



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 434-2010

BROADWAY NEIGHBOURHOOD CENTRE GREENSPACE REDEVELOPMENT

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 BROADWAY NEIGHBOURHOOD CENTRE GREENSPACE REDEVELOPMENT

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, June 28, 2010.

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

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

B3. SITE INVESTIGATION

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

B4. ENQUIRIES

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

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

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

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

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

B5. ADDENDA

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

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

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

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

B5.2.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 8 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B14.
- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B6.10 Notwithstanding B6.2 to B6.9, and in accordance with B7.7, deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B14.1(a).

B7. BID COMPONENTS

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

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

- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B7.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B7.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg, MB R3B 1J1
- B7.5.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B7.6 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.7 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B14.1(a).
- B7.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to (204) 949-1178.
- B7.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.
- B7.8.2 Bids submitted by internet electronic mail (e-mail) will not be accepted.

B8. BID

- B8.1 The Bidder shall complete Form A: Bid, making all required entries.
- B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.
- B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

- B8.4 Paragraph 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.
- B8.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.
- B8.4.2 All signatures shall be original.
- B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B9. PRICES

- B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B9.1.1 Notwithstanding C12.2.3(c), prices on Form B: Prices shall include the Manitoba Retail Sales Tax (MRST, also known as PST), but exclude GST.
- B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B9.4 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. QUALIFICATION

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

- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba).

B10.4 Further to B10.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractors has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:

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

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

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

B11. OPENING OF BIDS AND RELEASE OF INFORMATION

B11.1 Bids will not be opened publicly.

B11.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>

B11.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>

B11.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B12. IRREVOCABLE BID

B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.

B12.2 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.

B13. WITHDRAWAL OF BIDS

B13.1 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.

- B13.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B13.1.2 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.
- B13.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B13.1.3(b), declare the Bid withdrawn.
- B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 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.

B14. EVALUATION OF BIDS

- B14.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity or acceptable deviation there from (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B14.2 Further to B14.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.
- B14.3 Further to B14.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.
- B14.4 Further to B14.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices adjusted, if necessary, as follows:
- (a) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder is within the budgetary provision for the Work, no adjustment will be made to the Total Bid Price; or
 - (b) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder exceeds the budgetary provision for the Work, the Total Bid Prices of all responsive Bids submitted by responsible and qualified Bidders will be adjusted by progressively deducting item(s) 26, 24, 47, and 31, in the order listed, until a Total Bid Price within the budgetary provision is achieved.
- B14.4.1 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.

B14.4.2 Further to B14.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B15. AWARD OF CONTRACT

B15.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B15.2 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.

B15.2.1 Without limiting the generality of B15.2, 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.

B15.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B14.

B15.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.

B15.4 Notwithstanding C4, the City will issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.

B15.5 The Contract, as defined in C1.1, in its entirety shall be deemed to be incorporated in and to form a part of the Purchase Order notwithstanding that it is not necessarily attached to or accompany said Purchase Order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of the redevelopment of three areas: turning an existing grassed area into Nature Grounds, converting an old asphalt area into Community Gardens, and Field Improvements to an existing active playing field.

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

- (a) Excavation and Disposal;
- (b) Raising one catch basin and lowering another;
- (c) Grading (including berm and swale formation);
- (d) Supply and Installation of Barkman Retaining wall;
- (e) Supply and Installation of boulder retaining/ seating wall;
- (f) Supply and Installation of boulder seating;
- (g) Supply and Installation of wood step post area;
- (h) Supply and Installation of sand play area;
- (i) Supply and Installation of granular pathway and seating areas;
- (j) Supply and Installation of pre-cast concrete paver seating areas;
- (k) Supply and Installation of dry stream;
- (l) Supply and Installation of boardwalk;
- (m) Supply and Installation of soil and sod;
- (n) Supply and Installation of site furniture, including mini-soccer goal posts;
- (o) Supply and Installation of shrub beds and associated plant material;
- (p) Supply and Installation of bollards;
- (q) Installation of wooden planter boxes;
- (r) Repairs to existing chain link fencing;
- (s) Supply and Installation of chain-link fencing, and;
- (t) Supply and Installation of baffle gate fencing (chain-link gate) and maintenance gate.

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is:

Shauna Prociuk
Urban Designer
City of Winnipeg
Parks, Riverbanks and Community Initiatives Branch
Planning and Land Use Division
Planning, Property and Development Department
15-30 Fort Street
Winnipeg, MB R3C 4X5
Telephone No. (204) 986-3938

Facsimile No. (204) 986-7524

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

D4. CONTRACTOR'S SUPERVISOR

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

D5. NOTICES

- D5.1 Except as provided for in C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.
- D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3, D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.
- D5.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:

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

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

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

SUBMISSIONS

D6. AUTHORITY TO CARRY ON BUSINESS

- D6.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D7. SAFE WORK PLAN

- D7.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D7.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgmt/Safety/default.stm>

D8. INSURANCE

- D8.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
 - (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- D8.2 Deductibles shall be borne by the Contractor.
- D8.3 The Contractor shall provide the Contract Administrator with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than seven (7) Calendar Days from notification of the award of Contract by Purchase Order.
- D8.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D9. PERFORMANCE SECURITY

- D9.1 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.
- D9.1.1 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.
- D9.2 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.

D10. SUBCONTRACTOR LIST

D10.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than seven (7) Calendar Days from notification of the award of Contract.

D11. DETAILED WORK SCHEDULE

D11.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) business days prior to the commencement of any work on the site but in no event later than the date specified in C 4.1 for the return of the executed contract.

D11.2 Detailed Work Schedule shall consist of the following dates:

- (a) Start date;
- (b) Excavation & disposal;
- (c) Rough Grading
- (d) Installation of Nature Ground components and sub-surface drainage;
- (e) Installation of boardwalk;
- (f) Installation of granular pathway and seating areas;
- (g) Installation of pre-cast concrete paver seating areas;
- (h) Installation of site furniture;
- (i) Installation of soil and sod;
- (j) Installation of shrub beds and associated plant materials;
- (k) Expected completion.

D11.3 Other milestone dates appropriate to this project should also be included to make the Contract Administrator Aware of them.

SCHEDULE OF WORK

D12. COMMENCEMENT

D12.1 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.

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

- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D6;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) COR certification number as specified in B10.4;
 - (iv) the Safe Work Plan specified in D7;
 - (v) evidence of the insurance specified in D8;
 - (vi) the performance security specified in D9;
 - (vii) the Subcontractor list specified in D10; and
 - (viii) the detailed work schedule specified in D11.
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D12.3 The Contractor shall commence work on site on or before **July 26, 2010**.

D12.4 The City intends to award this Contract by **July 19, 2010**.

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

D13. SUBSTANTIAL PERFORMANCE

D13.1 The Contractor shall achieve Substantial Performance by **October 12, 2010**.

(a) No extra working days will be available for inclement weather, such as rain or snow days. Inclement weather is to be taken into account within the Contractor's Work Plan.

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

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

D14. TOTAL PERFORMANCE

D14.1 The Contractor shall achieve Total Performance by **October 20, 2010**.

(a) No extra working days will be available for inclement weather, such as rain or snow days. Inclement weather is to be taken into account within the Contractor's Work Plan.

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

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

D15. LIQUIDATED DAMAGES

D15.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial 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 Substantial Performance during which such failure continues.

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

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

D16. SCHEDULED MAINTENANCE

D16.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

(a) Trees, shrubs and perennials as specified in E22; and

(b) Topsoil and Sod as specified in E23.

D16.2 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.

D17. SITE RESTORATION

D17.1 Total Performance of the Work shall not be attained until the Contractor has cleaned up the Site and has removed all tools, equipment, waste, debris and surplus foundation earth to the satisfaction of the Contract Administrator. Unless otherwise specified, the Contractor shall restore all areas of the Site beyond the established limit of Work, which have been disturbed by the Contractor's operations to as good as or better than the original condition to the satisfaction of the Contract Administrator. The Contractor shall pay all costs associated with this Work.

D18. EXISTING SERVICES AND UTILITIES

D18.1 No responsibility will be assumed by the City for correctness or completeness of the Drawings, when provided, with respect to the existing utilities, pipes or other objects either underground or on the surface; the City shall not be liable for the incorrectness and inadequacy thereof. It shall be the responsibility of the Contractor to determine the location of all such utilities, pipes and other objects and to make good any damage done to them.

D19. ACCESS TO SITE

D19.1 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.

D19.2 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.

D20. PERMITS, NOTICES, LICENSES, CERTIFICATES, LAWS AND RULES

D20.1 Further to C6.12, the Contractor shall give all necessary notices, obtain all necessary permits and pay all fees in order that the Work may be carried out. The Contractor shall submit all plans required by any inspection authority and obtain approval of same before proceeding with the Work, and pay any cost attached to the inspection of such plans.

D20.2 The Contractor shall comply with all laws, ordinances, rules and regulations that would relate to the Work.

D20.3 All notices, consents, approvals, statements, authorizations, documents or other communications to the City shall be submitted to the Contract Administrator.

D20.4 All Work shall be performed in compliance with the Manitoba Workplace Health and Safety Act.

D20.5 All Work shall be performed in compliance with the Manitoba Workplace Health and Safety Fall Protection guidelines.

D20.6 The Contractor and Sub-contractors must be fully aware of all Work involving hazardous materials. All Work must be performed in compliance with the Manitoba Department of Labour Workplace Health and Safety Guidelines and all other applicable codes. The Contractor is responsible for the immediate notification to the Contract Administrator of his/her encountering of suspected hazardous material during their course of Work.

D21. DAMAGE TO EXISTING STRUCTURES, TREES AND PROPERTY

D21.1 All necessary precautions shall be exercised by the Contractor so as not to remove, disturb, or damage any existing trees, shrubs, sod, pavements, streets, roads, boulevards, poles,

hydrants, water pipes, gas pipes, electrical wires, cables, conduits, sewers or other existing facilities and equipment at the Site of the Work. For all damage incurred in the performance of the Work (either directly or indirectly), the Contractor shall either replace and repair such damage, whichever may be deemed necessary in the opinion of, and acceptable to City of Winnipeg Contract Administrator, and the cost of which shall be borne entirely by the Contractor. The Contractor shall also indemnify and save harmless the City from all claims made directly or indirectly against it in respect to any such damage.

- D21.2 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing park trees within the limits of the construction area:
- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment within 2 metres of trees.
 - (b) Trees identified to be at risk by the Contract Administrator are to be strapped with 25x100x2400 wood planks, or suitable protection as approved by the Contract Administrator.
 - (c) Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches), with the outcome read in feet, from the closest edge of the trunk. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.
 - (d) Operation of equipment within the drip line of the trees shall be kept to a minimum required to perform the Work required. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the drip lines of trees. The drip line of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
- D21.3 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the City Forester or his/her designate.
- D21.4 No separate measurement or payment will be made for the protection of trees.

D22. PEDESTRIAN SAFETY AND TRAFFIC MANAGEMENT

- D22.1 Further to CW 1130-R1, 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 Sub-Contractors to the adjacent Works or properties, shall be promptly repaired by him at his own expense, to the satisfaction of the Contract Administrator.
- D22.2 Ambulance/ Emergency vehicle access must be maintained at all times.

D23. PROTECTION OF THE SURVEY INFRASTRUCTURE

- D23.1 Notwithstanding clause 4 "Protection of Survey Bars" of the Standard Provisions; Current legislation, The Surveys Act, places the onus on those undertaking construction to protect the Survey Infrastructure from damage as a result of their activity.
- D23.2 Further to C:6.26 (g), at least 72 hours prior to the commencement of the On-Site Work the Contractor shall contact the City of Winnipeg, Geomatics Services Branch at 986-4826 (8:00 am to 4:00 pm Monday to Friday excluding holidays) to obtain underground clearance. Geomatics Services will locate and mark all known outline survey monuments and geodetic control monuments and confirm the physical condition of those monuments upon completion of construction, at no cost to the Contractor.
- D23.3 Where a survey post, bar or control monument lies in the line of the proposed Work and must be disturbed, the Contractor shall provide the Contract Administrator with 48 hours notice to

permit referencing for future replacement, at no cost to the Contractor. Failure to provide the specified notice shall result in the Contractor paying for all costs associated with replacing or relocating the disturbed outline survey monuments and geodetic control monuments.

- D23.4 Survey monuments and geodetic control monuments at or adjacent to the Site, not in the line of the proposed construction that are damaged or disturbed by the Contractor shall be replaced or relocated by the City or its agent and all associated costs shall be paid for by the Contractor. An approximate estimate of the costs involved to restore a legal survey monument is \$1,000 per bar and \$3,000 per control monument. Contractors must ensure their landscaping and other subcontractors are aware of this clearance procedure and the potential restoration costs.
- D23.5 Where possible, amounts owed to the City in accordance with the above will be deducted from any payments to be made by the City to the Contractor.

D24. SITE ENCLOSURES

- D24.1 Temporary Site enclosures, as determined necessary at the pre-construction meeting, shall be erected and maintained as required for the duration of the construction period.
- D24.2 Site enclosures shall be considered incidental to the Contract Work.

CONTROL OF WORK

D25. JOB MEETINGS

- D25.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.
- D25.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D26. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D26.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

MEASUREMENT AND PAYMENT

D27. PAYMENT

- D27.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

D28. WARRANTY

- D28.1 Notwithstanding C13.2, 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 C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.
- D28.1.1 For the purpose of Performance Security, the warranty period shall be one (1) year.

FORM H1: PERFORMANCE BOND
(See D9)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

BID OPPORTUNITY NO. 434-2010

BROADWAY NEIGHBOURHOOD CENTRE GREENSPACE REDEVELOPMENT

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

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

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

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

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

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

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)
(See D9)**

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 434-2010
BROADWAY NEIGHBOURHOOD CENTRE GREENSPACE REDEVELOPMENT

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
B.22-G1A	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Overall Site Plan
B.22-G1B	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Existing Conditions & Removals
B.22-G1C	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Tree Protection Plan
B.22-G2	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Proposed Site Plan
B.22-G3A	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Proposed Grading Plan
B.22-G3B	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Subsurface Drainage
B.22-G4	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Limestone Retaining/ Seating Wall
B.22-G5	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Sand Play Details
B.22-G6	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Boardwalk Details
B.22-G7	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Paving Details
B.22-G8	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Planting Plan
B.22-G9	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Path and Seating Node Layout
B.22-G10	BROADWAY NEIGHBOURHOOD CENTRE Nature Grounds Development – Layout Plans 2
B.22-G11	BROADWAY NEIGHBOURHOOD CENTRE Community Garden Development – Existing Conditions & Removals
B.22-G12	BROADWAY NEIGHBOURHOOD CENTRE Community Garden Development – Proposed Plan
B.22-G13	BROADWAY NEIGHBOURHOOD CENTRE Community Garden Development – Layout Plans
B.22-G14	BROADWAY NEIGHBOURHOOD CENTRE Community Garden Development – Details
B.22-G15	BROADWAY NEIGHBOURHOOD CENTRE Soccer Field Redevelopment – Existing Conditions & Removals
B.22-G16	BROADWAY NEIGHBOURHOOD CENTRE Soccer Field Redevelopment – Grading

	Plan
B.22-G17	BROADWAY NEIGHBOURHOOD CENTRE Soccer Field Redevelopment – Site Improvements
SCD-648R	PARKWAY PATH ASPHALT
SCD-645R	PARK PATH CRUSHED LIMESTONE
SCD-119	WASTE RECEPTACLE METAL SLAT TYPE
SCD-106	WASTE RECEPTACLE EXPANDED METAL BASKET
SCD-130A	TACHE STYLE WHEELCHAIR METAL FRAME PICNIC TABLE
SCD-130	TACHE STYLE METAL FRAME PICNIC TABLE
SCD-501R	PREPARATION OF PLANTING AREA
SCD-517	STANDARD GUIDELINE FOR THE PLANTING OF TREES
SCD-633	CHAIN LINK FENCE ENTRANCE BAFFLE DETAIL
SCD-105AR	POST AND CHAIN FENCING
SCD-105BR	BOLLARD FENCING
SCD-653A	ACCESSIBLE PLANTER DETAIL 4'X8' - RAISED MULTI-LEVEL
SCD-653B	ACCESSIBLE PLANTER DETAIL 4'X13' - RAISED MULTI-LEVEL

Above Drawings are available on request in AutoCAD .dwg or Vectorworks format from the Contract Administrator.

E2. CRITICAL INSPECTION POINTS

E2.1 The Contractor shall contact the Contract Administrator for an inspection of the following items of Work before any further work occurs on that particular item:

- (a) rough grading;
- (b) excavation of subgrade before drainage pipe installed;
- (c) layout of paths and seating areas;
- (d) placement of boulders;
- (e) placement of topsoil, prior to sodding;
- (f) connections to catch basin, before excavated area is filled in.

E2.2 It is understood that certain of these items of work are time sensitive and thus the Contractor shall ensure that the Contract Administrator is given notice that this work will be occurring by the latest the morning of the day the work is expected to be ready for inspection. The Contract Administrator shall ensure if they are not available a designate shall be available to inspect the work.

E3. REMOVALS

E3.1 General Description

E3.1.1 This specification shall cover the removal and legal disposal of existing concrete slab, including subbase, located in Nature Grounds that is identified on plan to be removed. All extraneous materials are to be removed from the Site and disposed of in a safe and legal manner. This specification shall amend and supplement City of Winnipeg Standard Construction Specifications CW 3110-R12. The Work to be done by the Contractor under this specification shall include all labour, equipment and material necessary for and incidental to the satisfactory performance and completion of the Work herein specified.

E3.2 Materials

E3.2.1 Removals include the removal of items as indicated on the Drawings and as directed by the Contract Administrator. Do not disturb adjacent items designated to remain in place.

E3.3 Construction Methods

- E3.3.1 Removals include the removal of all footing, backfilling holes with clean earth fill and compact to 98% SPD.
- E3.3.2 The Contractor shall ensure that upon completion of the removal operations, the Site shall be left free of any hazardous depressions and in a neat condition.
- E3.3.3 The Contractor shall dispose of all unsuitable and excess materials in accordance with City of Winnipeg Specifications. Disposal is incidental to the unit prices bid.

E3.4 Method of Measurement and Basis of Payment

- E3.4.1 Method of Measurement shall be as follows:
- (a) Removals will be measured on a lump sum basis for: "Remove concrete slab and sub-base" on Form B: Prices.
- E3.4.2 Basis of Payment shall be as follows:
- (a) Removals will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

E4. EXCAVATION & GRADING

E4.1 General Description

- E4.1.1 This specification shall amend and supplement CW 3110-R12 and CW 3170-R3. The Work of this section comprises the furnishing of all labour, equipment and materials required to complete the excavation and related Work including, but not necessarily confined to, the following:
- (a) Excavate to the limits shown on Drawings and to the depths necessary to achieve finish grade for:
- (i) Granular path and seating areas;
 - (ii) Planting beds;
 - (iii) Pre-cast paver areas;
 - (iv) Engineered wood fibre surfacing;
 - (v) Sand play area;
 - (vi) Woodchip surfacing in Community Gardens;
 - (vii) Sodded areas in Community Gardens; and
 - (viii) Asphalt path.
- (b) Grade site to the limits shown on Drawings and to the depths necessary to achieve finish grade for:
- (i) Soccer field; and
 - (ii) Nature grounds area, including berms and dry stream swale.
- E4.1.2 Excavation and Grading to include the removal of all extraneous materials from the Site and the disposal of these materials in a safe and legal manner. The Work to be done by the Contractor under this specification shall include all labour, equipment and material necessary for and incidental to the satisfactory performance and completion of the Work herein specified.
- E4.1.3 Grading to include the removal of the sod layer, the movement of earth to the specified grades as indicated in the Drawings, the import of fill if required, and the legal disposal of excess fill if necessary.
- (a) The removal of the sod layer shall be done through the stripping of the top layer of sod in all areas within 5 metres of the existing playstructure.

- (i) In all other areas this work can occur through the use of an approved non-selective herbicide with the installation of signs on site after this work has been done, then the tilling of the soil ten (10) days after the herbicide treatment. The herbicide must be applied by a licensed pesticide applicator. The ground shall be then cultivated with a rottotiller. Ensure that tilled earth is free of lumps and remove all large clumps of earth. The size of lumps remaining on site must be consistent with CW 3540-R5.

E4.1.4 The Contractor must ensure that the rough grading does not create tripping hazards and no areas of standing water remain.

E4.1.5 Earthwork and Grading of the existing Site (cut and fill including compaction of subgrade and fill material) to ensure positive drainage in all paved areas, swales and adjacent sodded areas.

E4.1.6 Stockpile suitable, approved material on Site for reuse (clean topsoil, clean earth fill, gravel fill and rock boulders) in a secure location. Remove and dispose of unsuitable material.

E4.2 Construction Methods

E4.2.1 Excavation includes the removal of items (i.e., earth, asphalt) as indicated on the Drawings and as directed by the Contract Administrator. Work includes the satisfactory disposal of unsuitable Site material such as clays susceptible to frost-heaving, silts, rock, rubble, rubbish and any surplus suitable Site material.

E4.2.2 Do not disturb adjacent items designated to remain in place.

E4.2.3 Disposal of material shall be understood to mean the hauling of all unsuitable material from the Site and the unloading in a legal manner acceptable to the Contract Administrator. If arrangements are made in advance excavated material may be disposed of on Site at a location designated by the Contract Administrator.

E4.2.4 Contractor must coordinate with the Contract Administrator to ensure all removals have occurred.

E4.2.5 Excavation should be coordinated with the installation paths and sodding so as not to leave an open excavation area subject to ponding water.

E4.2.6 Items such as grading or sodding may require additional clean fill, either used from excavated areas within the site or brought to the site. The cost of additional clean fill shall be incidental to the excavation and grading price of the item.

E4.2.7 Excavate to the limits shown on Drawings and to the depths necessary to achieve finish grade for:

- (a) Granular path and seating areas – 175mm, as per Drawings B.22-G2, B.22-G12 and SCD-645R, and per E8; and
- (b) Planting beds – 350mm minimum, as per Drawings B.22-G2, B.22-G12 and SCD-501R, and per E21;
- (c) Pre-cast paver areas – 225mm, as per Drawings B.22-G2, B.22-G7, B.22-G12, B.22-G13, and per E13;
- (d) Engineered wood fibre surfacing – 275mm (if Zeager WoodCarpet product used) or 200mm (if Fibar product use), as per Drawings B.22-G2 and B.22-G4, and per E11;
- (e) Sand play area – 270mm minimum, as per Drawings B22-G2, B.22-G5 and B.22-G10, and per E18;
- (f) Woodchip Surfacing in Community Gardens – 150mm, as per Drawings B.22-G12, and per E10;
- (g) Sodded Areas in Community Gardens – 150mm, as per Drawing B.22-G12, and per E23; and
- (h) Asphalt path – 275mm, as per Drawings B.22-G17 and SCD-648R, and per E7.

- E4.2.8 Grade site to the limits shown on Drawings and to the depths necessary to achieve finish grade for:
- (a) Soccer field; and
 - (b) Nature grounds area, including berms and dry stream swale.
- E4.3 Matching Existing Grades
- E4.3.1 Wherever the proposed paving, or sod meets existing building edge, doorway, or property line, the Contractor shall construct the proposed element to an acceptable grade, as directed by the Contract Administrator, to ensure that proper drainage and accessibility are maintained.
- E4.4 Sawcutting pavement
- E4.4.1 At the limits of excavation, the Contractor shall sawcut the existing to produce a clean straight edge when excavated.
- E4.5 Method of Measurement and Basis of Payment
- E4.5.1 Method of Measurement shall be as follows:
- (a) Excavation and Grading shall be measured on a cubic metre basis for:
 - (i) "Excavate soil for Engineered Wood Fibre surfacing (275mm depth if WoodCarpet, 200mm if Fibar)";
 - (ii) "Excavate and legally dispose of existing asphalt and portion of sub-base for woodchip surfacing (150mm) in Community Garden"; and
 - (iii) "Excavate and legally dispose of existing asphalt and portion of sub-base for sod (150mm min.) and add clean fill as necessary to meet adjacent grades".
 - (b) Excavation and Grading shall be measured on a square metre basis for:
 - (i) "Earthwork and Grading of Nature Grounds," and;
 - (ii) "Earthwork and Grading of Soccer Field" on Form B: Prices.
 - (c) No measurement will be made for the Excavation and Grading for the granular path and seating area as these items are incidental to E8;
 - (d) No measurement will be made for the Excavation and Grading for planting beds, as these items are incidental to E21;
 - (e) No measurement will be made for the Excavation and Grading for pre-cast paver areas, as these items are incidental to E13;
 - (f) No measurement will be made for the Excavation and Grading for sand play area, as these items are incidental to E18;
 - (g) No measurement will be made for the Excavation and Grading for asphalt paths, as these items are incidental to E7.
- E4.5.2 Basis of Payment shall be as follows:
- (a) Excavation and Grading will be paid for at the Contract Unit Prices on Form B: Prices. The amount to be paid for shall be the total number of units, measured as specified herein, which price shall be for full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.
 - (b) No payment will be made for the Excavation and Grading for the granular path and seating area as these items are incidental to E8;
 - (c) No payment will be made for the Excavation and Grading for planting beds, as these items are incidental to E21;
 - (d) No payment will be made for the Excavation and Grading for pre-cast paver areas, as these items are incidental to E13;

- (e) No payment will be made for the Excavation and Grading for sand play area, as these items are incidental to E18;
- (f) No payment will be made for the Excavation and Grading for asphalt paths, as these items are incidental to E7.

E5. ADJUSTMENT OF CATCH BASIN

E5.1 Description

E5.1.1 The Specification shall supplement Standard Construction Specification CW 2130-R11.

E5.1.2 The work of this section comprises the furnishing of all labour, equipment and materials required to complete the lowering of catch basin rim to the elevation shown on the Drawings.

E5.1.3 Catch basins to be adjusted to meet proposed grades as per Drawings B.22-G3A and B.22-G16.

E5.2 Materials

E5.2.1 Contractor to provide precast concrete ring with catch basin frame to match existing cover to fit existing catch basin.

E5.2.2 Materials to conform to City of Winnipeg Specifications.

E5.3 Construction Methods

E5.3.1 Contractor to inspect existing catch basin and pipe inverts with City of Winnipeg prior to removal of catch basin frame.

E5.3.2 Remove excess debris in existing catchbasin as required.

E5.3.3 Elevation of catch basin rim to be adjusted to the satisfaction of Contract Administrator and City of Winnipeg.

E5.3.4 Area around catch basin to be compacted following connection of drainage tile to catch basin.

E5.4 Method of Measurement and Basis of Payment

E5.4.1 Method of Measurement shall be as follows:

- (a) Adjustment of Catch basin will be measured on a lump sum basis for the following items:
 - (i) "Adjustment of CB in Nature Grounds"; and
 - (ii) "Adjustment of CB near Soccer Field" on Form B: Prices.

E5.4.2 Basis of Payment shall be as follows:

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

E6. SUB-SURFACE DRAINAGE

E6.1 Description

E6.1.1 This specification shall amend and supplement CW 2130-R11, CW 3120-R3, CW 3110-R12, and CW 2030-R7.

E6.1.2 This Work shall consist of, but is not limited to, the supply and installation of the following:

- (a) Multi-Flow™ drainage system to drain the sand play area, as per Drawings B.22-G3B and B.22-G5;
- (a) Multi-Flow™ drainage system, including connection to existing catch basin in Soccer Field area as per Drawing B.2-G16 and B.2-G17.
- (b) catch pit and round drainage pipe, including connection to existing catch basin in the Nature Grounds, as per Drawing B.22-G3B;
- (c) round drainage pipe to connect from the safety surfacing subgrade level of the existing play structure area and drain to dry creek, as per Drawing B.22-G3B;
- (d) round drainage pipe to be located at the base of the precast concrete retaining wall and drain to dry creek, as per Drawings B.22-G3B and B.22-G4;
- (e) round drainage pipe to be located at the base of the limestone block seating/ retaining wall and drain to air, as per Drawings B.22-G3B and B.22-G4.

E6.1.3 The quantities of drain as shown on the plans may be increased or decreased at the direction of the Contract Administrator based on actual site conditions that occur during construction of the project. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the Work.

E6.2 Material

E6.2.1 Multi-Flow™ Drainage pipe, fittings and connections (www.multi-flow.com), or approved substitute in accordance with B6:

- (a) 150 mm (6") drainage pipe for use within the sand play area. The manufacturer will size and approve all fittings for use with Multi-Flow or approved substitute drainage pipe.
- (b) 150 mm (6") drainage pipe for use within the soccer field area. The manufacturer will size and approve all fittings for use with Multi-Flow or approved substitute drainage pipe.

E6.2.2 Round perforated drainage pipe, drainage fabric and drainage material as per CW 3120-R3:

- (a) 150mm (6") pipe to be used to connect the catch pit to the existing catch basin;
- (b) 150mm (6") pipe to be used to connect the existing play structure area to the existing catch basin;
- (c) 100mm (4") for use at the base of the precast concrete retaining wall;
- (d) 100mm (4") for use at the base of the limestone block seating/ retaining wall.;

E6.2.3 Cleanouts will be provided as indicated on the drawing.

E6.2.4 Rodent Screen

- (a) A rodent screen made of 0.3 inch by 0.3-inch square opening size, 0.063-inch gauge, stainless steel or galvanized, welded wire mesh shall be installed in each outlet lateral line. When using galvanized welded wire mesh, the rodent screen shall be galvanized after it has been formed to the shape and dimensions shown on the plans or specified by the Contract Administrator.

E6.2.5 Backfill:

- (a) for Multi-Flow™ Trenches
 - (i) Backfill will be coarse sand whose particle size is defined as less than 5% retained on a # 10 screen and less than 5% passing through a # 30 (US Std Sieve) In no case will more than 1% pass a # 60 screen.
- (b) For round perforated drainage pipe
 - (i) as per CW 3120-R3.

E6.2.6 Catch Pit

- (a) Catch Pit shall comprise of the following NDS™ products (www.ndspro.com), or approved substitute in accordance with B6:
- (i) #1882 -18" x 18" one-piece tapered catch basin;
 - (ii) #1815 – 18" square galvanized grate;
 - (iii) #1266 – universal locking outlet; and
 - (iv) #1206 – 6" universal adapter plug, or approved substitutes in accordance with B6.

E6.3 Methods

- E6.3.1 The layout of the subdrain is to be marked on Site and approved by the Contract Administrator prior to trenching.
- E6.3.2 Contractor is to protect subdrain from excessive weight during the duration of construction and to repair and make good any pipe collapsed prior to acceptance.
- E6.3.3 Fittings for the drain will be installed in accordance with the manufacturer's recommendations and Specification.
- E6.3.4 Any damaged edge drain or outlet lateral will be replaced or repaired by splicing in an undamaged section of drain at the Contractor's expense. The repair must be in accordance with the manufacturers specification and to the satisfaction of the Contract Administrator.
- E6.3.5 Round perforated drainage pipe to be installed as per Drawing B.22-G3B and CW 3120-R3.
- E6.3.6 Multi-Flow™ shall be installed as per manufacturer's recommendations and per Drawing B.22-G5 for sand play area and B.22-G17 for soccer field drainage.
- E6.3.7 Catch pit shall be installed as per manufacturer's recommendations and CW 2130-R11.
- E6.3.8 All connections to catch pit and existing catch basins shall be per Drawings and CW 2130-R11.

E6.4 Measurement and Payment

- E6.4.1 Method of Measurement shall be as follows:
- (a) Sub-surface drainage shall be measured on a linear metre basis for:
 - (i) "Supply and Install subsurface drainage to connect new catch pit and existing catch basin";
 - (ii) "Supply and Install subsurface drainage to connect from existing play area to dry creek"; and
 - (iii) "Supply and Install Multi-Flow™ Drainage, includes all pipes, fittings and connection to existing CB in Field Area" on Form B: Prices.
 - (b) Sub-surface drainage shall be measured on a lump sum basis for:
 - (i) "Supply and Install Catch Pit".
 - (c) No measurement will be made for Sub-Surface Drainage for the sand play area, as these items are incidental to E18;
 - (d) No measurement will be made for Sub-Surface Drainage for the pre-cast concrete retaining wall, as these items are incidental to E14;
 - (e) No measurement will be made for Sub-Surface Drainage for the limestone block seating/ retaining wall, as these items are incidental to E15.
- E6.4.2 Basis of Payment Shall be as follows:
- (a) Subsurface Drainage will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

- (b) This payment shall be understood to include all trenching, backfill, fittings, cleanouts, topsoil and seeding/sodding, and items incidental to the Work included in the Specification.
- (c) No payment will be made for Sub-Surface Drainage for the sand play area, as these items are incidental to E18;
- (d) No payment will be made for Sub-Surface Drainage for the pre-cast concrete retaining wall, as these items are incidental to E14;
- (e) No payment will be made for Sub-Surface Drainage for the limestone block seating/retaining wall, as these items are incidental to E15.

E7. ASPHALT PATH

E7.1 Description

- E7.1.1 The specification shall supplement City of Winnipeg specification CW 3410 and CW 3110.
- E7.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following:
 - (a) Construction of Asphalt Path, including excavation, supply and installation of base courses, and asphalt paving as shown on Drawing B.22-17 and SCD-648R.

E7.2 Material

- E7.2.1 Subbase as per CW 3110;
- E7.2.2 Geotextile as per CW 3130
- E7.2.3 Base course as per CW 3110;
- E7.2.4 Asphalt as per CW 3410;

E7.3 Construction Methods

- E7.3.1 Excavation shall be as per E4.
- E7.3.2 Contractor shall construct a compacted gravel base for asphalt pavement to depths as shown on the Construction Drawings in accordance with City of Winnipeg Specification CW 3110. Additional gravel shall be supplied and installed if necessary to attain proper Subgrade elevations.
- E7.3.3 Geotextile Fabric
 - (a) Geotextile fabric to be installed in accordance with City of Winnipeg Specification CW 3130 and the Construction Drawings.
- E7.3.4 Asphalt Surface
 - (a) Compacted asphaltic concrete surface shall be constructed in accordance with City of Winnipeg Specification CW 3410 and the Construction Drawings.
- E7.3.5 Acceptance
 - (a) Any Work not satisfactory as specified herein and as determined by the Construct Administrator shall be rectified by the Contractor. The process of inspection and correction shall continue until the Contract Administrator is satisfied that the Work is 100% complete and as per the construction drawings and specification.

E7.4 Method of Measurement and Basis of Payment

- E7.4.1 Method of Measurement shall be as follows:
 - (a) Asphalt Path shall be measured on a square metre basis for:

- (i) "Supply and Install Asphalt Path" on Form B: Prices.

E7.4.2 Basis of Payment shall be as follows:

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

E8. GRANULAR PATHS

E8.1 Description

E8.1.1 This Specification shall amend and supplement the City of Winnipeg Specification CW 3110-R11 and CW 3130-R2. 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 a Granular Path and Seating Areas as shown on Drawing B.22-G2, B.22-G9, B.22-G12, B.22-G13, and SCD-645R.

E8.2 Materials

E8.2.1 The materials of the Granular Paths shall be as per Drawing SCD-645R "Park Path – Crushed Limestone" and CW 3110-R11 and CW 3130-R2.

E8.3 Construction Method

E8.3.1 The Work included in the establishment of the Granular Paths shall include:

- (a) The Contractor shall survey and stake out the proposed Granular Paths prior to the start of construction as shown on the construction drawings. Layout of paths and seating areas shall be checked and confirmed with Contract Administrator prior to construction.
- (b) Excavation of Granular Path and Seating Area shall be as per E4.
- (c) Subgrade to be compacted as per CW 3110-R11.
- (d) Geotextile to be as per CW 3130-R2.
- (e) All granular base coarse shall be placed and compacted to the finished thickness as specified on the drawings, as per CW 3110-R11.
- (f) Base Coarse and Capping Coarse shall be compacted to a minimum of ninety five percent (95%) of Standard Proctor Density.

E8.4 Method of Measurement and Basis of Payment

E8.4.1 Method of Measurement shall be as follows:

- (a) Granular Paths shall be measured on a square metre basis for:
 - (i) "Supply and Install Granular Path and small Seating Area in Nature Grounds";
 - (ii) "Supply and Install Granular mow strip"; and
 - (iii) "Supply and install granular pad in Community Gardens" on Form B: Prices.

E8.4.2 Basis of Payment shall be as follows:

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

E9. TIMBER EDGING

E9.1 General Description

E9.1.1 The Contractor shall furnish all labour, materials, equipment and services necessary to complete the Work according to the drawings and specifications.

E9.1.2 This specification shall cover the supply and installation of timber edging to act as an edge between the woodchip surfacing and sod within the Community Garden, as shown on Drawing B.22-12.

E9.2 Materials and Method

E9.2.1 Layout shall be as the dimensions on Drawing B.22-13.

E9.2.2 Timber shall be a single course of ACQ pressure-treated (P.T.) pine, No.2 or better

- (a) No wane, bark, checking or splitting permitted.
- (b) Wood shall be smooth and free of rough areas.
- (c) All timbers to be 150 x 150mm with a minimum length of 1200mm. Contractor to use longest lengths possible.

E9.2.3 Timbers shall be pinned with a minimum of two (2) 12.7mm diameter by 1000mm rebar at maximum 900mm O.C.

E9.2.4 All timbers shall be cut neatly for a proper fit with no spaces or gaps between. All cuts shall be stained before being secured. Finished elevations shall ensure that all timbers are smooth, level, set plumb and spaced uniformly.

- (a) End-cut wood preservative to be applied to the cuts of all pressure treated wood.

E9.2.5 Contractor to layout on site for review and approval by Contract Administrator prior to construction.

E9.3 Method of Measurement and Basis of Payment

E9.3.1 Method of Measurement shall be as follows:

- (a) Timber Edging will be measured on a linear metre basis for:
 - (i) "Supply and install single course 6x6 pressure treated timber edging" as indicated on Form B: Prices
- (b) Timber Edging will be measured on a linear metre basis. The linear metre to be paid for the total number of linear metre of Timber Edging that are installed in accordance with this Specification and the Construction Drawings, and as acceptable to the Contract Administrator.

E9.3.2 Basis of Payment shall be as follows:

- (a) Timber Edging will be paid for at the Contract Unit Prices per linear metre for Items noted as and measured as specified herein. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

E10. WOODCHIP SURFACING

E10.1 Description

E10.1.1 This specification shall cover the supply and installation of Woodchip Surfacing:

- (a) located next to the Pre-cast paver seating area in the Nature Grounds;
- (b) surrounding existing trees on the south edge of the Nature Grounds; and
- (c) within the Community Garden Area, as per Drawings B.22-G2 and B.22-G12.

E10.2 Materials

(a) Woodchips

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

E10.3 Construction Methods

- (a) Woodchip Surfacing to be installed as pathways leading out from the Pre-cast paver seating area in the Nature Grounds shall have a minimum 100mm compacted depth woodchips placed on top of graded, compacted earth.
- (b) Woodchip Surfacing surrounding existing trees on the south end of the Nature Grounds shall include the careful removal of the sod underneath the trees and then a 100mm layer of woodchips placed on top.
- (c) Woodchip Surfacing within the Community Garden Area shall include the excavation of the area as per E4 and then the installation of 150mm compacted depth of woodchips.

E10.4 Method of Measurement and Basis of Payment

E10.4.1 Method of Measurement shall be as follows:

- (a) The supply and installation of Woodchip Surfacing shall be measured on a per square metre basis for:
 - (i) "Supply and Install Woodchip Surfacing as pathways and around Trees near Seating Area (100mm depth)";
 - (ii) "Supply and Install Woodchip Surfacing in Community Gardens (150mm compacted depth)" on Form B: Prices.

E10.4.2 Basis of Payment shall be as follows:

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

E11. ENGINEERED WOOD FIBRE SURFACING

E11.1 General Description

E11.1.1 This specification shall cover the supply and install of engineered wood fibre surfacing within the Stump Walk area, as shown on Drawings B.22-G2 and B.22-G4.

E11.1.2 Materials

- (a) Wood Fibre product shall be either Zeager Woodcarpet or Fibar FibarSystem 300 products or substitute in accordance with B6.
 - (i) Contact for Woodcarpet:
Zeagar Bros. Inc.
4000 East Harrisburg Pike ·
Middletown, PA 17057
USA
Ph: (1-888) 346-8524 or (717) 944-7481 ·
Fax (717) 944-7681
sales@zeager.com
 - (ii) Contact for FibarSystem 300:
The Fibar Group LLC
80 Business Park Drive, Suite 300

Armonk, NY 10504-1705
USA

Ph: (800) 342-2721

Fax: (914) 273-8659

info@FibarPlaygrounds.com

- (b) Wood Fibre surfacing shall include wood fibre, filter cloth, subsurface drainage system and mats for bottom of slides, if applicable, under swings, and at each accessible entrance to the Play Area.

E11.1.3 Construction Methods

- (a) Wood Fibre shall be installed within the Stump Walk area, as shown on Drawings, to a minimum compacted depth of 200 mm.
- (b) Installation of entire system, including fibre, filter cloth, subsurface drainage and mats shall be done according to manufacturer's instructions. Adequate drainage within Stump Walk area must be ensured as per same. All materials described herein is to be included within the cost of the engineered wood fibre surfacing.
- (c) Sub-grade of engineered wood fibre surfacing shall drain towards dry creek. Ensure excess water can escape through granite boulder edging but ensure that wood fibre pieces cannot get through into the dry creek.
- (d) Installation shall be done by equipment sized to suit the Work being done and the Wood Fibre shall be spread by hand as necessary in the immediate vicinity of the Natural Stumps so as not to damage same.

E11.2 Method of Measurement and Basis of Payment

E11.2.1 Method of Measurement shall be as follows:

- (a) Engineered Wood Fibre Surfacing will be measured on a square metre basis for the following:
 - (i) "Supply and Install Engineered Wood Fibre" on Form B: Prices.

E11.2.2 Basis of Payment shall be as follows:

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

E12. CAST IN PLACE (CIP) CONCRETE EDGING

E12.1 Description

- E12.1.1 The specification shall supplement City of Winnipeg Specification CW 3325-R3 and CW 3310-R14.

E12.2 Material

- E12.2.1 All material shall conform to Specification CW3325-R3 and CW 3310-R14.

E12.3 Supply of Materials and Equipment

- E12.3.1 The Contractor shall supply all materials and use equipment in accordance with Specification CW 3325-R3.

E12.4 Construction Methods

- E12.4.1 No concrete work shall commence until the excavation has been completed in accordance with Specification CW 3110 and the drawings and has been approved by the Contract Administrator.

- E12.4.2 Sub-base compaction shall be in accordance with Specification CW 3110.
- E12.4.3 Base Course to be installed to a depth of 150mm in accordance with Specification CW 3110 and the drawings.
- E12.4.4 Reinforcing Steel shall be installed as shown on Drawings in accordance with Specification CW 3310-R14.
- E12.4.5 Contraction joints shall be installed in accordance with Specification CW 3310-R14, at intervals of 1.5m and at all corners.
- E12.4.6 Concrete placement shall be installed as per drawings, in accordance with Specification CW 3310-R14.
- E12.5 Method of Measurement and Basis of Payment
- E12.5.1 Method of Measurement shall be as follows:
- (a) CIP Concrete Edging will be measured on a linear metre basis for the following:
 - (i) "Supply and Install C.I.P. Concrete Edging" on Form B: Prices.
- E12.5.2 Basis of Payment shall be as follows:
- (a) CIP Concrete Edging will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

E13. PRE-CAST PAVERS

- E13.1 Description
- E13.1.1 The specification shall supplement Specification CW 3330.
- E13.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following:
- (a) Excavation and installation of a base course, supply and installation of bedding sand and supply and installation of unit pavers for areas as indicated on the Drawing.
 - (b) Supply and installation of Snap Edge along perimeter of the Community Garden Pre-Cast Paver area.
- E13.1.3 Submit Full size sample of paving stones for Contract Administrator's approval. Deliver samples prepaid to Contract Administrator's business address and Notify Contract Administrator in writing, at time of submission of deviations in samples from requirements of Contract Documents
- E13.2 Material
- E13.2.1 Pre-Cast Concrete Pavers:
- (a) Barkman Roman Circle and additional courses, colour: Antique Brown. 60mm thick;
 - (b) Barkman Roman Paver, colour: Sierra Grey (262mm x 210mm x 60mm);
 - (c) Barkman Roman Paver, colour: Antique Brown (210mm x 105mm x 60mm);
 - (d) Barkman Holland Paver, colour: Desert Buff (210mm x 105mm x 60mm);
 - (e) Barkman Holland Paver, colour: Sierra Grey (210mm x 105mm x 60mm);
 - (f) Barkman Holland Square Paver, colour: Sierra Grey (210mm x 210mm x 60mm);
 - (g) Barkman Madrid Paver, colour: Antique Brown (60mm thick).

- E13.2.2 Bedding sand as per CW 3330;
- E13.2.3 Filler Sand as per CW 3330;
- E13.2.4 Crushed limestone in accordance with CW3330.
- E13.2.5 150 mm Height "Snap Edge" for Community Garden Pre-cast Paver area.
- E13.3 Construction Methods
- E13.3.1 Excavation for base material shall be as per E4 and in accordance with Specification CW 3110.
- E13.3.2 Granular base, sand setting bed and unit pavers shall be installed in accordance with CW3330.
- E13.3.3 Spread polymeric sand in joints and as per manufacturer's recommendations for megalith paver
- E13.3.4 Replace at no extra cost all whole or cut stones marked as unacceptable.
- E13.3.5 Remove cracked, chipped, broken or otherwise damaged paving materials from Site immediately.
- E13.3.6 Upon completion, clean in accordance with manufacturer's recommendations.
- E13.3.7 "Snap Edge" to be installed as per manufacturer's specifications, including all installation hardware surrounding Pre-Cast Paver area in Community Gardens as indicated on drawing B.22-G12.
- E13.4 Method of Measurement and Basis of Payment
- E13.4.1 Method of Measurement shall be as follows:
- (a) Pre-Cast Pavers shall be measured on a square metre basis for:
 - (i) "Supply and Install Pre-Cast Pavers in Nature Grounds"; and
 - (ii) "Supply and install Pre-cast pavers in Community Gardens, including 'snap edge' retainer" on Form B: Prices.
- E13.4.2 Basis of Payment shall be as follows:
- (a) Pre-Cast Pavers shall be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for excavation, subgrade compaction, supply and installation of base coarse and top coarse, supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.
 - (b) The snap edge cost shall be included only in the Pre-Cast pavers in the Community Garden cost.

E14. PRECAST CONCRETE RETAINING WALL

E14.1 Description

- E14.1.1 The specification shall cover the supply and installation of precast concrete retaining wall as shown on Drawing B.22-G2 and B.22-G4.

E14.2 Materials

- E14.2.1 Retaining wall shall be Barkman Roman Pisa or substitute approved in accordance with B6. Colour shall be Antique Brown.
- E14.2.2 Granular limestone base is to be crushed stone or gravel having hard angular particles, free from clay lumps, cementation, organic material, frozen material or other deleterious materials.

E14.2.3 Geotextile shall be non-woven and installed as shown on the drawings. It shall have an apparent opening size of between 0.149 mm and .210 mm and a minimum unit weight of 135 grams per sq. m.

E14.2.4 Drainage pipe shall be placed at the base of the wall in a manner consistent with the details provided and as per E6.

E14.3 Construction Methods

E14.3.1 The Contractor shall excavate for the base course, compact, install the geotextile, install the base granular and compact to 100% of proctor density.

E14.3.2 The wall shall be then built in accordance with manufacturers instructions, backfilling with granular as necessary.

E14.3.3 The top two courses of the wall shall be attached with continuous concrete adhesive. (mastic)

E14.4 Method of Measurement and Basis of Payment

E14.4.1 Method of Measurement shall be as follows:

(a) Precast Concrete Retaining Wall shall be measured on a linear metre basis for:

(i) "Supply and Install Roman Pisa Precast Concrete Retaining Wall" on Form B: Prices.

E14.4.2 Basis of Payment shall be as follows:

(a) Precast Concrete Retaining Wall shall be paid for at the Contract Unit Prices. The amount to be paid shall be the total number of units, as indicated on Form B: Prices. Walls segments of different heights, individual rows of blocks or capstone length will not be measured separately. Said payment shall be understood to include all items necessary and incidental to supply and installation of the wall including but not limited to excavation, compaction, adhesives, geotextile, weeping tile and granular.

E15. LIMESTONE BLOCK SEATING/ RETAINING WALL AND WOOD FIBRE EDGING

E15.1 Description

E15.1.1 This specification shall cover the supply and installation of limestone block for the seating/ retaining wall and the edging for the engineered wood fibre as indicated on Drawings B.22-G2 and B.22-G4.

E15.2 Materials

E15.2.1 Granular shall be 19mm diameter crushed limestone aggregate;

E15.2.2 Geotextile shall be non-woven and installed as shown on the drawings. It shall have an apparent opening size of between 0.149 mm and .210 mm and a minimum unit weight of 135 grams per sq. m.

E15.2.3 Drainage pipe shall be placed at the base of the wall in a manner consistent with the details provided, and as per E6.

E15.2.4 Limestone Blocks to be from a Manitoba quarry, colour to be approved by Contract Administrator and blocks for:

(a) Seating/ Retaining Wall shall have a fairly smooth top for seating and an approximate size range of:

(i) Length:

◆ 700mm – 1200mm;

(ii) Width:

◆ Approx. 600mm – 800mm;

- (iii) Height:
 - ◆ 500mm – 1060m

- (b) engineered wood fibre edging to be of approximate size range of:
 - (i) 500mm to 800mm O.D.

E15.3 Construction Methods

E15.3.1 The Contractor shall excavate for the base course, compact, install the geotextile, install the base granular and compact to 100% of proctor density.

E15.3.2 Limestone Blocks shall be approximately one third buried.

E15.3.3 Limestone Blocks shall be then be placed varying in height with the tallest blocks in the middle and shorter ones one the sides, following the shape of the berm, backfilling with granular as necessary.

E15.3.4 Gaps between Limestone Blocks shall be as small as possible, infill gaps with 6mm crushed limestone and compact to appropriate density.

E15.4 Method of Measurement and Basis of Payment

E15.4.1 Method of Measurement shall be as follows:

- (a) Landscape Block Seating/ Retaining Wall shall be measured on a square metre basis for:
 - (i) "Supply and Install Limestone Block Seating/ Retaining Wall" on Form B: Prices.

E15.4.2 Basis of Payment shall be as follows:

- (a) Supply and Installation of the limestone rocks will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator. Said payment shall be understood to include all items necessary and incidental to supply and installation of the wall including but not limited to excavation, compaction, geotextile, weeping tile and granular.

E16. LANDSCAPE ROCK

E16.1 Description

E16.1.1 This specification shall cover the supply and installation of large limestone rocks to be used as seating in the Private Seating Area as indicated on the Drawing B.22-G2.

E16.2 Materials

E16.2.1 Granular:

- (a) 19mm diameter crushed limestone aggregate;

E16.2.2 Limestone Rock:

- (a) To be from a Manitoba quarry, colour to be approved by Contract Administrator. Rock shall have a fairly smooth top for seating and an approximate size range of:
 - (i) Length:
 - ◆ 700mm – 1000mm;
 - (ii) Width:
 - ◆ Approx. 400mm – 500mm;
 - (iii) Height:
 - ◆ 610mm – 750m

E16.3 Construction Methods

E16.3.1 General

- (a) Limestone rocks to be installed in Private Seating Area placed as per instructions of Contract Administer.

E16.3.2 Installation

- (a) Excavate to ensure that top of Limestone Rock is approximate 450mm (18") above grade, an appropriate seat height.
- (b) Add 100mm of granular to base of excavated area;
- (c) Place limestone rocks and backfill with granular around boulders. Tamper down in compact. Excavation and Supply and Installation of granular base is incidental to the Work in this section.

E16.4 Method of Measurement and Basis of Payment

E16.4.1 Method of Measurement shall be as follows:

- (a) Landscape Rock shall be measured on a square metre basis for:
 - (i) "Supply and Install Limestone seating blocks" on Form B: Prices.

E16.4.2 Basis of Payment shall be as follows:

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

E17. DRY CREEK

E17.1 Description

E17.1.1 The specification shall the supply and installation of a dry creek as indicated on Drawings B.22-G2, B.22-G4, and B.22-G5.

E17.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified.

E17.2 Materials

E17.2.1 Geotextile fabric

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

E17.2.2 Riverwash Stone

- (a) Clean 75mm riverwash stone, to be approved by Contract Administrator;

E17.2.3 Granite Boulders

- (a) To be from a Manitoba quarry, colour to be approved by Contract Administrator. Rough surface boulders, mix of black and red-brown colours, and approximate size range of:
 - (i) Small:
 - ◆ Roughly 300mm diameter
 - (ii) Large:
 - ◆ 400mm – 600mm diameter

E17.3 Construction Methods

- E17.3.1 Once site has been graded as per Drawings, lay down geotextile fabric at the base of the dry stream area, including over catchbasin grate, laid smooth and free of tension, stress, folds, wrinkles or creases.
- (a) Joints in the filter fabric shall be overlapped not less than 0.5 metres.
- E17.3.2 Place large and small granite boulders as directed by Contract Administrator. They shall be placed in such a manner that the larger boulders are uniformly distributed around the planting areas first and smaller boulders serve to fill the places between the larger boulders.
- E17.3.3 The remainder of the dry creek shall be filled in with a 150mm depth of Riverwash stone to conceal subgrade.

E17.4 Method of Measurement and Basis of Payment

- E17.4.1 Method of Measurement shall be as follows:
- (a) Dry Creek shall be measured on a lump sum basis for:
- (i) "Dry Creek Construction" on Form B: Prices.
- E17.4.2 Basis of Payment shall be as follows:
- (a) Dry Creek construction will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

E18. SAND PLAY AND LOG EDGING

E18.1 Description

- E18.1.1 This specification shall cover the excavation and supply and installation of playsand and multiflow drainage for the sand play area, and log edging for around sand play area and also as edging for engineered wood fibre surfacing in the stump walk area. The Contractor shall furnish all labour, materials, equipment and services necessary to complete the Work as shown on Drawings and specified herein.

E18.2 Materials and Methods

- E18.2.1 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.
- E18.2.2 Excavation shall be as per E4.
- E18.2.3 Playsand shall be natural washed sand of rounded particles, free of fines, clay, silt, stones or other debris and shall meet the following criteria:
- (i) 100% passing 6.7 mm sieve;
 - (ii) 99.5% passing 4.75 mm sieve;
 - (iii) 97-100 % passing 2.36 mm sieve;
 - (iv) 70-90 % passing 1.18 mm sieve;
 - (v) 25-60% passing 600 um sieve;
 - (vi) 5-25% passing 300 um sieve;
 - (vii) 0-3 % passing 150 um sieve;
 - (viii) 0-1% passing 75 um sieve.
- E18.2.4 Log Edging shall be supplied and installed as per Drawings B.22-G2 and B.22-G5.
- (a) Logs shall be picked up from:

- (i) Wood Anchor. For directions to facility please call 204-261-1913 or e-mail: info@woodanchor.com
 - (ii) 9 x 16" (450mm) dia. and 6' (1.8m) lengths of logs;
- (b) 1400mm long 12.7mm rebar dowels to be used to secure Logs in place and shall be located every 600mm along length of log.

E18.2.5 Multiflow drainage piping (as per E6) layed horizontally in low area of sand play area, or approved equal in accordance with B6. It shall be drained to Dry Creek as shown on Drawing B.22-G3B.

E18.3 Method of Measurement and Basis of Payment

E18.3.1 Method of Measurement shall be as follows:

- (a) Sand Play and Log Edging shall be measured on a lump sum basis for the following items
 - (i) "Supply and Install sand play area including Pick Up and Install of Large logs" on Form B: Prices.
 - (ii) City to Pay for the supply of logs and Contractor to pay for the Pick up and Installation of the Logs.

E18.3.2 Basis of Payment shall be as follows:

- (a) Supply and Installation of the Sand Play and Log Edging will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials (including but not limited to playsand, log edging, and multiflow), and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

E19. LOG STEPPING POSTS

E19.1 Description

E19.1.1 This specification shall cover the supply and installation of log stepping posts to be located in engineered wood fibre surfacing within natural stump walk area as indicated on the Drawings B.22-G2 and B.22-G4.

E19.2 Materials

E19.2.1 Log Stepping Posts to be picked up from:

- (a) Wood Anchor. For directions to facility please call 204-261-1913 or e-mail: info@woodanchor.com

E19.2.2 Heights of logs above grade shall vary between 200mm, 400mm, and 600mm.

E19.2.3 6mm down limestone backfill.

E19.3 Construction Methods

E19.3.1 Log stepping posts to be located on site by Contract Administrator. They shall have a minimum 1.8m offset from limestone block seating/ retaining wall, granular path, and dry creek.

E19.3.2 Log stepping posts:

- (a) Shall be installed true and plumb.
- (b) A minimum of one third the length of the log to be buried.
- (c) Backfill stepping post excavations with 6mm down limestone. Tamp material thoroughly.

E19.4 Method of Measurement and Basis of Payment

- E19.4.1 Method of Measurement shall be as follows:
- (a) Log Stepping Posts shall be measured on a per unit basis for:
 - (i) "Pick Up and Install Wood Step Posts" on Form B: Prices.
 - (ii) City to Pay for the supply of logs and Contractor to pay for the Pick up and Installation of the Logs.

- E19.4.2 Basis of Payment shall be as follows:
- (a) Supply and Installation of the limestone rocks will be paid for at the Contract Unit Prices. The amount to be paid for shall be the total number of units, as indicated on Form B: Prices. This price shall be full payment for supplying all labour, equipment and materials, and performing all operations herein described and all other items incidental to the Work and as accepted by the Contract Administrator.

E20. BOARDWALK

- E20.1 This specification shall cover the supply and installation of the boardwalk as described in the drawings. All items are understood to be a complete product including foundation, sub structure, super structure, deck boards, trim and other items necessary or incidental to the construction of the items specified.

- E20.2 All site carpentry is to be constructed from the materials and in the form indicated on the drawing.

- E20.3 Contractor is responsible for ensuring that all items are installed according to principles of standard good practice with products and connectors being used as per the manufacturers specification. Contractor shall ensure that structures meet all of the requirements of the Canada Building Code as well as any municipal requirements.

- E20.4 Method of Measurement and Basis of Payment

- E20.4.1 Method of Measurement shall be as follows:

- (a) Boardwalk will be measured on a lump sum basis for the following items:
 - (i) "Supply and Install Wooden Boardwalk"; on Form B: Prices.

- E20.4.2 Basis of Payment shall be as follows:

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

E21. PLANTING BED

- E21.1 Description

- (a) This specification shall cover the excavation of planting beds and the supply and installation of topsoil soil and woodchips.
- (b) The City reserves the right to reduce the area of planting beds in order to meet the budgetary constraints.

- E21.2 Materials

- E21.2.1 Topsoil Mix

- (a) Planting soil shall consist of black top soil, a fertile friable natural loam containing by volume not less than 4% and no more than 25% of organic matter for clay loams, and not less than 2% and no more than 25% for sandy loams, with an acidity value ranging from pH 6.0 to 8.0 and capable of sustaining vigorous plant growth. Topsoil is

to be free of any mixture of subsoil, clay lumps and free of stones and other extraneous matter. It shall not contain couch or crab grass rhizomes.

E21.2.2 Woodchip Mulch

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

E21.3 Construction Methods

E21.3.1 General

- (a) Layout of planting beds shall be as per Drawings B.22-G2 and B.22-G12.

E21.3.2 Installation

- (a) Excavation shall be in accordance with SCD-501R and E4.
- (b) Upon excavation of the planting bed, the excavation shall be backfilled with a topsoil mixture to a depth to permit adequate installation and stabilization of the plant material. Topsoil shall be placed in accordance with City of Winnipeg Standard Construction Specification CW 3540-R5 to a 400mm depth. Woodchip Mulch to be placed on top of shrub bed in accordance with SCD-501R.

E21.4 Method of Measurement and Basis of Payment

E21.4.1 Method of Measurement shall be as follows:

- (a) Planting Bed will be measured on a per square metre basis for:
 - (i) "Supply and Install Planting Beds in Nature Grounds"; and
 - (ii) "Supply and Install Planting Beds in Community Gardens" on Form B: Prices.

E21.4.2 Basis of Payment shall be as follows:

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

E22. TREES, SHRUBS AND PERENNIALS PLANTING

E22.1 Description:

E22.1.1 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to the following:

- (a) Supply and Installation of trees.
- (b) Supply and Installation of shrubs and perennials.

E22.1.2 The City reserves the right to reduce the quantity of shrubs in order to meet the budgetary constraints.

E22.2 Materials

E22.2.1 General

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

E22.2.2 Miscellaneous Materials

- (a) Water shall be potable and free of minerals which may be detrimental to plant growth.
- (b) Stakes shall be metal T-Bar, steel, 40x40x5x2440mm. Stakes must be adequately installed into sub-base as to ensure they are not easily removed by vandalism.
- (c) Guying Wire shall be 3mm diameter multi-strand galvanized steel cable.
- (d) Guying Collar shall be plastic tube, 13mm diameter, nylon reinforced.
- (e) Trunk Protection shall be plastic perforated spiraled strip.
- (f) Fertilizer shall be a slow release formulation of low nitrogen and high phosphorus e.g. 10-50-12. Apply quantities at rates stated by product manufacturer.
- (g) Planting Soil shall be as per specification E21 - Planting Bed.
- (h) Root Ball Burlap shall be 150 g Hessian burlap, biodegradable.
- (i) Wire Baskets shall be horticultural accepted product designed to carry the weight and to contain a burlap-covered root ball. Minimum diameter basket size is to conform to the same minimum diameter of the tree root ball for the respective minimum tree caliper sizes.

E22.2.3 Plant Material

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

testing procedure that destructively samples one or more randomly selected root balls.

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

E22.2.4 Plant Quantity and Size

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

E22.2.5 Shipment and Pre-Planting Care

- (a) Coordinate shipping of trees and excavation of holes to ensure minimum time lapse between digging and planting.

- (b) Tie branches of trees securely, and protect trees against abrasion, exposure and extreme temperature change during transit. Avoid binding of trees with rope or wire which would damage bark, break branches or destroy natural shape of tree. Give full support to root ball of trees during lifting.
- (c) Cover tree foliage with tarpaulin, and protect bare roots by means of dampened straw, peat moss, saw dust or other acceptable material to prevent loss of moisture during transit and storage.
- (d) Remove broken and damaged roots with sharp pruning shears. Make clean cuts, and cover cuts over 10mm diameter with a tree wound dressing.
- (e) Keep roots moist and protected from sun and wind. Heel-in trees which cannot be planted immediately in shaded areas and water well.

E22.3 Construction Methods

E22.3.1 Workmanship

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

E22.3.2 Planting Time

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

E22.3.3 Excavation

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

E22.3.4 Installation

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

- (h) All nursery stock shall be set plumb in the centre of pits and at levels as shown on the planting details after settlement has taken place.
- (i) Nursery stock shall be faced to give the best appearance or relationship to adjacent structure and to the approval of the The City of his representative. Trees shall be placed equal to depth they were originally growing in nursery.

E22.3.5 Fertilizing

- (a) When planting is completed, give surface of planting saucer dressing of fertilizer meeting the requirements of Specification. Mix fertilizer thoroughly with top layer of planting soil and water in well.

E22.3.6 Trunk Protection

- (a) Install trunk protection on trees as indicated.
- (b) Install trunk protection prior to installation of tree supports when used.

E22.3.7 Pruning

- (a) The Contractor shall provide a licensed Manitoba Certified Arborist for each work crew or work site.
- (b) Employ clean sharp tools and make cuts flush with branch collars. Remove dead and injured branches.

E22.3.8 Protection of Stock

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

E22.3.9 Wound Dressing

- (a) Horticulturally accepted non-toxic, non-hardening emulsion. Wound Dressing must be approved by Contract Administrator.

E22.3.10 Maintenance

- (a) The Contractor shall be responsible for the maintenance of the trees for a period of one (1) year from the date of Substantial Performance. Any areas planted after September 15th, the maintenance period will commence on May 15th of the following year or such date as mutually agreed upon by all parties.
- (b) The Contractor shall be responsible for the maintenance of the shrubs and perennials for a period of one (1) year from the date of Substantial Performance. Any areas planted after September 15th, the maintenance period will commence on May 15th of the following year or such date as mutually agreed upon by all parties.
- (c) Water to ensure soil moisture conditions for optimum growth and health of plant material. Ensure watering techniques do not cause erosion.
- (d) Reform damaged watering saucers.
- (e) Remove weeds bi-monthly.
- (f) Replace or re-spread damaged, missing or disturbed mulch.
- (g) If required to control insects, fungus and disease, use appropriate control methods in accordance with Federal, Provincial and Municipal regulations. Obtain product approval from Contract Administrator prior to application.
- (h) Apply fertilizer as directed by manufacturer's specifications.
- (i) Remove dead, broken or hazardous branches from plant material.

- (j) Keep trunk protection and tree supports in proper repair and adjustment.
- (k) Remove trunk protection, tree supports and level watering saucers at end of warranty period.
- (l) Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.
- (m) Submit monthly written reports to Contract Administrator identifying:
 - (i) Maintenance work carried out.
 - (ii) Development and condition of plant material.
 - (iii) Preventative or corrective measures required which are outside Contractor's responsibility.

E22.3.11 Warranty

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

E22.3.12 Replacements

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

E22.4 Method of Measurement and Basis of Payment

E22.4.1 Method of Measurement shall be as follows:

- (a) Trees, Shrubs and Perennials Planting will be measured on a per unit basis for:
 - (i) "Supply and Install Shrubs in Nature Grounds";
 - (ii) "Supply and Install Perennials and Grasses in Nature Grounds"; and
 - (iii) "Supply and install apple trees" on Form B: Prices.
- (b) Trees, Shrubs and Perennials Planting will be measured on a lump sum basis for:
 - (i) "One year Plant Maintenance on all planting supplied and installed by Contractor" on Form B: Prices.

E22.4.2 Basis of Payment shall be as follows:

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

E22.5 Plant List

Quantity	Botanical Name	Size / Remarks
APPLE TREES		
2	<i>Malus x 'Goodland'</i>	50mm calliper, specimen, machine dug with min. 10 branches in well branched head, straight trunk, min. ht. 4500mm
2	<i>Malus x 'Norland'</i>	50mm calliper, specimen, machine dug with min. 10 branches in well branched head, straight trunk, min. ht. 4500mm
SHRUBS		
4	<i>Physocarpus opulifolius</i> "Darts Gold"	2 gal. Specimen quality
15	<i>Philadelphus virginialis</i> "Snowbelle"	2 gal. Specimen quality
46	<i>Viburnum trilobum</i> "Bailey Compact"	2 gal. Specimen quality
17	<i>Ribes alpinum</i> "Green Mound"	2 gal. Specimen quality
16	<i>Euonymus alatus</i> "Fireball"	2 gal. Specimen quality
17	<i>Lonicera xlostereum</i> "Emerald Mound"	2 gal. Specimen quality
7	<i>Rubus</i> "Wyoming"	2 gal. Specimen quality
13	<i>Juniperus sabina</i> "Buffalo"	2 gal. Specimen quality
PERENNIALS		
11	<i>Echinecea purpurea</i> "Kim's Knee High"	1 gal. Specimen quality
14	<i>Monarda didyma</i> "Achall"	1 gal. Specimen quality
23	<i>Achillea millefolium</i> "Summer Pastels"	1 gal. Specimen quality
GRASSES		
26	<i>Fescue glauca</i> "Skinner's Blue"	4.5" pot
8	<i>Calamagrostis acutifolia</i> "Overdam"	6" pot
22	<i>Helictotrichon sempervirens</i>	6" pot
4	<i>Carex muskingumensis</i>	4.5" pot

E23. TOPSOIL AND SODDING

E23.1 Description

- E23.1.1 This Specification shall amend and supplement the City of Winnipeg Specifications CW 3510-R9 and CW 3540-R5. The Contractor shall install mineral sod and a minimum 75mm compacted thickness of topsoil, as required.
- E23.1.2 Topsoil and Sodding shall occur over all graded areas that are not already specified as a different type of surfacing.
- E23.1.3 Damaged areas: Restoration of damaged areas other than as outlined above shall be incidental to the Work. No separate payment shall be made.
- E23.1.4 Thirty (30) day maintenance period on sod will commence at Total Performance and acceptance.

E23.2 Method of Measurement and Basis of Payment

E23.2.1 Method of Measurement shall be as follows:

- (a) Topsoil and Sodding will be measured on a square metre basis for:
 - (i) "Supply and Install Soil and Sod in Nature Grounds";
 - (ii) "Supply and install soil and sod in Community Garden"; and
 - (iii) "Supply and Install Soil and Sod in Soccer Field Area" on Form B: Prices.

E23.2.2 Basis of Payment shall be as follows:

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

E24. SITE LIGHTING

E24.1 Description

E24.1.1 This Specification shall cover the furnishing of labour, new material, equipment and services necessary for the refurbishment of existing park lighting through the installation of new heads and poles as shown on Drawing B.22-G2.

E24.1.2 The major components of the work involved, but not limited to are:

- (a) Removal of Existing Pole, Lighting Fixtures, attachments and lamps;
- (b) Pole Installation; and,
- (c) Lighting Fixture, mounting, attachments and lamps.

E24.2 Materials

E24.2.1 The Contractor shall supply and install site lighting as shown on Construction Drawings and according to specifications listed below:

- (a) Light Pole shall be 4.57 m (15') high, 101.6 mm (4") round, steel, and powder coated same colour as luminaire; and,
- (b) Luminaire shall be as follows:
 - (i) Prisma by SDL
 - (ii) MODEL IES DISTRIBUTION WATTAGE COLOUR CAGES
 - (iii) VP 80 LR5 150 S Black 8 Guards
- (c) Photocell location shall be on light pole as determined on site prior to installation

E24.3 Construction Methods

E24.3.1 Fixtures are to be installed to manufacturer's specifications.

E24.3.2 Old poles and luminaires to be salvaged for pick up by the City of Winnipeg.

E24.4 Method of Measurement and Basis of Payment

E24.4.1 Method of Measurement Shall be as follows:

- (a) The supply and installation of Site Lighting will be measured on a per unit basis for, "Lighting Upgrades" on Form B: Prices.

E24.4.2 Basis of Payment Shall be as follows:

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

E25. CHAIN LINK FENCING

E25.1 Description

- E25.1.1 This specification shall supplement CW 3550 Chain Link Fencing and shall cover:
- (a) the removal of a portion of chain link fencing and the installation of a new chain link fence baffle gate, height to match existing, as per Drawing B.22-G2 and SCD-633;
 - (b) the installation of new 1.2m high chain link fencing across the south limit of the Nature Grounds, as per Drawing B.22.G2;
 - (c) the repair of maintenance gate in Nature Ground and the addition of an approximate 1.22m section, height to match existing, as per Drawing B.22-G2; and
 - (d) the removal of a portion of chain link fencing and the installation of a new chain link maintenance gate in Soccer Field area, height to match existing, as per Drawing B.22-G17.

E25.1.2 Any materials that are deemed to be in good working condition should be re-used where appropriate.

E25.1.3 All existing fence posts which are removed shall have the holes backfilled with compacted sand to 150mm below finish grade. Fill balance of hole with topsoil and seed/sod as specified.

E25.2 Method of Measurement and Basis of Payment.

E25.2.1 Method of Measurement shall be as follows:

- (a) Chain Link Fencing shall be measured on lump sum basis for:
 - (i) "Repair to maintenance gate and new 1.22m long section of fencing in Nature Grounds" on Form B: Prices.
- (b) Chain Link Fencing shall be measured on a per unit basis for:
 - (i) "Supply and Install chain-link baffle gate in Nature Grounds"; and
 - (ii) "Supply and Install chain link maintenance gate in Field area"; on Form B: Prices.
- (c) Chain Link Fencing shall be measured on a linear metre basis for:
 - (i) "Supply and Install new chain-link fencing in Nature Grounds" on Form B: Prices.

E25.2.2 Basis of Payment shall be as follows:

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

E26. BOLLARD FENCE

E26.1 Description

E26.1.1 This Specification will cover the supply and installation of a bollard fencing as per SCD-105BR and as shown on the drawings. There are two (2) wider spaced areas in which chain is required in order to create a construction access to the site, as shown on drawings. This specification will cover supply and installation of all labour, materials, equipment and services necessary for the supply and installation of a bollard fence as shown on the drawings.

E26.2 Materials

- (a) Wood bollard posts shall be Western Red Cedar, free of bark, solid core, air dried, pentachlophenol dipped after shaping and drilling- or Manitoba Pine, free of bark, solid core, rough not turned and boliden treated under pressure.
- (b) Chain shall be 6mm galvanized chain as per SCD-105AR.
 - (i) Approximate length of chain shall total 7.3m.
- (c) 6mm down limestone.
- (d) Bollard posts shall be to the size and dimensions as indicated on the construction drawings.

E26.3 Construction Methods

E26.3.1 Installation of wood bollards shall be as per SCD-105BR.

- (a) Bollards shall be installed true and plumb.
- (b) Tops of bollards shall follow final site grades.
- (c) Backfill bollard excavations with 6mm down limestone. Tamp material thoroughly.

E26.3.2 Installation of bollard and chain, in two locations, shall be as per SCD-105AR.

E26.4 Method of Measurement and Basis of Payment

E26.4.1 Method of Measurement shall be as follows:

- (a) The supply and installation of Bollard Fencing shall be measured on a per item basis for:
 - (i) "Supply and Install Bollards" on Form B: Prices.

E26.4.2 Basis of Payment shall be as follows:

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

E27. SITE FURNITURE

E27.1 Description

E27.1.1 This specification shall cover the supply and installation of four (5) metal slat waste receptacles, one (1) wire mesh waste receptacle, seven (7) benches w/ backs, six (6) backless benches, three (3) accessible picnic tables, and one (1) picnic table. It shall also cover the pick up and installation of four (4) raised planters.

E27.1.2 The Contractor shall furnish all labour, materials, equipment and services necessary to complete the Work as shown on Drawings and specified herein. Supply includes pick up and payment from source identified below.

E27.2 Materials

E27.2.1 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.

E27.2.2 Site Furniture shall be:

- (a) Waste Receptacles:
 - (i) Metal Slat Type, as per SCD 119, Product #52501062, or substitute approved in accordance with B6.
 - (ii) Wire Mesh Basket, as per SCD 106, Product #52501051, or substitute approved in accordance with B6.

(b) Picnic Tables:

- (i) Tache Style Wheelchair Metal Frame Picnic Table, as per SCD 103A, Product #52501108 or approved equal in accordance with B6.
- (ii) Tache Style Metal Frame Picnic Table, as per SCD 130 or approved equal in accordance with B6.

(c) Benches:

- (i) Cascade Contour Benches, 72" long, brown recycled plastic (#232), with inground mounting and three (3) armrests, or approved equal in accordance with B6.
- (ii) Backless Benches: Cascade Contour Benches, 72" long, brown recycled plastic (#232), with inground mounting, or approved equal in accordance with B6.

(d) Raised Planters:

- (i) 4'x8' Raised Multi-Level Accessible Planter, as per SCD 653A or approved equal in accordance with B6.
- (ii) 4'x13' Raised Multi-Level Accessible Planter, as per SCD 653B or approved equal in accordance with B6.

E27.2.3

Contact for Waste Receptacles, Picnic Tables, and Raised Planters:

Aaron Lennon
Supervisor of Central Repair/Manufacturing Facility
City of Winnipeg
Fleet Management Agency Division
Public Works Department
215 Tecumseh St
Winnipeg, MB R3E 3S4
Email: ALennon@winnipeg.ca

E27.2.4

Contact for Benches:

Playgrounds-R-Us
250 Transport Rd.
Box 7, Grp. 582, R.R. #5
Winnipeg, MB R2C-2Z2
Ph: (204) 632-7000
Fax (204) 632-7421

E27.3

Construction Methods

- (a) All Work is to be located and installed in accordance with the Drawings and following manufacturers instructions, using approved non-rusting, vandal resistant fasteners to ensure solid, durable, finished work suitable for the purpose intended. Fasteners and assembly hardware shall be incidental to the Work;
- (b) All furnishings and fixtures to be installed plumb and true to correct elevations and location, as directed by the Contract Administrator. The Contractor shall confirm proposed locations of all site furnishings with Contract Administrator prior to installation;
- (c) All furnishings and fixtures to be carefully handled so that no parts will be bent, broken or otherwise damaged. Hammering is prohibited;
- (d) Install as per manufacturer's instructions and the attached drawings;
- (e) Picnic tables shall be installed with two (2) duckbill anchors each. The cost of the duckbill anchors shall be incidental to the cost of the picnic tables.
- (f) Picnic tables installed within pre-cast paver sitting area shall be installed with duckbill anchors and paving stones to be installed around secured in place tables.

E27.4 Method of Measurement and Basis of Payment

E27.4.1 Method of Measurement shall be as follows:

- (a) Site Furniture will be measured on a per unit basis for the following items:
 - (i) "Supply and install composite cascade benches with arms";
 - (ii) "Supply and Install Composite Cascade Backless Benches";
 - (iii) "Supply and Install Accessible Picnic Table w/ duckbill anchors";
 - (iv) "Supply and Install Picnic Table w/ duckbill anchors";
 - (v) "Supply and Install Metal Slat waste baskets";
 - (vi) "Supply and install wire mesh waste receptacle"; and
 - (vii) "Pick up and install raised planters" on Form B: Prices.

E27.4.2 Basis of Payment shall be as follows:

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