Fun Recreation Equipment Ltd. Box 48298 Midlake R.P.O. Calgary, AB., T2X 3C7, Tel: 1-800-490-0501.
- (b) Concrete shall be in accordance with C.W. 2160-R6 Concrete for Underground Structures and Works.
- (c) Anchors for picnic tables shall be Duckbill Anchor Model 68-ATI as manufactured by Foresight Products, LLC Tel: 1-800-325-5360.
- (d) Anchors for benches shall be 6 m dia. by 89 mm long Hilti Quick bolts. Nuts shall be stainless steel "Vandalgard nuts" distributed by Airmasters Sales, Wpg. , Tel: 1-800-788-6805.

E14.3 Contractor shall salvage one (1) existing picnic table at Aubrey Green for reinstallation to the location shown in detail 2-L2.

E14.4 Picnic table shall be installed on relatively level ground. Secure picnic table to grade with two duckbill anchors per picnic table.

E14.5 Install new benches onto concrete paving or concrete blocks as shown in dtl. 1, 2 –L6, with bolts and Vandalgard nuts.

E14.6 Picnic Table Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a unit price basis for the Items of Work listed below, which price shall include all costs for salvaging the table, and supply and installation of two (2) duckbill anchors per table
 - (i) Aubrey Green, item No: 15 – Salvage interlocking paving, 3 benches, remove timber edging and gravel paving, and relocate one picnic table.

E14.7 Bench 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 for the bench, installation of the bench, including the concrete pads for benches and associated anchoring hardware. The lower riverbank area benches at William Marshall Park shall also include the cost of the associated granular paving.
 - (i) Greenwood Park, item No: 4 – Bench, surface mount, and item No: 5 – Bench, surface mount c/w 2 concrete pads.
 - (ii) Aubrey Green, item No: 20 – Bench, surface mount c/w 2 concrete pads.

- (iii) William Marshall Park, item No: 20 – Bench, surface mount c/w 2 concrete pads. and item No: 40 – Benches by Riverbank bottom, surface mount, c/w 2 concrete pads and associated gravel paving
- (iv) Arlington Green, item No: 52 – Bench, surface mount c/w 2 concrete pads.
- (v) Canora Green, item No: 69 – Bench, surface mount c/w 2 concrete pads.

E15. WOOD FRAME FENCING WITH CHAIN LINK MESH

E15.1 This Specification shall cover the supply and installation of the wood framed fencing complete with chain link mesh, as shown in Details 11-L5 and located at Canora Green.

E15.2 Materials

- (a) Granular backfill shall be 19mm diameter crushed limestone.
- (b) Wood posts shall be green ACQ pressure treated pine, size shown on drawings.
- (c) All fasteners shall be rustproof or galvanized coated and the size noted on the drawing.

E15.3 Install posts in 300mm diameter holes, minimum 1200mm below finish grade, and backfill with compacted granular material, installed up to finish grade.

E15.4 Shape wood post tops as shown on the drawing

E15.5 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per lineal metre basis for the Items of Work listed below, which price shall include all costs for the wood posts/rails, mesh, excavation, granular backfill and removal of excavated material
 - (i) Canora Green, item No: 66 – Supply and install wood frame/chain link mesh fence, dtl. 11-L5.

E16. ALUMINUM WROUGHT IRON STYLE FENCING

E16.1 This specification shall cover the supply and installation of aluminum fencing at Canora Green..

E16.2 Shop Drawings:

- (a) The Contractor shall furnish the Contract Administrator with three (3) copies of shop drawings for all aluminum fabrication. Two (2) approved copies will be returned to the Contractor.
- (b) Shop drawings shall indicate the aluminum layout and miscellaneous metal sizes, dimensions, bolt, drilling locations, connections, and information relevant to fabrication and erection of the aluminum fence.
- (c) Review of shop drawings in no way relieves the Contractor of the final responsibility for correctness of the dimensions, sizes, fabrication details, errors made therein or for changes made from the Contract Administrator's drawings and specifications not covered by the Contractor's written notification to the Contractor's written notification to the Contract Administrator.

E16.3 Materials:

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

- (b) Concrete:
 - (i) Concrete shall be in accordance with C.W. 2160-R6 Concrete for Underground Structures and Works.
- (c) Aluminum Fencing:
 - (i) Posts, pickets and horizontal bars and rings shall be aluminum alloy 6061-T6. Materials shall be sized as shown on the Drawings. Bases shall be aluminum alloy mounting plates. Ornamental archway posts shall be welded to base plates.
 - (ii) Colour shall be black.
- (d) Aluminum Finish:
 - (i) Finish exposed surfaces of aluminum components in accordance with the latest edition of the Aluminum Association Designation System for aluminum finishes.
 - (ii) Exposed aluminum section shall be given an anodic oxide treatment in accordance with Aluminum Association Specification AA-M12C22A42/44, (#29 Black) to obtain an architectural class 1 anodic colour coating.
 - (iii) Appearance and properties of anodized finishes designated by the Aluminum Association as Architectural Class 1 shall meet the requirements of CGSB 63-GP-2M+Amdt April, 1986 for coating Class 1.

E16.4 Methods:

- (a) Aluminum fencing and ornamental archway shall be constructed as per drawing details shown on sheet L5 and as located on detail 4-L4.
- (b) Workmanship shall be in accordance with industry standards, and quality control shall be exercised related to the assembly connections requirements, setting, welding and grinding, trimming, sandblasting, co-ordination of fasteners, alignments and adjusting.
- (c) Fabrication of all fence members shall be in accordance with the drawings. The Contractor shall verify that the dimensions suit the site measurements. The fencing shall be shop finished. The fence shall be installed straight and plumb as shown on the drawings.
- (d) All posts, except the ornamental archway posts, are to be pushed below grade into the existing soil. Prior to pushing the posts the Contractor shall water soak the soil to a 900 mm depth below grade with a Ross Root Feeder, or similar device, to allow the post to be easily pushed into grade without damage. It is recommended the top of the posts be longer than necessary, and any damaged portion trimmed off, to the required height.
- (e) All site welds or damaged to the paint finished is to be field touched up with paint to match the shop finish.

E16.5 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per lineal metre basis for fencing and a Lump Sum basis for the ornamental archway, which price shall include all costs of material, and installation of the fencing and ornamental archway. The ornamental archway lump sum cost shall include all concrete footings.
 - (i) Canora Green, item No: 64 –Supply and install aluminum wrought iron fence, dtl. 5-L5.
 - (ii) Canora Green, item No: 65 – Supply and install aluminum wrought iron archway, dtl. 1-5 L5.

E17. STEEL VEHICLE GATE AND BOLLARD

- E17.1 This specification shall cover the supply and installation of a steel vehicle gate and associated bollards at William Marshall Park.

E17.2 Shop Drawings:

- (a) The Contractor shall furnish the Contract Administrator with three (3) copies of shop drawings for all aluminum fabrication. Two (2) approved copies will be returned to the Contractor.
- (b) Shop drawings shall indicate the steel layout and miscellaneous metal sizes, dimensions, bolt, drilling locations, connections, and information relevant to fabrication and erection of the aluminum fence.
- (c) Review of shop drawings in no way relieves the Contractor of the final responsibility for correctness of the dimensions, sizes, fabrication details, errors made therein or for changes made from the Contract Administrator's drawings and specifications not covered by the Contractor's written notification to the Contractor's written notification to the Contract Administrator.

E17.3 Materials:

- (a) All materials supplied under this specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.
- (b) Concrete:
 - (i) Concrete shall be in accordance with C.W. 2160-R6 Concrete for Underground Structures and Works.
- (c) Steel:
 - (i) Materials shall be sized as shown on the Drawings.
 - (ii) All welds shall be continuous and ground smooth.
- (d) Steel Finish:
 - (i) All metal shall be galvanized finished after welding.

E17.4 Methods:

- (a) Steel vehicle gate and bollards shall be constructed as per drawing details shown on sheet L8 and as located on detail 2-L7.
- (b) Workmanship shall be in accordance with industry standards, and quality control shall be exercised related to the assembly connections requirements, setting, welding and grinding, trimming, sandblasting, co-ordination of fasteners, alignments and adjusting.
- (c) Fabrication of all gate and bollard members shall be in accordance with the drawings. The Contractor shall verify that the dimensions suit the site measurements. The fencing shall be shop finished. The gate and bollards shall be installed straight and plumb as shown on the drawings.
- (d) All underground utilities and survey monuments shall be located and protected prior to excavating for all footings.
- (e) All posts shall be set into wet concrete fill holes and securely braced plumb, and at the correct height above finish grade, using secure methods of temporary support and bracing. . Bracing shall remain in place for a minimum 48 hours. Vehicle gates shall not be installed until the concrete footings have cured a minimum 7 days.
- (f) All site welds or damaged to the galvanized finished is to be field touched up with paint to match the shop finish.

E17.5 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 steel bollards and a Lump Sum basis for the steel vehicle gate, which price shall include all costs of material, and installation of the bollards and steel vehicle gate, as well as asphalt patching to the existing roadway.

- (i) William Marshall Park, item No: 35 –Supply and install steel bollards, dtl. 7-L8
- (ii) William Marshall Park, item No: 36 – Supply and install vehicle gate, dtl. 5, 6 L8.

E18. STEEL SIGN POST AND CONCRETE BASE

- E18.1 This specification shall cover the supply and installation of a steel sign post with a concrete base at all five site locations, as shown on drawing L6.
- E18.2 The Contractor's Work will include installing a metal sign and birdhouse on each steel post. The metal sign, birdhouse, and mounting hardware will be supplied by others, at no cost to the Contractor. The Contractor will be responsible to pick up the materials from the City of Winnipeg storage yard (location unknown).
- E18.3 Shop Drawings:
- (a) The Contractor shall furnish the Contract Administrator with three (3) copies of shop drawings for steel post and custom finial top. Two (2) approved copies will be returned to the Contractor.
 - (b) Shop drawings shall indicate the steel layout and miscellaneous metal sizes, dimensions, bolts, welds, drilling locations, connections, and information relevant to fabrication and erection of the steel post.
 - (c) Review of shop drawings in no way relieves the Contractor of the final responsibility for correctness of the dimensions, sizes, fabrication details, errors made therein or for changes made from the Contract Administrator's drawings and specifications not covered by the Contractor's written notification to the Contractor's written notification to the Contract Administrator.
- E18.4 Materials:
- (a) All materials supplied under this specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.
 - (b) Steel post shall be as manufactured by Lumca Inc. model SP 05-16, colour Black. Ornamental steel pole base shall be Lumca-Inc. model WB-9, colour Black. Local product representative is R.D. Sales, 104-120 Fort Street, Winnipeg, Tel: 943-7090.
 - (c) Steel finial: is to be custom manufactured by the post manufacturer and finished to the quality control standards of the post, colour black.
 - (d) Concrete shall be the type indicated on drawing detail 7-L6.
 - (e) .Concrete paint shall be Cleveland Lithichrome. Inc., - Lithichrome Aerosol, colours to match City of Winnipeg logo.
- E18.5 Methods:
- (a) Steel sign post is to be installed on concrete footings. Shallow concrete base with pad type footing, detail 9-L6, is to be used at Arlington Green, do to conflicts with underground utilities. Concrete base with pile type footing, detail 7-L6, is to be used at the remainder of the sites.
 - (b) Workmanship shall be in accordance with industry standards, and quality control shall be exercised related to the assembly connections requirements, setting, welding and grinding, trimming, sandblasting, co-ordination of fasteners, alignments and adjusting.
 - (c) Fabrication of steel members shall be in accordance with the drawings. The Contractor shall verify that the dimensions suit the site measurements. The steel post shall be shop finished. The post shall be installed straight and plumb as shown on the drawings.

- (d) After the concrete base has cured, the entire visible surface area shall be lightly sandblasted. The lettering and logos are to be sandblasted into the concrete faces after the entire base has been lightly sandblasted.
- (e) All lettering and logo templates and placement of the templates are to be approved by the Contract Administrator, prior to sandblasting the concrete. Lettering and logos are to be sandblasted 3mm below the concrete surface prior to painting.
- (f) Painting shall be done while the logo and lettering templates are still adhered to the concrete. Provide a minimum of 2 coats of paint, until the colours are solid. After the paint has cured coat with a transparent outdoor epoxy sealer.

E18.6 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, which price shall include all costs of concrete footings, metal post, and sandblasted coloured lettering and logos.
 - (i) Greenwood Park, item No: 6 –Steel sign post and concrete base, drawing L6
 - (ii) Aubrey Green, item No: 21 –Steel sign post and concrete base, drawing L6
 - (iii) William Marshall Park, item No: 41 –Steel sign post and concrete base, drawing L6
 - (iv) Arlington Green, item No: 54 –Steel sign post and concrete base, drawing L6
 - (v) Canora Green, item No: 70 –Steel sign post and concrete base, drawing L6

E19. POURED IN PLACE CONCRETE EDGING

E19.1 This specification covers the supply and installation of the concrete curb, for the interlocking paved plaza, at Canora Green as shown in detail 7-L4 and located on drawing detail 3, 4 –L4.

E19.2 Materials

- (a) Concrete:
 - (i) Concrete shall be in accordance with C.W. 3240-R6 Renewal of Existing Curbs.
- (b) R-bar shall be sizes noted on the drawings.
- (c) Granular base shall be crushed limestone, sizes and depth noted on the drawings.

E19.3 The Contractor shall install concrete curb to the shape, sizes, and finish grade elevations shown on the Drawings.

E19.4 Provide 20 mm round over edges on top two edges where concrete is exposed.

E19.5 Trowel finish concrete and provide light sandblast finish to all exposed surfaces.

E19.6 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per lineal metre basis, which price shall include all costs of excavation, granular base, concrete wall and sandblast finishing.
 - (i) Canora Green, item No: 63 – Supply and install 200 x 400 concrete curb, dtl 7-L4.

E20. CONCRETE CURB REPLACEMENT

E20.1 This specification covers the supply and installation of the concrete curb at William Marshall Park, as shown in detail 4-L8 and located on drawing detail 2 –L7.

E20.2 Curb installation shall be in accordance with SD 205 Barrier Curb (Dowelled).

E20.3 Materials

(a) Concrete:

- (i) Concrete shall be in accordance with C.W. 3240-R6 Renewal of Existing Curbs.

(b) Asphalt

- (i) Asphalt shall be in accordance with C.W. 3410-R7 Asphalt Concrete Pavement Works.

E20.4 The Contractor shall sawcut and remove the existing asphalt paving where the new concrete curb will be installed.

E20.5 The new concrete curb shall be installed in accordance with City Standards.

E20.6 Once the concrete curb has been installed the Contractor shall patch the existing asphalt damage, matching the thickness of the asphalt by the new curb.

E20.7 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per lineal metre basis, which price shall include all costs of removal of the existing asphalt paving, new concrete curb installation and patching of the asphalt roadway.
- (i) William Marshall Park, item No: 34 – Supply and install new conc. Road curb c/w asphalt patching.

E21. PATTERNED/STAMPED CONCRETE PAVING

E21.1 Concrete paving shall be supplied and installed in accordance with City of Winnipeg's Standard Construction Specification CW 3310-R10.

E21.2 Concrete paving shall be poured in place and constructed in accordance with the dimensions, and lines as shown on the details 2, 8 – L1 on the construction drawings.

E21.3 Concrete colour shall be an earthtone colour. Colour to be chosen at a later date. Colour shall be integral throughout paving.

E21.4 Granular base shall be 19 mm diameter crushed limestone down and be compacted to 100% Standard Proctor Density.

E21.5 Pattern shall be Seamless Slate.

E21.6 Sealer type shall be responsibility of Contractor. Provide two (2) coats of sealer, first coat after power washing, second coat 28 days after pouring of concrete.

E21.7 Install 125mm thick concrete paving on 100mm depth of 19mm diameter compacted crushed limestone down.

E21.8 Reinforce concrete with 10m r-bars at 600mm on centre both ways, minimum 50mm cover.

E21.9 Sawcut control joints in paving at maximum 2400mm on centre.

E21.10 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per square metre basis, which price shall include all costs of excavation, granular base, and new concrete paving.
- (i) Greenwood Park, item No: 1 – Pattern stamped concrete paving.

E22. PRECAST CONCRETE RETAINING WALLS

E22.1 This specification covers the supply and installation of precast concrete retaining walls located at Aubrey Green, Canora Green as shown on drawing details 1-5 L3 and William Marshall Park as shown on drawing details 2-L7 and 4-L8.

E22.2 Materials

- (a) Precast concrete retaining wall shall be constructed with Barkman Concrete Roman Pisa 2 Roman Stones, Desert Buff in colour.
- (b) Granular base shall be 19 mm diameter crushed limestone
- (c) Filter fabric shall be Armtec 150 Nonwoven geotextile or approved equal in accordance with B5.
- (d) Adhesive shall be Snap Edge "Bond'Loc" or approved equal in accordance with B5.

E22.3 The Contractor shall install the concrete retaining walls to the shapes shown on the drawings

E22.4 Construct wall on compacted granular base or sand as noted on the drawing. Compact granular base to 95% Proctor Density. Ensure wall is constructed minimum one (1) full layer below finish grade.

E22.5 Install geotextile filter cloth where topsoil shrub beds will backfill the planter walls.

E22.6 Glue all layers of the wall together with a double bead, minimum 6mm dia. bead, of adhesive. Glue top cap to wall with double bead, minimum 12mm dia. bead, of adhesive, including adhesive beads on sides of all caps.

E22.7 Fastening of all retaining wall blocks and caps is to be warranted for a full five (5) years, against separation. Five year warranty does not have to be covered beyond one (1) year performance bond term. Repair and replace any blocks which become loose or missing during warranty period.

E22.8 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 each location. The Aubrey Green and Canora Green Work is to be included in the lump sum cost of the Viewing Plazas at those sites. The price shall include all costs of excavation, granular base, new concrete wall, granular backfill and filter fabric.
 - (i) Aubrey Green, item No: 17 – Viewing Plaza: Interlocking paving c/w roman stone retaining walls, dtl. 1-5 L3.
 - (ii) Canora Green, item No: 71 – Viewing Plaza: Interlocking paving c/w roman stone retaining walls, dtl. 1-5 L3.
 - (iii) William Marshall Park, item No: 42 – Precast concrete retaining wall.

E23. TIMBER STEPS

E23.1 This Specification shall cover the supply and installation of new wood steps at William Marshall Park (drawing L7 and L8) and Arlington Green (drawing L9 and L10).

E23.2 Related Work

- (a) Demolition and Salvage, section E8.
- (b) Rough Grading, section E9.
- (c) Granular Paving, section E11
- (d) Galvanized Steel Step Railings, section E24

E23.3 Materials

- (a) Granular backfill and tread paving shall be 19 mm diameter crushed limestone.
- (b) All wood shall be green ACQ pressure treated pine, size shown on drawings.
- (c) End cut preservative shall be as manufactured and recommended by wood preservative manufacturer.
- (d) Nails for securing timbers shall be 250 mm long ardox or flat headed spikes.
- (e) Duckbill anchors shall be as manufactured by Foresight Products Inc., model 88.

E23.4 Contractor to install timber steps at William Marshall Park with solid timber treads (no space between timbers) as shown on drawings L7 and L8. Bottom of timber steps is to be located further north than existing steps as shown in detail 2-L7.

E23.5 Steps at Arlington Green are to consist of a combination of tread widths, and the tread width shall be adjusted to match the existing profile and slope of the land. See detail 2-L9 for various tread widths and types.

E23.6 Bottom of timber step at Arlington Green required four (4) duckbill anchors to secure steps to grade, to prevent lifting of the steps during high water. See detail 1-L10 for location of anchors. Duckbill anchor cable shall be secured wrapped around timbers, and then fastened to timbers with 25mm long chicken wire type staples, to tighten any slack in the cable. Cable shall not have any free movement or play in it.

E23.7 All steps shall be installed on and backfilled with compacted crushed limestone down.

E23.8 All wood cuts are to be treated with one coat of end cut preservative.

E23.9 All timbers shall be nailed together with a minimum 2 spikes spaced a maximum of 1800 mm apart per timber. Where timbers are longer add additional spikes so as not to exceed 1800 mm length. Where timber joints occur below top layer to timber, install spikes 150 mm either side of the joint.

E23.10 Stagger corner connections from one layer to another to interlock layers.

E23.11 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, which price shall include all costs for the excavation, granular base, timber steps, granular paving, and duckbill anchors. The cost shall also include the metal railings specified in section E25.
 - (i) William Marshall Park, item No: 45 – Supply and install timber steps c/w metal railings.
 - (ii) Arlington Green, item No: 55 – Supply and install timber steps c/w metal railings and associated gravel treads.

E24. GALVANIZED STEEL STEP RAILINGS

E24.1 This specification shall cover the supply and installation of steel hand railings at William Marshall Park, and Arlington Green timber step locations, as shown on drawings L7 – L10.

E24.2 Standards:

- (a) All metal railings shall be in accordance with C.W. 3550-R2 Chain Link Fencing sizing, finishes and welding.

E24.3 Materials:

- (a) All materials supplied under this specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.
- (b) Metal posts and railings:
 - (i) Concrete shall be schedule 40 galvanized steel, sizes as noted on the drawings.
- (c) Steel fasteners:
 - (i) All fastening hardware shall be galvanized coated or rust proof.
 - (ii) Post sleeve brackets shall be minimum 75 mm wide
 - (iii) Lag bolts shall be 9 mm diameter by 89 mm length.
- (d) Weld touch up finish:
 - (i) All welds shall be continuous and ground smooth.
 - (ii) Paint shall be Zinc pigmented and approved by the Contract Administrator.

E24.4 Methods:

- (a) All underground utilities and survey monuments shall be located and protected prior to installing posts.
- (b) All posts shall be pushed a minimum 1500 mm below finish grade, and be installed plumb.
- (c) All hand rails shall be installed parallel to the step slope and the same height above the steps.
- (d) End railings at the foot and top of landings shall extend 300 mm past the last riser.
- (e) All railing to pipe connections shall be continuously welded and ground smooth.
- (f) Upper railing at William Marshall Park is to have weld beads installed on top of the railing as shown in detail 6-L7 to discourage skate boarding.
- (g) All posts shall be fastened to main step stringers with post sleeve brackets. Post sleeve brackets are to be fastened to main step stringers and not tapered side wall trim pieces.
- (h) All site welds or damaged to the galvanized finished is to be field touched up with two (2) coats of paint.

E24.5 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, which price shall include all costs of material, and installation of the metal railings and fasteners. The cost shall also include the timber steps specified in section E24.
 - (i) William Marshall Park, item No: 45 – Supply and install timber steps c/w metal railings
 - (ii) Arlington Green, item No: 55 – Supply and install timber steps c/w metal railings and associated gravel treads.

E25. TOPSOIL AND FINISH GRADING

- E25.1 This specification shall amend CW 3540-R4 Specification for Topsoil and Finish Grading for Establishment of Turf Areas.
- E25.2 Topsoil depths for areas to be sodded, are to be installed to a minimum 100 mm mechanically rolled compacted depth.
- E25.3 Basis of Payment
- (a) No separate payment will be made for topsoil and finish grading. The Contractor shall include any costs for these items of Work in with the sod price.

E26. SODDING

- E26.1 This specification shall amend CW 3510-R8.
- E26.2 The Contractor is made aware the installation of the granular walks at Greenwood Park and Aubrey Green will require sodding repairs along both edges of the installation. The Contractor will be responsible for these sodding repairs/costs, and no allowance has been made in the Unit Price Forms, for the sod areas along the walkways.
- E26.3 Basis of Payment
- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per metre basis for the Items of Work listed below, which price shall include all costs for the excavation, placement of topsoil, sod installation and thirty day sod maintenance period.. No separate payment will be made for sodding repairs along the granular walkways unless shown otherwise on the drawings.
 - (i) Aubrey Green, item No: 18 – Sod and topsoil
 - (ii) William Marshall Park, item No: 37 – Sod and topsoil
 - (iii) Arlington Green, item No: 52 – Sod and topsoil
 - (iv) Canora Green, item No: 67 – Sod and topsoil

E27. PLANT MATERIAL

- E27.1 Description: This specification shall cover the supply and installation of nursery grown trees, shrubs and shrub bed installation.
- E27.2 The City reserves the right to reduce the quantity of trees, shrubs and shrub beds installed in order to meet the budgetary constraints.
- E27.3 Planting of Canora Green is not included in the Contract.
- E27.4 Materials
- E27.4.1 General
- (a) Trees shall be the size and variety noted on the Plant List attached to the end of this specification section. Plant material which does not have the specified root ball diameter will be rejected.
 - (b) All nursery stock supplied shall be Canadian prairie nursery grown, of the species and sizes indicated on the drawings. Quality shall be in accordance with the latest "Guide Specification for Nursery Stock of the Canadian Nursery Trades Association".
 - (c) Any nursery stock dug from native stands, wood lots, orchards or neglected nurseries and which have not received proper cultural maintenance as advocated by the Canadian Nursery Trades Association, shall be designated as "collected plants". The

use of "collected plants" will not be permitted unless approved by the Contract Administrator.

- (d) The Contract Administrator reserves the right to inspect the plant material at their original source, and to instruct the supplier on root and branch pruning requirements.
- (e) Nomenclature of specified nursery stock shall conform to the International Code of Nomenclature for Cultivated Plants and shall be in accordance with the approved scientific names given in the latest edition of standardized Plant Names. The names of varieties not names therein are generally in conformity with the names accepted in the nursery trades.
- (f) Plants larger than specified may be used if approved by the Contract Administrator. The use of such plants shall not increase the Contract price.
- (g) All nursery stock shall be measured when the branches are in their normal position. Height and spread dimensions specified refer to the main body of the plant and not from branch tip.
- (h) Where trees are measured by calliper (cal.), reference is made to the diameter of the trunk measured 300 mm above ground as the tree stands in the nursery.
- (i) All nursery stock shall be well branched, true to type, structurally sound, possess a well developed, undamaged root system and shall be free of disease, insect infestations, rodent damage, sunscald, frost cracks and other abrasion or scare to the bark. All parts of the nursery stock shall be moist and show live, green cambium when cut.
- (j) All trees shall have one only, sturdy, reasonably straight and vertical trunk and a well balanced crown with fully developed leader. All evergreens shall be symmetrically grown and branched from ground level up, and must be balled and burlapped unless noted otherwise on the plant list. At least one plant of each variety supplied shall bear a tag showing both the botanical and common name of the plant.

E27.4.2 Protection of Stock

- (a) All nursery stock shall be well protected from damage and drying out from the time of digging until the time of planting on site. All roots shall be cleanly cut; split roots are not acceptable.
- (b) Nursery stock shall be transplanted with care to prevent damage. Branches shall be carefully tied in such a manner so as not to break or damage trunks. Points of contact with equipment shall be padded. All nursery stock, which cannot be planted immediately upon arrival at the site, shall be well protected to prevent drying out and shall be kept moist until commencement of planting.

E27.4.3 Topsoil Backfill Mix

- (a) Backfill mix shall be screened garden soil mixture of two parts black loam topsoil, one part milled peat moss and one part sharp sand.

E27.4.4 Stakes

- (a) T-rail iron stakes 40 x 40 x 5 x 2130 mm long, primed with 1 brush coat of black zinc rich plant paint to CGSB 1-GP-181B. Paint section of stake above ground with 1 coat of green enamel paint.

E27.4.5 Tree Rings

- (a) Fabricated from 3 mm galvanized wire encased in two ply reinforced 12 mm dia. rubber garden hose of equivalent.

E27.4.6 Wound Dressing

- (a) Horticulturally accepted non-toxic, non-hardening emulsion.

E27.4.7 Wood Chip Mulch

- (a) Shall be standard tree limbs and leaves chippings, containing a maximum of 5% conifer branches.

E27.5 Construction Methods

E27.5.1 General

- (a) Planting pits shall be excavated in a square shape with vertical sides to a depth and width amounting to twice the diameter of the root system. The minimum depth shall be 610 mm (24") and the minimum diameter shall be 1530 mm (5'). The excavated tree pits shall be refilled with backfill mix (E27.4.3). Hand dig pits where required to protect underground utilities.
- (b) Shrub beds shall be excavated with vertical sides to the width shown on the drawings, and to a depth of 400mm. The excavated shrub bed shall be refilled with backfill mix (E27.4.3) to a 300mm depth, and covered with a 100mm depth of wood chip mulch.

E27.5.2 Installation

- (a) Upon excavation of the tree pits, and protection of any underground utility lines, the holes shall be backfilled with a topsoil mixture to a depth to permit adequate installation and stabilization of the plant material.
- (b) Each balled specimen shall be handled with great care, to ensure that the root balls will not be broken. Burlap shall be folded back only at the top and sides. Broken roots of deciduous stock shall be pruned back prior to planting.
- (c) After inserting the tree and filling the planting hole with topsoil, water shall be poured in until the pit is thoroughly soaked. Filling of the hole shall then be completed and the fill-in soil shall be packed firmly around the roots, leaving a concave surface for convenient watering 75 mm below rounding and grade elevation. After filling, the planting shall be watered at frequent intervals.
- (d) Planting shall be done during periods suitable to weather conditions and locally accepted practice. All nursery stock shall be set plumb in the centre of pits and at levels as shown on the planting details after settlement has taken place.
- (e) Nursery stock shall be faced to give the best appearance or relationship to adjacent structures and to the approval of the Contract Administrator.
- (f) Wood chip mulch shall be installed over the tree rootball as shown on the drawings.

E27.5.3 Pruning

- (a) All deciduous trees shall be pruned by a licensed Manitoba Arborist, immediately after planting. The amount of pruning shall be limited to the minimum necessary to remove dead or injured branches and to compensate for the loss of roots as a result of transplanting operations. Pruning shall be done in such a manner as to preserve the natural character of the plants. Leaders shall not be removed. Only clean, sharp tools shall be used. All cuts shall be clean and flush, leaving no stubs. Cuts, bruises or scars on the bark shall be traced back to living tissue and removed. The affected areas shall be shaped so as not to retain water and all cuts of more than 25 mm in diameter shall be painted with approved tree paint.

E27.5.4 Staking

- (a) All trees shall be staked using metal T-Bar stakes. The number of stakes required per tree is shown in the Plant List. The tree trunk shall be completely encircled and protected with two rubber tree rings and secured to each tree stake. Top of each tree stake shall be at the same elevation above finished grade, approximately 1200 – 1500 mm height. At the end of the Two year maintenance period the Contractor is to remove the tree stakes and associated fasteners.

E27.6 Guarantee of Nursery Stock

- (a) The Contractor shall agree and guarantee to replace and replant any nursery stock found dead and/or in poor condition within two years from the date of the Certificate of Total Performance, at his cost. "Poor condition" shall be interpreted as meaning nursery stock on which branches are dying, or have not shown satisfactory growth of leaves. All replacement plants shall be installed within five (5) working days from the date of notification from the City, unless the City extends the time period, as a result of seasonal or climatic considerations.
- (b) All required replacements shall be by plants of at least the same size and species as specified, and shall be supplied and planted in accordance with the original drawings and Specifications, and the replaced material shall carry an additional two-year guarantee and maintenance period. All trees must be in a healthy conditional for a full two years before the warranty will be considered fulfilled.

E27.7 Plant Material Basis of Payment

- (a) The supply and installation of Plant Material will be paid for at the Contract unit price for each tree and shrub, measured as specified herein, which price shall be payment in full including all costs for the tree, shrub, tree pit and topsoil backfill, tree stakes, tree rings, pruning, two year maintenance, and all other items incidental to the Work included in this Specification.
 - (i) Greenwood Park, items No: 9 to 14 – species and quantities as noted in Unit Price Forms
 - (ii) Aubrey Green, items No: 24 to 31 – species and quantities as noted in Unit Price Forms
 - (iii) William Marshall Park, items No: 46 to 47 – species and quantities as noted in Unit Price Forms
 - (iv) Arlington Green, items No: 56 to 59 – species and quantities as noted in Unit Price Forms

E27.8 Shrub Bed and Wood Chip Mulch Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, per square metre, which price shall be payment in full including all costs for the excavation of the shrub bed, installation of the topsoil, and installation of the wood chip mulch.
 - (i) Greenwood Park, item No: 8 –Shrub bed: 300 mm depth topsoil and 100 mm depth wood chip mulch.
 - (ii) Aubrey Green, item No: 23 – Shrub bed: 300 mm depth topsoil and 100 mm depth wood chip mulch
 - (iii) William Marshall Park, item No: 43 – Shrub bed: 300 mm depth topsoil and 100 mm depth wood chip mulch
 - (iv) Arlington Green, item No:60 - Shrub bed: 300 mm depth topsoil and 100 mm depth wood chip mulch

E28. TREE MAINTENANCE SCHEDULE

E28.1 Description: This specification shall cover the landscape maintenance requirements for all trees and associated tree pits, shrubs and associated shrub beds.

E28.2 Related Work: Plant material and tree pits are specified elsewhere in this Specification and form an integral part to all Work described herein.

E28.3 Maintenance Period: Undertake maintenance from the date of installation for a period of two years past the date of Total Performance.

E28.4 Description of Work

(a) Maintain trees shown on the drawings, to the satisfaction of the Contract Administrator

(b) Work includes:

- Fertilizing
- Watering
- Weed Control of tree pits, wood chip mulch areas
- Pest and disease control
- Pruning
- Mulching
- Tree support and tie adjustment
- Winter protection

E28.5 Protection

(a) Prevent damage to fencing, other trees, landscaping, bench marks, building, pavement, surface and underground utility facilities.

E28.6 Materials

(a) Materials are to conform to the requirements of related specifications.

E28.7 Maintenance Requirements

(a) Condition of Equipment

Prior to the commencement of tree and shrub planting, the Contractor will be required to arrange to have the equipment to be supplied under this Contract inspected by the Contract Administrator to verify that the equipment is in good operating condition and meets the requirements of the Specifications.

(b) Replacement Equipment

The supply of replacement equipment of equal or larger size, if regular units are under repair, will be the responsibility of the Contractor.

(c) General Workmanship

Program timing of operations to growth, weather conditions and use of site.

Do each operation continuously and complete within reasonable time period.

Store equipment and materials off-site.

Collect and dispose of debris or excess material on daily basis.

E28.8 Fertilizing

- (a) Apply fertilizer no later than May 30th of each maintenance year.

E28.9 Watering

- (a) Apply water as required to supplement rainfall and to maintain optimum growing conditions. In general, water once a week to achieve rates as indicated below. Allow soil to dry adequately between watering to prevent over-saturation without creating water stress.
- (b) Subject to the requirements above, the Contractor must water at least once a week inclusive between May 1st and October 30th. A complete record is to be kept of each series of waterings for all planted and transplanted trees, noting: 1) location, and 2) date of watering. This record is to be given to the Contract Administrator when requested.
- (c) Apply 40 litres of water per 25mm caliper, per application using deep root feeder or low pressure open flow nozzle and hose. The water stream must not gouge out a hole in the soil and mulch.
- (d) Apply 4 litres of water per shrub per application.
- (e) The Contractor shall maintain all sodded areas for 30 days from the Contract completion, until such time as it is accepted by the Contract Administrator.

E28.10 Weed Control

- (a) Maintain surface of tree pit, shrub bed and mulched areas, free of weeds. Do not allow weeds to establish for a period longer than one (1) week.
- (b) Do not use dicamba and picloram solutions near trees.

E28.11 Pests and Diseases

- (a) Obtain written approval of Contract Administrator prior to using any pesticide.
- (b) Control pests and disease through pruning or application of pesticides. Use species specific pesticides where possible. Use only pesticides of low mammalian toxicity. Strictly follow manufacturer's written instructions.

E28.12 Pruning

- (a) The Contractor shall provide a person with a valid Manitoba tree Pruner's License for each Work crew or Work site.
- (b) Prune trees as required to remove dead, broken or damaged limbs. Prune back to healthy growth while maintaining balanced crown shape.
- (c) Employ clean sharp tools. Make cuts coincident with the branch collar near the main stem or branch. Cuts must be smooth and sloping to prevent accumulation of water on cut. Do not leave little stumps ("horns") on trunks or main branches.
- (d) Prune trees according to accepted horticultural practices as outlined in the Pruning Manual, Publication No. 1505 by Agriculture Canada.

E28.13 Mulching

- (a) Add mulch as required to maintain 100 mm thickness.

E28.14 Tree Supports and Tie Adjustments

- (a) Maintain tree supports and ties in proper repair.
- (b) Remove supports and ties at end of two year maintenance period or earlier if directed by City.
- (c) Straighten any tree which is leaning.

E28.15 Winter Protection

- (a) Ensure adequate moisture in tree zones prior to freeze-up.
- (b) Apply anti-desiccant to evergreen trees susceptible to winter desiccation as directed by Contract Administrator.

E28.16 Maintenance Schedule

- (a) The Contractor shall provide a complete written maintenance schedule to the Contract Administrator prior to the commencement of the two year maintenance period, and must provide weekly reports of all maintenance to the City of Winnipeg, Forestry Department, within one week of the maintenance being provided.

E28.17 Maintenance Period

- (a) The two year maintenance period shall be based on a six month growing season per year. The two year maintenance program will consist of a total of 12 months of maintenance. In general the maintenance shall commence on May 1st and terminate on October 30th of each year. In the event of any early spring, whereby the weather conditions are conducive to plant growth, the Contractor shall start the maintenance period at such time as they deem necessary. However, the City of Winnipeg, Forestry Branch, must be notified prior to commencing the maintenance period. Where the maintenance Contract is started prior to May 1st, the actual number of days that the plant material is maintained prior to May 1st will be deducted from the October 30th completion period.

E28.18 Basis of Payment

- (i) No separate payment will be made for the two year maintenance Contract. The cost for all this Work is to be included in the unit price cost for each tree and shrub.

E29. WOOD CHIP MULCHED BEDS

E29.1.1 Description: This specification shall cover the installation of wood chip mulch at the Arlington Green timber steps, as shown in dtl. 4-L9.

E29.1.2 Wood Chip Mulch

- (a) Shall be standard tree limbs, chippings, containing a maximum of 5% conifer branches. .

E29.1.3 Install wood chip to a uniform 100 mm depth over all disturbed soil areas, after the soil has been graded smooth.

E29.2 Basis of Payment

- (i) Payment for Work specified under this Specification is to be included with the price of the timber steps and metal railings in item No: 55 of the unit price forms.