



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 352-2014

**CENTRAL COMMUNITY CENTRE / FREIGHT HOUSE – PLAYGROUND AND
SKATEPARK DEVELOPMENT**

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	3

PART B - BIDDING PROCEDURES

B1. Contract Title	1
B2. Submission Deadline	1
B3. Site Investigation	1
B4. Enquiries	1
B5. Confidentiality	1
B6. Addenda	2
B7. Substitutes	2
B8. Bid Components	3
B9. Bid	4
B10. Prices	4
B11. Qualification	5
B12. Opening of Bids and Release of Information	5
B13. Irrevocable Bid	6
B14. Withdrawal of Bids	6
B15. Evaluation of Bids	6
B16. Award of Contract	7

PART C - GENERAL CONDITIONS

C0. General Conditions	1
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PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Contract Administrator	1
D4. Contractor's Supervisor	1
D5. Ownership of Information, Confidentiality and Non Disclosure	1
D6. Notices	2

Submissions

D7. Authority to Carry on Business	2
D8. Safe Work Plan	2
D9. Insurance	3
D10. Performance Security	3
D11. Subcontractor List	3
D12. Detailed Work Schedule	4

Schedule of Work

D13. Commencement	4
D14. Substantial Performance	5
D15. Total Performance	5
D16. Liquidated Damages	5
D17. Scheduled Maintenance	5

Control of Work

D18. Job Meetings	6
D19. Drawings and Specifications	6
D20. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	6
D21. The Workplace Safety and Health Act (Manitoba) – Qualifications	6

Measurement and Payment

D22. Invoices	6
D23. Payment	6

Warranty

D24. Warranty	6
Form H1: Performance Bond	7
Form H2: Irrevocable Standby Letter of Credit	9
Form J: Subcontractor List	11

PART E - SPECIFICATIONS

General

E1. Applicable Specifications and Drawings	1
E2. Soils Investigation Report	1
E3. Hazardous Materials	1

General Requirements

E4. Permits, Notices, Licenses, Certificates, Laws And Rules	1
E5. Protection of Survey Infrastructure	2
E6. Damage To Existing Structures And Property	2
E7. Existing Services and Utilities	2
E8. Protection of Existing Trees	2
E9. Temporary Utilities	3
E10. Site Access	3
E11. Site Enclosures	3
E12. Layout	3
E13. Samples	4
E14. Test Reports	4
E15. Site Restoration	4

Site Development

E16. Removals	4
E17. Site Grading	5
E18. Site Preparation for the Play Areas	6
E19. Sub-Surface Drainage System	7
E20. Wood Fibre Protective Surfacing	10
E21. Poured-in Place Concrete Edging	11
E22. Concrete Paving	12
E23. Entrance Steps	13
E24. Rock Work	13
E25. Topsoil and Sodding	14
E26. Shrub Planting	15
E27. Foundations	16
E28. Site Furniture	16

Play Equipment

E29. General	18
E30. Canadian Standards Association	18
E31. Maintenance Kits	18
E32. Playstructure	18
E33. Independent Play Components	20
E34. Swings	22

Skatepark

E35. General	23
E36. Precast Skatepark Elements	23
E37. Shop Drawings	24
E38. Protection	24
E39. Base Preparation for Concrete Works	24
E40. Concrete Work	25
E41. Joint Sealant	28

Metal Work

E42. Miscellaneous Metals	30
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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 CENTRAL COMMUNITY CENTRE / FREIGHT HOUSE – PLAYGROUND AND SKATEPARK DEVELOPMENT

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, April 29, 2014.

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

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

B3. SITE INVESTIGATION

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

B4. ENQUIRIES

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

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

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

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

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

B5. CONFIDENTIALITY

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

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

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

B6. ADDENDA

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

B7. SUBSTITUTES

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

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

B8. BID COMPONENTS

- B8.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices.
- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B8.4 The Bid Submission may be submitted by mail, courier or personal delivery, or by facsimile transmission.
- B8.5 If the Bid Submission is submitted by mail, courier or personal delivery, it shall be enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address, and shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg, MB R3B 1J1
- B8.5.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B8.6 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.
- B8.7 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B15.1(a).
- B8.8 If the Bid Submission is submitted by facsimile transmission, it shall be submitted to 204 949-1178.
- B8.8.1 The Bidder is advised that the City cannot take responsibility for the availability of the facsimile machine at any time.

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

B9. BID

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

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

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

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

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

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

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

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

B9.4.2 All signatures shall be original.

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

B10. PRICES

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

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

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

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

B11. QUALIFICATION

B11.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and
- (b) be financially capable of carrying out the terms of the Contract; and
- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

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

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

B11.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

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

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

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

B11.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B11.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

B12.1 Bids will not be opened publicly.

- B12.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B12.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>
- B12.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B13. IRREVOCABLE BID

- B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 9 of Form A: Bid.
- B13.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work for the time period specified in Paragraph 9 of Form A: Bid.

B14. WITHDRAWAL OF BIDS

- B14.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B14.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 10 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Bid withdrawn.
- B14.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B13.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law.

B15. EVALUATION OF BIDS

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

(d) economic analysis of any approved alternative pursuant to B7.

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

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

B15.4 Further to B15.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices 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 items 29, 20, 19, 18, 17 and 16 in the order listed, until a Total Bid Price within the budgetary provision is achieved.

B15.4.1 Further to B15.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B16. AWARD OF CONTRACT

B16.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B16.2.1 Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:

- (a) the prices exceed the available City funds for the Work;
- (b) the prices are materially in excess of the prices received for similar work in the past;
- (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
- (d) only one Bid is received; or
- (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B16.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B15.

B16.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

B16.4 Notwithstanding C4, the City will issue a Purchase Order to the successful Bidder in lieu of the execution of a Contract.

B16.5 The Contract, as defined in C1.1, in its entirety shall be deemed to be incorporated in and to form a part of the Purchase Order notwithstanding that it is not necessarily attached to or accompany said Purchase Order.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of the development of a playground and skatepark at Central Community Centre / Freight House, 200 Isabel Street, Winnipeg.

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

- (a) Removal of asphalt paving and associated base materials;
- (b) Supply and installation of concrete paving for the pathways and skatepark plazas;
- (c) Supply and installation of concrete curbs for the playground;
- (d) Supply and installation of engineered wood fibre safety surfacing and associated drainage system;
- (e) Supply and installation of play equipment;
- (f) Supply and installation of precast concrete skatepark elements;
- (g) Supply and installation of steel park entrance features;
- (h) Supply and installation of site furniture;
- (i) Supply and installation of site grading, topsoil and sodding.

D3. CONTRACT ADMINISTRATOR

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

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

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

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

D4. CONTRACTOR'S SUPERVISOR

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

D5. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

D5.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.

D5.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

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

D6. NOTICES

- D6.1 Except as provided for in C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.
- D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3, D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the e-mail address identified in D3.1.
- D6.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following facsimile number:
- The City of Winnipeg
Chief Financial Officer
Facsimile No.: 204 949-1174
- D6.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following facsimile number:
- The City of Winnipeg
Legal Services Department
Attn: Director of Legal Services
Facsimile No.: 204 947-9155

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

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

D8. SAFE WORK PLAN

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

D9. INSURANCE

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

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg and David Wagner Associates Inc. added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
- (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence;
- (c) all risks installation floater, carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.

D9.2 Deductibles shall be borne by the Contractor.

D9.3 The Contractor shall provide the Contract Administrator with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than seven (7) Calendar Days from notification of the award of Contract by Purchase Order.

D9.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D10. PERFORMANCE SECURITY

D10.1 If the Contract Price exceeds twenty-five thousand dollars (\$25,000.00), the Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

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

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

D10.2 The Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of Purchase Order and prior to the commencement of any Work on the Site.

D11. SUBCONTRACTOR LIST

D11.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than seven (7) Calendar Days from notification of the award of Contract.

D12. DETAILED WORK SCHEDULE

- D12.1 The Bidder shall provide a detailed work schedule 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 C4.1 for the return of the executed Contract..
- D12.2 The detailed work schedule shall consist of, but not be limited to, the following:
- (a) Ordering of play equipment and precast skatepark elements;
 - (b) Delivery of play equipment and precast skatepark elements;
 - (c) Start of Work on Site;
 - (d) Excavation and site preparation;
 - (e) Installation of base materials and concrete curbs and sidewalk paving;
 - (f) Installation of play equipment and safety surfacing;
 - (g) Installation of concrete bases, precast skatepark elements and concrete paving;
 - (h) Installation of entrance features;
 - (i) Site development and site restoration;
 - (j) Completion.

SCHEDULE OF WORK

D13. COMMENCEMENT

- D13.1 The Contractor shall not commence any Work until he/she is in receipt of a Purchase Order from the Award Authority authorizing the commencement of the Work.
- D13.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D7;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D8;
 - (iv) evidence of the insurance specified in D9;
 - (v) the performance security specified in D10;
 - (vi) the Subcontractor list specified in D11; and
 - (vii) the Detailed Work Schedule specified in D12.
 - (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.
- D13.3 The Contractor shall order the precast skatepark elements within seven (7) Calendar Days of receipt of the Purchase Order and provide the Contract Administrator with written confirmation of the delivery date(s). Note: precast skatepark elements take \pm 12 weeks for delivery.
- D13.4 The Contractor shall order the play equipment within seven (7) Calendar Days of receipt of the Purchase Order and provide the Contract Administrator with written confirmation of the delivery date(s).
- D13.5 The City intends to award this Contract by May 29, 2014.
- D13.5.1 If the actual date of award is later than the intended date, the dates specified for Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D14. SUBSTANTIAL PERFORMANCE

- D14.1 The Contractor shall achieve Substantial Performance by September 5, 2014.
- D14.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.
- D14.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D15. TOTAL PERFORMANCE

- D15.1 The Contractor shall achieve Total Performance by September 12, 2014.
- D15.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.
- D15.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D16. LIQUIDATED DAMAGES

- D16.1 If the Contractor fails to achieve Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City five hundred dollars (\$500) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.
- D16.2 The amount specified for liquidated damages in D16.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Total Performance by the day fixed herein for same.
- D16.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D17. SCHEDULED MAINTENANCE

- D17.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:
- (a) Sodding as specified in E25.4;
 - (b) Shrubs and shrub beds as specified in E26.4.
- D17.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

CONTROL OF WORK

D18. JOB MEETINGS

- D18.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.
- D18.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

D19. DRAWINGS AND SPECIFICATIONS

- D19.1 The Contractor shall maintain one full size set of Drawings and Specifications on Site at all times during construction. This shall include shop drawings, details and any other drawings produced in the course of the project.
- D19.2 The Contractor shall maintain a set of record drawings on Site marking all Changes in Work to be submitted to the Contract Administrator at Total Performance. No payment shall be made for record drawings.

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

- D20.1 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).

D21. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

- D21.1 Further to B11.4, the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require updated proof of compliance, as set out in B11.4.

MEASUREMENT AND PAYMENT

D22. INVOICES

- D22.1 Further to C12, the Contractor shall not be required to submit any invoices.

D23. PAYMENT

- D23.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D24. WARRANTY

- D24.1 Warranty is as stated in C13.
- D24.2 Manufacturer's warranties on precast skatepark elements and play equipment shall apply.

FORM H1: PERFORMANCE BOND
(See D10)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

BID OPPORTUNITY NO. 352-2014

CENTRAL COMMUNITY CENTRE / FREIGHT HOUSE – PLAYGROUND AND SKATEPARK
DEVELOPMENT

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

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

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

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

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

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

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

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

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 352-2014

CENTRAL COMMUNITY CENTRE / FREIGHT HOUSE – PLAYGROUND AND SKATEPARK
DEVELOPMENT

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
L0	Cover Page
L1	Existing Conditions and Removals Plan
L2	Development Plan
L3	Materials Plan
L4	Layout Plan
L5	Grading Schematic Plan
L6	Playground Plans and Details
L7	Skatepark Plans and Details
L8	Entrance Plans and Details
L-SS1	Site Survey

E2. SOILS INVESTIGATION REPORT

- E2.1 Further to C3.1, the following reports are available from the Contract Administrator:
- (a) Geotechnical Investigation by The National Testing Laboratories Limited, September 12, 2005; and
 - (b) Geotechnical Investigation by Dyregrov Robinson Inc, May 15, 2013.

E3. HAZARDOUS MATERIALS

- E3.1 If asbestos or other hazardous materials are encountered during the Work of the Contract, the Contractor shall stop all work and notify the Contract Administrator immediately. Removal of hazardous materials shall be dealt with by the City and the Contractor shall await further instruction by the Contract Administrator.

GENERAL REQUIREMENTS

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

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

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

E5. PROTECTION OF SURVEY INFRASTRUCTURE

- E5.1 Further to CW1130, the location of survey monuments are shown on Drawing L1. This information was obtained in 2013 and will require updating by the Contractor.
- (i) Geomatics Job Number is 20130119.
 - (ii) Geomatics Branch is to be contacted at least 5 Working Days in advance of construction, at 204-918-1360, to schedule an appointment to provide the monument protection services required.

E6. DAMAGE TO EXISTING STRUCTURES AND PROPERTY

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

E7. EXISTING SERVICES AND UTILITIES

- E7.1 No responsibility will be assumed by the Owner for correctness or completeness of the Drawings, when provided, with respect to the existing utilities, pipes or other objects either underground or on the surface; the Owner shall not be liable for the incorrectness and inadequacy thereof. It shall be the responsibility of the Contractor to determine the location of all such utilities, pipes and other objects and to make good any damage done to them.

E8. PROTECTION OF EXISTING TREES

- E8.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing trees within the limits of the construction area:
- (a) Trees identified to be at risk by the Contract Administrator are to be strapped with 25x100x2440 mm wood planks, or other suitable protection as approved by the Contract Administrator. Do not use nails or other fasteners that penetrate the tree trunk. The width and length of strapping may be reduced to suit the tree being protected as approved by the Contract Administrator.
 - (b) Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the

excavation shall be a minimum of 1.5 times the diameter (measured in inches) where 1 inch diameter equals 1 foot measured from the outside edge of the trunk of the tree at 6 inches above grade. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.

- (c) Equipment shall not be operated within the drip line without written permission from the Contract Administrator. 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 entire ground surface located directly beneath the tree and radiating out to the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
- (d) Repair, replace and maintain tree protection materials during construction until the Project completion.
- (e) Carefully remove safety fencing and strapping material without harming the trees as soon as the construction and restoration Work is complete.

E9. TEMPORARY UTILITIES

- E9.1 Further to C: 6.12, the Contractor shall make his own arrangements in connection with the temporary use of lighting, power, gas, sewer, water or other utilities, and pay all costs in connection therewith.
- E9.2 All necessary permits, fees and other like expenses as well as the cost of temporary connections to existing facilities shall be arranged and paid for by the Contractor.

E10. SITE ACCESS

- E10.1 Contractors are to work only within the Construction Boundary as shown on the Drawings or as directed by the Contract Administrator.
 - (a) The swimming pool shall be operational from July 1 to September 1, 2014.
 - (b) The Contractor shall maintain safe access to and from the swimming pool for maintenance vehicles and the user public.
- E10.2 Access to the Site will be determined at the pre-construction meeting. The access area(s) shall be maintained and restored by the Contractor at his own expense and approved by the Contract Administrator.
- E10.3 The Contractor shall be restricted to the Site access locations and routes only so that there is a minimum of disturbance to the existing ground surface. Damage to areas beyond the marked routes shall be repaired by and at the expense of the Contractor to the satisfaction of the Contract Administrator.
- E10.4 Where access must be gained through existing fencing, the fences shall be repaired by and at the expense of the Contractor to the satisfaction of the Contract Administrator.

E11. SITE ENCLOSURES

- E11.1 Temporary Site enclosures, as determined at the pre-construction meeting, shall be erected and maintained as required for the duration of the construction period.
- E11.2 Refer to E10 and E38 for other requirements.
- E11.3 Site enclosures shall be considered incidental to the Contract Work.

E12. LAYOUT

- E12.1 The Contractor is responsible for the layout of all Work.

E12.2 The Contract Administrator shall be advised of the staking of the layout at least twenty-four (24) hours in advance in order that the layout may be inspected and adjusted as required prior to construction.

E13. SAMPLES

E13.1 Samples called for in the Specification or requested by the Contract Administrator shall be submitted within fifteen (15) Calendar Days of request.

- (a) Identify samples with name of project, date, name of Contractor, name of supplier/manufacturer and use of material represented by sample.
- (b) Do not proceed with delivery of materials until samples are reviewed by the Contract Administrator. No deviation is permitted after approval of sample.
- (c) Approval of samples does not imply acceptance of finished Work.
- (d) Where required, submit a range of samples, as may be reasonable.

E14. TEST REPORTS

E14.1 Where required by the Contract Administrator, the Contractor shall provide certified copies of tests upon materials to be used in construction of the Work, indicating that the materials comply with the Specifications.

E14.2 Submit test results to the Contract Administrator within ten (10) Calendar Days of request.

E14.3 All testing costs shall be the responsibility of the Contractor.

E15. SITE RESTORATION

E15.1 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.

SITE DEVELOPMENT

E16. REMOVALS

E16.1 General Description

- (a) This specification shall cover the removal of the following:
 - (i) Asphalt paving and any associated base materials.
 - (ii) Concrete sidewalk and any associated base materials.
 - (iii) Tree removal.
- (b) It shall also cover the removal of turf and any other demolition and removal necessary to construct the project, which may be considered incidental to other items of Work.

E16.2 Work by Others

- (a) Removals by the City of Winnipeg:
 - (i) Sun shelter;
 - (ii) Site furniture;
 - (iii) Play equipment and associated edging;
 - (iv) Fencing

- (b) The Contractor is to advise the Contract Administrator of the expected start date at least ten (10) Working Days in advance so that the removals can be done.

E16.3 Methods

- (a) Removal of Paving and Associated Base Materials
 - (i) As per CW3110.
 - (ii) Asphalt shall be sawcut to separate asphalt to remain from asphalt to be removed.
 - (iii) Asphalt is to be removed from areas designated on the Drawings, taking care to preserve adjacent paving surfaces that are to remain.
 - (iv) The section of concrete sidewalk is to be removed from area designated on the Drawings, taking care to preserve adjacent sidewalk surfaces that are to remain.
 - (v) Base materials are to be removed as well as rubble, stones, silt, rubbish and any surplus material as required to prepare the subgrade to receive new surfaces as shown on the Drawings.
- (b) Removal of Tree
 - (i) One poplar tree shall be removed including the roots as indicated on the Drawings.
 - (ii) As per CW 3010.
- (c) Removal of existing turf for the construction of new pathways, play areas, skatepark plazas or other surfaces shall be considered incidental to the construction of those Works.
- (d) All materials, to be demolished and removed, are to be removed from the Site and disposed of in a safe and legal manner. Excavated materials shall be recycled or legally disposed of off-site.

E16.4 Site Restoration

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

E16.5 Basis of Payment

- (a) Payment for Work specified under this section shall be paid at the Unit Price, measured on a square metre basis, for the Items of Work listed below, which price shall include all costs of removal and proper disposal, and any associated Site restoration.
- (b) Items of Work:
 - (i) Removal of Asphalt and Concrete Paving, and Base Materials
 - (ii) Tree Removal

E17. SITE GRADING

E17.1 General Description

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

E17.2 Methods

- (a) The construction area is to be excavated or filled to achieve rough grade.
 - (i) Rough grade is to be to levels, profiles and contours allowing for surface treatment as indicated on Drawings.

- (b) Base preparation and associated site grading for the concrete skatepark plaza is specified under E39.
- (c) Wherever the proposed Site grading is to meet existing Site grades, the grades are to match and positive Site drainage is to be maintained. Where sloped areas meet flat areas, at both top and bottom of slopes, the transition shall be rounded to the extent that future maintenance by turf mowing equipment can be easily done.
- (d) In fill areas, the Contractor shall scarify the existing ground to a minimum depth of 150mm prior to the placement of any fill. Should imported clean fill be required, it shall be considered incidental to the Work.
- (e) The excavated material from the development of the skatepark plaza may be used in the construction of the berms if deemed suitable fill material as per CW 3170.
- (f) Compaction shall include the use of sheep's foot or other suitable compaction equipment as approved by the Contractor to achieve a minimum compaction of 95% Proctor Density.
- (g) All surplus or unsuitable materials shall be disposed of off Site in a legal manner and as directed by the Contractor.
- (h) Following rough grading and compaction, the Work area shall be fine graded to provide a maximum deviation of 25mm in 10m from the design grade with no low areas to hold water. The finished surface of all disturbed areas shall be dragged smooth in such a manner that there are no loose soil particles greater than 25mm in maximum dimensions.

E17.3 Basis of Payment

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

E18. SITE PREPARATION FOR THE PLAY AREAS

E18.1 General Description

- (a) This specification shall cover:
 - (i) The excavation and removal of existing sand surfacing.
 - (ii) The preparation of play areas to receive new edging and protective surfacing.

E18.2 Excavation and Removals

- (a) Sand surfacing from existing play areas, and any other extraneous materials, shall be removed from the Site and disposed of in a safe and legal manner.
- (b) Sand surfacing shall be removed to the depths required by the new Works in those locations:
 - (i) Play areas, refer to E18.3.
 - (ii) Areas that are to be sodded are to be prepared to the depth required for topsoil and sod as specified in E25. This Work shall be incidental to the Topsoil and Sodding.
 - (iii) Areas that are to receive Concrete Paving are to be prepared to the depth required for the specified paving. This Work shall be incidental to the Concrete Paving.

E18.3 Site Preparation of Play Areas

- (a) The new play areas are to be excavated or filled to achieve the grades required for the installation of concrete edging and correct depth of protective surfacing as shown on the Drawings and as required E20. All extraneous materials are to be removed from the Site and disposed of in a safe and legal manner.
- (b) The elevations of the sub-grade (mud grade) of the play area are to be as required for the correct installation of the wood protective surfacing and as determined in consultation with the Play Equipment Installer and the Contract Administrator.
 - (i) Sub-grade is to slope to drain towards the sub-surface drainage system as specified in E19

- (ii) Grades around the perimeter of the play area are to be as shown on the Drawings and the preparation of those grades shall be incidental to the Work associated with those areas.
- (iii) Should imported clean fill be required, it shall be considered incidental to the Work.

E18.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a square metre basis, which price shall include all costs of excavation, imported fill, proper disposal of extraneous materials, rough grading and any associated Site restoration.
- (b) Items of Work:
 - (i) Site Preparation of Play Areas

E19. SUB-SURFACE DRAINAGE SYSTEM

E19.1 General Description

- (a) Further to CW 3120, this specification shall cover the sub-surface drainage systems:
 - (i) The supply and installation of a geocomposite prefabricated drainage system to take water out of the play areas and the connection to the existing catch basins, as shown on the Drawings. This drainage system is in addition to any sub-surface drainage called for by the manufacturer of the play safety surfacing.
 - (ii) The complete drainage system behind the vertical elements of the skatepark.

E19.2 Materials

- (a) Multi-Flow Drain System - Playground
 - (i) Drainage pipe shall be Multi-Flow or approved substitute in accordance with B7. Size shall be 150mm as shown on Drawings. All fittings shall be sized to fit and approved for use with Multi-Flow or approved substitute by the manufacturer.
 - (ii) The drain conduit shall be of flexible, prefabricated, rounded rectangular shaped, composite product. The drain conduit shall be wrapped with a non-woven geotextile and shall be a non-woven needle-punched construction and consist of long-chain polymeric fibres composed of polypropylene, polyethylene or polyamide. The fibres shall be oriented into a multi-directional stable network whereby they retain their positions relative with each other and allow the passage of water as specified. The fabric shall be free of any chemical treatment or coating, which reduces permeability and shall be inert to chemicals commonly found in soil. The geotextile shall conform to the following minimum average roll values:

Weight	ASTM D-3776	3.0 – 4.0
Tensile Strength	ASTM D-4632	100 - 130
Elongation %	ASTM D-4632	50 - 70
Puncture, lb	ASTM D-751	35 - 60
Mullen Burst, psi	ASTM D-3786	110 - 215
Trapezoidal Tear, lb	ASTM D-4533	40 - 42
Coefficient of Permeability	ASTM D-4491	.2 - .4 cm/sec
Flow Rate, gpm/ft ²	ASTM D-4491	100 - 140
Permittivity, 1/sec	ASTM D-4491	1.3 – 2.0
Apparent Opening Size	ASTM D-4751	60/70 Max. US Std Sieve Opening
Seam Strength, lb/ft	ASTM D-4595	100
Fungus	ASTM G-21	No Growth

- (iii) The drainage core shall be made of a high-density polyethylene. The core shall be constructed using interconnected corrugated pipes that define and provide the flow channels and structural integrity of the system. The geotextile shall function only as a filter. The core of the conduit shall conform to the following physical property requirements:

Thickness, inches	ASTM D-1777	1.0
Flow rate, gpm/ft***	ASTM D-4716	30
Compressive Strength, psf	ASTM D-1621 (modified sand method)	6000
Pipe Stiffness, pii	ASTM D-2412	100

*** At gradient = 0.1, pressure = 10 psi for 100 hours.

- (b) Fittings
 - (i) The fittings used with the drainage system shall be of a snap together design. In no case shall any product be joined without the use of the manufacturer's connector designed specifically for the purpose.
- (c) Drain Pipe - Skatepark
 - (i) Big 'O' - 100mm high density polyethylene perforated corrugated tubing c/w sock, or approved substitute in accordance with B7.
 - (ii) Fittings as specified by the manufacturer.
 - (iii) The uphill end of the pipe shall be capped.
- (d) Outlet Pipe
 - (i) Pipe for drain outlets shall be 100mm either PVC pipe meeting the requirements of ASTM D-2729 or ASTM F-949, or high density polyethylene pipe meeting the requirements of AASHTO M252.2.4. , non-peforated.
 - (ii) A rodent screen made of 7.6 mm by 7.6 mm square opening size, 1.6 mm gauge, stainless steel or galvanized welded mesh shall be installed in each outlet line. When using galvanized welded wire mesh, the rodent screen shall be galvanized after it has been formed to the shape and dimensions required.
- (e) Granular Backfill
 - (i) Backfill for the trenches shall be 6mm clean washed pea stone.
- (f) Geotextile Fabric, non-woven, to CW 3130.
- (g) Emitter
 - (i) Shall be a 75mm (3") polyolefin pop-up drainage emitter with elbow joint, product reference no. NDS# 620 or approved substitute in accordance with B7. Drain pipe shall be connected to emitter by using manufacturer's adaptor for connecting drainage pipe to 75mm or 100mm round orifice on appropriate hardware.
 - (ii) Contact for Emitter:
 - Consolidated Turf
 - 986 Powell Avenue
 - Winnipeg, Manitoba
 - R3H 0H6
 - Tel: 1-204-633-7276

E19.3 Methods – Playground Drain System

- (a) The Work shall be as per SCD-650 and SCD-659.
- (b) The layout of the sub-drain and proposed elevations are to be marked on Site and reviewed by the Contract Administrator. The multi-flow pipe may be installed vertically or horizontally as required by the grades.

- (c) The layout of the sub-drain is to be coordinated with the layout of the play equipment so that there is no conflict between the sub-drain and the post holes.
- (d) Sub-drain is to be installed on the prepared surface to facilitate cross movement of water. Sub-drain shall be installed below geotextile and as shown on the Drawings.
 - (i) Play area is to be graded to drain towards the sub-drain. This sub-drain is to be used in conjunction with the appropriate wood fibre drainage system to bring water out of the play area.
 - (ii) The geotextile shall be considered incidental to the Wood Fibre Protective Surfacing.
- (e) Trenches are to be excavated with a trenching machine or by hand. Locations, where the trench crosses existing utilities, irrigation pipes and all other sub-surface pipes or fixtures, are to be excavated by hand. The amount of trench excavated at any time shall not exceed the amount of drain that can be set and backfilled completely prior to the end of that Working Day. Trench width shall be as specified on the Drawings.
- (f) The bottom surface of the trench is to be free of loose particles and is to have the slope shown on the Drawings. Over excavation in the bottom of the trench shall be backfilled to the proper grade with the excavated material or sand prior to the placement of the drain. Where sand or excavated material is used to fill the trench to the proper elevation that material shall be compacted to 95% of standard proctor density using appropriate means. Where the trench is to pass through an area of existing turf, the excavated material is not to remain on the grassed surface for a period of longer than 24 hours. All excavated material shall be removed from the Site daily and disposed of legally.
- (g) Trenches are to be inspected by the Contract Administrator prior to backfilling.
- (h) Multi-Flow drain pipe is to be placed in the trench and the trench is to be backfilled according to detail Drawings. Backfill is to be lightly tamped into place to eliminate any voids.
- (i) Fittings for the drain shall be installed in accordance with manufacturer's recommendations.
- (j) Contractor is to protect the subdrain from excessive weight during the duration of construction. Any damaged drain system shall be replaced or repaired by splicing in an undamaged section of like material at the Contractor's expense.
- (k) Sub-surface drainage required as part of the safety surfacing installation shall be considered incidental to the Wood Fibre Protective Surfacing.

E19.4 Methods – Skatepark Drain System

- (a) The layout of the sub-drain systems associated with the skatepark plaza is to be marked on Site and approved by the Contract Administrator prior to construction of this item.
- (b) Drainage systems are to be installed as shown on the Drawings and as per CW 3120.
- (c) Work is to include the supply and installation of drain stone and geotextile behind the concrete walls.
- (d) The drain pipe is to be connected to the emitter.
- (e) Work is to be coordinated with base preparation and installation of the precast elements for the skatepark.

E19.5 Work on Existing Catch Basins

- (a) The existing catch basins shall be inspected prior to having any work done on them and any damage found shall be reported to the Contract Administrator.
- (b) Prior to completion of the project the Contractor shall clean out the catch basins of all debris.
- (c) The Contractor shall be responsible for restoration of any damages caused during the Work under this section.
- (d) Connections to the existing catch basin shall be below the ground surface and grouted into place as per CW 2130 and SD-025.

E19.6 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a lump sum basis, for the Items of Work listed below, which price shall include all costs of material supply, piping, fittings, trenching, proper material installation, backfill, connection to catch basin, Site restoration and all other items incidental to the Work.
- (b) Items of Work
 - (i) Playground Drain System and Connection to Catch Basins
 - (ii) Skatepark Drain System c/w Emitter

E20. WOOD FIBRE PROTECTIVE SURFACING

E20.1 Description

- (a) This specification shall cover the supply and installation of engineered wood fibre protective surfacing and associated sub-surface drainage.

E20.2 Materials

- (a) Wood Fibre product shall be either Zeagar Woodcarpet or Fibar FibarSystem 200 or 300 products or approved substitute in accordance with B7.
 - (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 Fibar System 200 or 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) If substitute to Zeagar Woodcarpet or Fibar FibarSystem 200 or 300 is proposed, it must meet the following conditions:
 - (i) materials must be IPEMA certified Engineered Wood Fiber
 - (ii) material must consist of random-sized, clean, engineered hardwood chips. Standard wood chips or bark mulch are not acceptable.
 - (iii) materials must meet or exceed ASTM F1292 and CSA Z614 standards for impact attenuation
 - (iv) materials must be certified by the CSA and approved for playground use
 - (v) materials must comply with ASTM F1951 for accessibility under the Canadians with Disabilities Act
 - (vi) materials must be covered by \$10,000,000.00 product liability insurance as well as provide a minimum 10 year warranty against loss of resiliency
- (c) Wood Fibre surfacing shall include wood fibre, non-woven geotextile fabric, subsurface drainage system and mats for bottom of slides and under swings.
- (d) Wood Fibre surfacing shall be supplied by an authorized distributor and delivery slips are to be submitted to the Contract Administrator prior to installation.

E20.3 Methods

- (a) Sub grade preparation shall be inspected by the Contract Administrator prior to installation of safety surfacing.
- (b) Sub-surface drainage Work specified in E19 and as shown on the Drawings shall be coordinated with the protective surfacing drainage system to create a total working system.
- (c) Wood Fibre shall be installed within the play areas, as defined by the concrete edging to a minimum depth of 200 mm (after compaction). In the case of swings and where play equipment includes a maximum fall height greater than 2.4m (8'), depth of material is to directly correspond to maximum fall height of play equipment in accordance with manufacturer's specifications and based on the most recent CSA safety requirements.
- (d) The installation of the Wood Fibre shall be done immediately after the play equipment has been installed.
- (e) Installation of entire system, including fibre, geotextile fabric, subsurface drainage and mats shall be done according manufacturer's instructions. Adequate drainage within play equipment area must be ensured as per same.
- (f) Geotextile fabric must be cut and fit around playground equipment footings and overlap seams by 300mm.
- (g) The mats are to be installed directly on top of the geotextile fabric and secured in place with two (2) duckbill anchors per mat.
- (h) 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 play equipment so as not to damage same. The play equipment shall be swept clean to the satisfaction of the Contract Administrator after installation of the Wood Fibre.

E20.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a square metre basis, for the Items of Work listed below, which price shall include all costs of material supplied for the wood fibre system, sub-grade preparation, associated sub-surface drainage and proper material installation.
- (b) Items of Work:
 - (i) Wood Fibre Protective Surfacing System

E21. POURED-IN PLACE CONCRETE EDGING

E21.1 General Description

- (a) Further to CW 3310, this specification shall cover the supply and installation of poured-in-place concrete edging curb to contain the protective surfacing for the play areas.

E21.2 Materials

- (a) Concrete shall be 30MPa and as per CW3310.
- (b) Granular base shall be compacted 20mm down crushed limestone.
- (c) Reinforcing steel shall be 10M with 10M ties at 600mm O.C.
- (d) Geotextile fabric shall be in accordance with CW 3130 and as shown on the Drawings.

E21.3 Methods

- (a) Layout is to be established on Site after excavation and grading operations and reviewed by the Contract Administrator prior to formwork being completed.
- (b) Layout of edging shall be as shown on the Drawings and as confirmed by the Play Equipment Installer to adequately provide protective surfacing area around play equipment, based on the most recent CSA safety zone requirements.
 - (i) Contractor is to confirm and warrant that the play equipment complete with the required safety zones will fit within the curbs as laid out on Site.

- (c) Granular base, formwork and reinforcing are to be reviewed on Site by the Contract Administrator prior to pouring of concrete.
- (d) The vertical rebar ties are to be set into the granular base.
- (e) Concrete is to be trowel finished. All exposed edges are to be rounded as shown on the Drawings. Front, top and back of curb are to be finished.
- (f) Concrete edging shall drop down 75mm where it meets concrete paving to create an accessible entrance, as shown on the Drawings. It shall also be tied into the thickened concrete of the accessible entrance using rebar.
- (g) Concrete edging shall have saw cut control joints at 1.5m intervals.

E21.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a linear metre basis for the Items of Work listed below, which price shall include all costs of material supply, excavation, sub-grade preparation, proper material installation and any associated Site restoration.
- (b) Items of Work
 - (i) Concrete Edging

E22. CONCRETE PAVING

E22.1 General Description

- (a) Further to CW 3110, CW 3310 and CW 3325, this specification shall cover:
 - (i) The supply and installation of standard concrete paving for the sidewalks and sitting areas as shown on the Drawings.
 - (ii) The reinforced, thickened concrete for the accessible entrances to the play areas shall be considered incidental to the standard concrete paving.
 - (iii) The reinforced concrete paving for the entrance plaza on Isabel Street including the thickened base for the entrance features as shown on the Drawings.
- (b) The concrete paving or flatwork for the skatepark is specified under E40.

E22.2 Materials and Methods for Standard Concrete Paving

- (a) 100mm sidewalk paving to CW 3325.
- (b) Layout, grades and details for concrete sidewalks and sitting areas are to be as shown on the Drawings.
- (c) A thickened edge is to be created at the accessible entrances and the paving is to be rebar tied into the adjacent poured-in-place concrete edging for the play areas.
 - (i) No separate payment for the accessible entrance shall be made.
- (d) Granular base and formwork are to be reviewed on Site by the Contract Administrator prior to pouring of concrete.
- (e) Saw cut locations to be reviewed by the Contract Administrator prior to implementation.

E22.3 Materials and Methods for Reinforced and Thickened Concrete Paving (Entrance Plaza)

- (a) 125mm reinforced sidewalk to CW3310.
- (b) Layout, grades, rebar and details for concrete paving and thickened concrete bases are to be as shown on the Drawings.
- (c) Anchors for the frieze are to be coordinated with the manufacture of the frieze and the Shop Drawings for the entrance features.
- (d) Granular base, formwork and anchors are to be reviewed on Site by the Contract Administrator prior to pouring of concrete.
- (e) Saw cut locations to be reviewed by the Contract Administrator prior to implementation.

E22.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a square metre or lump sum basis, for the Items of Work listed below, which price shall include all costs of base preparation, proper material installation, and any associated Site restoration.
- (b) Items of Work
 - (i) Standard Concrete Paving
 - (ii) Thickened, Reinforced Concrete Paving for Entrance Plaza

E23. ENTRANCE STEPS

E23.1 General Description

- (a) This specification shall cover the supply and installation steps near the entrance feature.

E23.2 Materials

- (a) Barkman Rosetta dimensional steps or approved substitute accordance with B7.
- (b) Size to be 72" x 30" x 7" rise.
- (c) Colour Copper Canyon
- (d) Base material: 20mm down crushed limestone.

E23.3 Methods

- (a) The steps are to be installed according to the Drawings.

E23.4 Basis of Payment

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

E24. ROCK WORK

E24.1 General Description

- (a) This specification shall cover the supply and installation of rocks:
 - (i) Between the play area and the sidewalk.
 - (ii) Within the skatepark.
 - (iii) Entrance feature retaining edge.

E24.2 Materials

- (a) Rectangular limestone blocks from Mariash Quarry, Stonewall, or approved substitute accordance with B7.
- (b) Various sizes ranging from 600 x 600 x 600mm to 600 x 600 x 1500mm.
 - (i) Sharp edges and loose shards are to be removed.
 - (ii) All rocks are to be large and heavy enough so they cannot be easily moved by the public.
- (c) The rocks are to be inspected by the Contract Administrator prior to installation on the Site.

E24.3 Methods

- (a) The various rock works are to be installed according to the Drawings.

- (b) The rocks are to be buried a minimum of 1/4 of their height.
- (c) The rocks adjacent to the play area are to be set tightly together such that children cannot get their feet caught between them. Any gaps between the rocks are to be filled, to a maximum of 2/3 of the rock, with a concrete grout as per CW 3615.
- (d) The rocks within the skatepark are to be installed according to the detail Drawings. The rocks are to be fitted tightly together within the space and against the retaining wall, and to the profile shown on the Drawings. The upper level of rock must sit firmly on top of the lower level and may be glued in place with an adhesive intended for the purpose.
 - (i) Rocks are to slope slightly away from the upper plaza in order that water drains off them.
 - (ii) Any gaps between the rocks, to a maximum of 2/3 of the rock, are to be filled with a concrete grout as per CW 3615.
- (e) The rock edge along the entrance plaza is to be as shown on the detail Drawings.
 - (i) The rocks are to be fitted tightly together forming a retaining edge and to accommodate differences in grade in the area.
 - (ii) Any gaps between the rocks and the concrete paving are to be filled with concrete grout.

E24.4 Basis of Payment

- (a) Payment for Work, specified under this section, shall be paid for at the Unit Price, measured on a lump sum basis, for the Items of Work listed below. The price shall include all costs of excavation, material supply and proper material installation. Rough and final grading and Site restoration work shall be considered incidental to the Work.
- (b) Items of Work:
 - (i) Rock Works at Play Area
 - (ii) Rock Works in Skatepark
 - (iii) Rock Works at Entrance Plaza

E25. TOPSOIL AND SODDING

E25.1 General Description

- (a) This specification shall cover the site preparation and the supply and installation of topsoil and sod.
 - (i) Associated Site grading and the construction of berms shall be considered incidental to this Work.

E25.2 Materials

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

E25.3 Methods

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

- (e) Only those areas shown on the Drawings as New Sodding shall be paid for under this section. All other Site restoration shall be considered incidental to other Works.

E25.4 Maintenance Period

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

E25.5 Basis of Payment

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

E26. SHRUB PLANTING

E26.1 General Description

- (a) This specification shall cover the preparation of planting beds and the supply and installation of shrubs.

E26.2 Materials

- (a) Topsoil: As per CW 3540.
- (b) Plant Material
 - (i) 10 Potentilla fruticosa 'Coronation Triumph' / Coronation Triumph Potentilla
 - (ii) Min. size 40cm. height, full and evenly branched, #2 Container.
 - (iii) Plant material is to be Canadian Prairie nursery grown and meet the specifications set out in the latest Guide Specifications for Nursery Stock prepared by the Canadian Nursery Trades association for size, grading, quality and method of cultivation.
 - (iv) Plant material is to be true to name, structurally sound, well branched, healthy and vigorous; free from disease, insect infestation, and rodent damage; and, densely foliated with a well developed root system.
- (c) Mulch
 - (i) Local wood chip mulch with no items less than 5cm in size in any dimension.

E26.3 Methods

- (a) Shrub beds shall be excavated and scarified to meet the grades required for the installation of topsoil and as shown on the Drawings. The beds shall be excavated for their entire length and not just as pits. Surplus materials shall be removed off-site in a legal manner.
- (b) Rock works along the bed shall be coordinated with the preparation of the beds.
- (c) Topsoil shall be placed and compacted as shown on the Drawings.
- (d) Shrubs shall have their containers removed and be planted to their original growing depth. Plant material shall be planted immediately upon arrival on the site and shall be protected to prevent drying out.
- (e) The watering saucer shall be formed and the plants well watered prior to the placement of the mulch.

E26.4 Maintenance Period

- (a) The Contractor shall maintain the shrubs and shrub beds for 30 Calendar Days after the completion of the installation.

- (b) Any shrubs that do not exhibit strong healthy growth at the end of the maintenance period shall be replaced at no cost to the City.
- (c) Maintenance shall include:
 - (i) Watering: Water shall be applied as required to maintain optimum growing conditions. During dry weather the Contractor shall expect to water on a weekly basis.
 - (ii) Weeding: The Contractor shall maintain the shrub beds in a weed free condition throughout the maintenance period.
 - (iii) Clean-up: The Contractor shall ensure that the adjacent paved areas are cleaned after every watering and weeding procedure, and that the mulch remains neatly in the bed.

E26.5 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a lump sum basis, for the Items of Work listed below, which price shall include all costs of material supply, shrub bed preparation, proper material installation, maintenance and all other items incidental to the Work.
- (b) Items of Work
 - (i) Shrub Planting

E27. FOUNDATIONS

E27.1 All play equipment and site furnishings, unless otherwise specified, are to be set in concrete footings or piles to ensure stability and prevent frost heaving. The current Standard Construction Specifications of the City of Winnipeg, CW 2160 – Concrete Underground Structures and Works, is to be utilized in the installation of the concrete works for all below ground components.

E27.2 The specific concrete requirements shall be;

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

E27.3 Installation

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

E28. SITE FURNITURE

E28.1 General Description

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

E28.2 Materials

- (a) Benches
 - (i) Tache Composite Bench with Arms, **Surface Mount**, Drawing No. SCD-121E, Product #52501071, 1.8 M length (6'), manufactured by the City of Winnipeg, black powdercoat finish for metal and cedar tone for the boards.
 - (ii) Benches are to have three arm rests.

- (b) Waste Receptacles
 - (i) Side Opening Metal Stat Type, as per SCD-119, Product #52501063BLK and #52501058, colour Black, manufactured by the City of Winnipeg.
- (c) Picnic Tables
 - (i) Tache Style Wheelchair Metal Frame Picnic Table, Drawing No. SCD-122A, manufactured by the City of Winnipeg.
 - (ii) Colour: Black for metals, Cedar for boards.
 - (iii) When ordering table, the Contractor is to inform the City that the table will require metal plates welded on for the installation of the table to concrete pavement.
- (d) The contact for City of Winnipeg site furniture is:
 - Aaron Lennon
 - Supervisor of Central Repair/Manufacturing Facility
 - City of Winnipeg
 - Fax No.: (204) 783-1248
 - Email: alennon@winnipeg.ca
- (e) Bike Racks
 - (i) Dero Hoop Bike Rack, Model #HR-EXP-B or approved substitute accordance with B7.
 - (ii) 3 @ In-ground Mount, 3 @ Foot Mount
 - (iii) Colour: Black
 - (iv) Contact: Playgrounds-R-Us
 - (204) 632-7000
 - Email: jodi@pru.ca

E28.3 Methods

- (a) All site furnishings are to be installed according to Drawings and manufacturer's specifications, using approved non-rusting, vandal resistant fasteners to ensure solid, durable, finished work suitable for the purpose intended. Fasteners and assembly hardware shall be incidental to the Work.
- (b) Bike racks
 - (i) The in-ground mount bike racks are to be installed in the asphalt.
 - (ii) The foot mount bike racks are to be installed on the concrete.
 - (iii) Bike racks are to be installed as per manufacturer's specifications using tamper resistant fasteners.
- (c) Foundations as per E27.
- (d) All furnishings are to be installed plumb and true to correct elevations. Surface mount benches are to be shimmed to be level. The Contractor shall confirm proposed locations with the Contract Administrator prior to installation.
- (e) Where site furniture is located on asphalt, the asphalt work is to be completed and inspected prior to installation. The foundation holes are to be neatly formed or cut into the asphalt and the concrete foundations are to be finished cleanly and flush with the asphalt.
- (f) Site furnishings are to be kept clean of any granular, concrete, asphalt or other materials. Any damaged surfaces shall be touched-up to the satisfaction of the Contract Administrator.

E28.4 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the Unit Price, measured on a per unit basis, for the Items of Work listed below, which price shall include all costs of supply and proper material installation. Site restoration work and required foundations shall be considered incidental to the Work.
- (b) Items of Work:

- (i) Benches
- (ii) Waste Receptacles
- (iii) Bike Racks – In-ground Mount
- (iv) Bike Racks – Foot Mount
- (v) Picnic Table

PLAY EQUIPMENT

E29. GENERAL

- E29.1 This specification shall cover the supply and installation of the Play Equipment as listed below and specified herein.
- E29.2 The Contractor shall furnish all labour, materials, equipment and services necessary to complete the Work according to the drawings and specifications.
- E29.3 The Contractor shall be responsible for the layout of all play equipment and thus the extent of the safety surfacing required to comply with CSA standards.
- E29.4 The Contractor shall confirm with the Contract Administrator the final design, layout and colours of the play equipment prior to ordering the equipment.

E30. CANADIAN STANDARDS ASSOCIATION

- E30.1 All playground equipment supplied and the method of installation shall be in accordance with the latest edition of the "National Standard of Canada, CAN/CSA-Z614-14".

E31. MAINTENANCE KITS

- E31.1 All play equipment shall include, at no extra cost, the supply of maintenance kits. Maintenance kits shall include maintenance manuals, complete manufacturer's parts lists, touch-up paint, PVC repair paint, 10% extra of each bolt, washer and any other hardware utilized on the play equipment, and all special tools necessary for assembly and maintenance.

E32. PLAYSTRUCTURE

- E32.1 This specification shall cover the supply and installation of the playstructure, as shown on the Drawings.
- E32.2 Products
 - (a) Landscape Structures Inc custom Playbooster, product # 73613-1-3 and as depicted on the attached Drawings, or approved substitute accordance with B7.
 - (i) The structure shall be for both younger children (ages 2-5) and older children (ages 5-12) and organized as shown on the Drawings.
 - (ii) There shall be a metal slide for each age group.
 - (iii) The playstructure shall be spread out to utilize the play space with linkages between the various components.
 - (iv) At least one slide shall be accessible via a transfer module.
 - (v) The play equipment shall be vandal resistant and provide good visibility from the street with limited solid panels.
- E32.3 Shop Drawings
 - (a) Further to CW 1110, shop drawings shall be submitted to the Contract Administrator for all the play equipment specified in this Section, within seven (7) Calendar Days of receipt of a Purchase Order.

- (b) Shop Drawings shall include, but not be limited to:
 - (i) Layout and configuration of equipment including required safety zones
 - (ii) Colours
 - (iii) Custom graphics or products

E32.4 Materials

- (a) Posts / Caps
 - (i) All posts shall be a minimum of 127 mm (5") O.D. round tubing. All posts shall be fabricated from aluminum (0.125" min. wall thickness) tubing with a baked-on TGIC polyester powder coating. The powder coating finish shall meet or exceed ASTM standards for hardness, adhesion, impact and salt spray resistance. All fabrication cuts, drill holes and weld joints shall be sprayed with a corrosion resistant coating prior to powder coating. The bottom end of the posts is to be sealed with a moisture barrier.
 - (ii) Top caps for posts shall be aluminum die cast and powder coated the same as the post colour. All caps shall be factory installed and secured in place with tamper proof, self-sealing rivets.
- (b) Decks
 - (i) All decks shall be manufactured from vinyl-coated, perforated steel.
 - (ii) Increments between deck heights shall be 200 mm (8") unless connected by a climbing component.
- (c) Clamping System
 - (i) All deck, rail and play component clamping systems shall be fabricated from zinc plated, and galvanized steel, stainless steel or aluminum, and baked-on polyester powdercoated to match post colour unless noted otherwise. Tamper proof, corrosion resistant fasteners shall be used to retain clamping systems.
- (d) Handrails, Safety Rails and Handloops
 - (i) All handrails and safety rails shall be fabricated using a minimum of 1 1/8" O.D. with a 0.120" wall thickness steel tubing. After all fabrication activities have occurred including end cuts, drill holes, bends and weld joints, all components shall be hot dipped galvanized and baked-on polyester powdercoated.
- (e) Hardware
 - (i) All fasteners shall be socketed and tamper proof in design, and either carbon steel plated with zinc/nickel and iridescent chromate finish or stainless steel.
- (f) Poly Components
 - (i) Poly components such as play panels and handloops shall be fabricated from compression moulded solid colour, U.V. stabilized, high-density polyethylene.
 - (ii) Poly components such as slides and hoods shall be fabricated from U.V. stabilized, rotationally moulded linear low-density polyethylene.
- (g) Steel Slides
 - (i) Steel slides are to be 16-gauge 304 stainless steel.

E32.5 Play Components:

- (a) The following play components are to be included on the Playstructure, or approved substitute accordance with B7.
 - (i) one (1) Curved Transfer Module to 40" deck;
 - (ii) one (1) Catwalk Climber c/w hand rails;
 - (iii) one (1) Double Stainless Steel Slide, 40" deck, straight slide with SteelX Hood;
 - (iv) one (1) Loop Ladder, 40" deck;
 - (v) one (1) Navigator Reach Panel, permalene panel with graphics c/w one (1) Steering Wheel;

- (vi) one (1) Sky Rail Climber;
- (vii) one (1) Canyon Climber;
- (viii) one (1) Playstructure Seat;
- (ix) one (1) Surf Stainless Steel Slide, 72" ht.;
- (x) one (1) Ringtangle Climber, ground level;
- (xi) one (1) Swiggleknots, no deck;
- (xii) one (1) Overhead Trekker, no decks;
- (xiii) two (2) Wobble Pods;
- (xiv) four (4) E-Pod Steps;
- (xv) one (1) Noodle Pod with 2 E-Pod Steps
- (xvi) five (5) Pods, 8 and 10" hts;
- (xvii) one (1) Turning Bar.

- (b) The playstructure shall have grab bars, kickplates and handhold panels as required to meet the most recent Canadian Standards Association standards.

E32.6 Colours

- (a) Limon – Posts, Wobble Pods.
- (b) Denim – Sky Rail climber, handholds, discs, noodle posts and barriers.
- (c) Tangerine – All metal components, clamps.
- (d) Red – Pods, Tendertuff, accents.
- (e) Grey – Decks.
- (f) Tangerine with black graphics and red steering wheel – Navigator Reach Panel.

E32.7 Installation

- (a) The playstructure shall be installed as per the Canadian Standards Association standard. All posts and other vertical items shall be true to vertical. All decks, if so designed, shall be level. For foundations refer to Clause E27.
- (b) The playstructure shall be installed by factory certified installers only and to manufacturer's specifications.
- (c) Installation of the playstructure shall be coordinated with associated Site development Work. The playstructure shall be secured and rendered unusable until protective surfacing is in place.

E32.8 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the unit price for the "Items of Work" listed below, which price shall include all costs of supply and installation.
Items of Work:
 - (i) Playstructure

E33. INDEPENDENT PLAY COMPONENTS

E33.1 General Description

- (a) This specification shall cover the supply and installation of independent play equipment as shown on the Drawings.

E33.2 Shop Drawings

- (a) Further to CW 1110, shop drawings shall be submitted to the Contract Administrator for all the play equipment specified in this Section, within seven (7) Calendar Days of receipt of a Purchase Order.
- (b) Shop Drawings shall include, but not be limited to:

- (i) Layout and configuration of equipment including required safety zones
- (ii) Colours
- (iii) Custom graphics or products

E33.3 Products

- (a) One (1) Double Spring Rider: Landscape Structures Inc. Double Bobble product # 164075, or approved substitute accordance with B7.
 - (i) Colour: Denim
- (b) One (1) Saddle Spinner: Landscape Structures Inc. product # 152179, or approved substitute accordance with B7.
 - (i) Colour: Limon post, red saddle.
 - (ii) 16" ht.
- (c) One (1) Stand-up Spinner: Landscape Structures Inc. product # 155077, or approved substitute accordance with B7.
 - (i) Colour: Tangerine post, red tendertuff.
- (d) One (1) Cyclor: Landscape Structures Inc. product # 158107, or approved substitute accordance with B7.
 - (i) Colour: Tangerine post, red seat.
- (e) One (1) Play Panels: Landscape Structures Inc. custom play panel grouping as shown on the Drawings, or approved substitute accordance with B7.
 - (i) One (1) Table Panel c/w Three (3) Custom Flower Stepper Seats
 - (ii) One (1) Rock-n-Ring Panel
 - (iii) One (1) Store Panel
 - (iv) Two (2) Noodle Posts
 - (v) Colours: Limon-posts, Denim – noodle posts, Tangerine-panels and clamps, Red-table, bongos and bells. Yellow over Red-flowers.

E33.4 Materials

- (a) All materials shall be structurally sound and suitable for safe play. Durability shall be ensured on all parts and materials.
- (b) Materials shall be as follows:
 - (i) All poly shall be fabricated from compressed or rotationally moulded, high-density polyethylene with U.V. stabilizers and all edges chamfered. Colours and graphics are to be moulded-in.
 - (ii) Metals shall be fabricated from galvanized steel tubing with a baked-on TGIC polyester powder coating.
- (c) Finishes
 - (i) Finishes shall meet or exceed ASTM standards for hardness, adhesion, impact and salt spray resistance. All fabrication cuts, drill holes and weld joints shall be sprayed with a corrosion resistant coating prior to powder coating.
- (d) Hardware
 - (i) All fasteners shall be tamper proof in design, requiring special tools. The fasteners shall be either carbon steel plated with zinc/nickel and iridescent chromate finish or stainless steel.

E33.5 Installation

- (a) All play equipment locations are to be approved by the Contract Administrator prior to installation.
- (b) All play equipment shall be installed as per the Canadian Standards Association Guidelines.

- (c) All play equipment shall be installed by factory certified installers only and to manufacturer's specifications. For foundations refer to Clause E27.

E33.6 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the unit price for the "Items of Work" listed below, which price shall include all costs of supply and installation. Site restoration Work shall be considered incidental to the Work.
- (b) Items of Work:
 - (i) Double Bobble Spring Rider
 - (ii) Saddle Spinner
 - (iii) Stand-up Spinner
 - (iv) Cyclor
 - (v) Play Panels

E34. SWINGS

E34.1 General Description

- (a) This specification shall cover the supply and installation of complete swing sets as specified herein.

E34.2 Product

- (a) Landscape Structures Inc, Model #177330 and 177331: Three Bay, Heavy Duty Arch Swing Frame, 2.4 m (8 ft.) high, complete with two (2) slash-proof rubber enclosed infant seats, three (3) slash-proof rubber belt seat, and one (1) high back moulded bucket seat with yoke harness, heavy-duty chain, swing hangers and bolt links; or, approved Substitute in accordance with B7.
- (b) Colours: Denim - frame and clamps, Tangerine moulded bucket seat with Red harness.

E34.3 Materials – Swing Frame

- (a) Topbeam and Legs
 - (i) All topbeams and legs shall be fabricated from 127 mm (5") O.D. aluminum alloy tube (.125" wall thickness) with a baked-on polyester powdercoating. The powder coating finish shall meet or exceed ASTM standards for hardness, adhesion, impact and salt spray resistance. All fabrication cuts, drill holes and weld joints shall be sprayed with a corrosion resistant coating prior to powdercoating. The bottom end of the posts is to be sealed with a moisture barrier;
- (b) Swing Hanger Clamp Assembly
 - (i) All swing hangers shall be fabricated from cast aluminum with powdercoat finish.

E34.4 Materials - Accessories

- (a) Swing Chain
 - (i) All swing chain shall be 4.75mm straight link, 362.8 kg working load limit, ProGuard Finish steel.
- (b) Enclosed Infant (Bucket) Seats
 - (i) All enclosed infant seats shall be moulded of U.V. stabilized, high quality, rubber with a tempered stainless steel reinforcement plate insert moulded inside, rendering the seats slash proof. Infant seats shall be fully enclosed to prevent slipping out and provide extra lower back support.
- (c) Belt Seats
 - (i) All belt seats shall be moulded of U.V. stabilized, high quality, rubber with a tempered stainless steel reinforcement plate insert moulded inside, rendering the seats slash proof. The perimeter shall be moulded to form a blunt, impact absorbing edge.

- (d) Moulded Bucket Seats
 - (i) All moulded bucket seats shall be moulded of U.V. stabilized, low density polyethylene. They shall have a high seat back and a yoke harness for children with limited upper body mobility, and a front impact bumper.
- (e) Hardware
 - (i) All fasteners shall be socketed and tamperproof in design, and either carbon steel plated with zinc/nickel and iridescent chromate finish or stainless steel. Bolt links and "S" hooks shall be drop forged carbon steel, heat treated and hot dipped galvanized.

E34.5 Installation

- (a) Swings shall be installed as per the Canadian Standards Association Guidelines. Refer to Clause E30. For foundations refer to Clause E27.
- (b) Installation of swings shall be coordinated with associated Site development Work. Swings shall be secured and rendered unusable until safety surfacing is in place.
- (c) Swings shall be installed by factory certified installers only and to manufacturer's specifications.

E34.6 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the unit price for the "Items of Work" listed below, which price shall include all costs of supply and installation.
- (b) Items of Work:
 - (i) Swings

SKATEPARK

E35. GENERAL

E35.1 The following specifications apply to the construction of the skatepark in its entirety. The Work to be done by the Contractor shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other items necessary for and incidental to the satisfactory performance and completion of all Work as shown on the Drawings and as specified herein.

- (a) The rock work within the skatepark is specified in E24 and the cost is separate from the skatepark.

E35.2 The Contractor is obliged to provide a fully operational skateboard park as shown on the Drawings.

E35.3 Basis of Payment

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

E36. PRECAST SKATEPARK ELEMENTS

E36.1 This specification shall cover the supply and installation of precast skatepark elements, as shown on the Drawings.

E36.2 All precast elements are to be Barkman Skate Parks as listed on the Drawings, or approved substitute in accordance with B7.

E36.3 The precast elements are to meet or exceed the specifications herein.

E36.4 The Contractor and the element/component manufacturer are to work together to provide the best possible finished product, coordinating the supply and installation of the precast and poured-in-place concrete works and the metal works.

E37. SHOP DRAWINGS

E37.1 Further to D13.3 and CW 1110, shop drawings shall be submitted to the Contract Administrator for all the poured-in-place and precast skatepark elements prior to their manufacture.

E37.2 Shop Drawings shall include, but not be limited to:

- (i) Layout and configuration of elements and their footings;
- (ii) Dimensions of elements;
- (iii) Installation details.

E38. PROTECTION

E38.1 The Contractor shall be responsible for protecting their Work until the Work has been completed, fully cured and set; also for protecting other surfaces during execution of Work in accordance with the Specifications.

E38.2 Should the Work be suspended for any cause whatsoever, the Contractor shall assume all responsibility for proper protection during such period.

E38.3 The Contractor is responsible for securing the Site at all times. Experience has shown that a security guard is required 24/7 during the critical concrete curing stages to prevent trespassing onto the Site. Security fencing is not sufficient to prevent such trespassing.

E39. BASE PREPARATION FOR CONCRETE WORKS

E39.1 General Description

(a) Further to CW 3170 and CW 3110 and the detail Drawings, this specification shall cover the base preparation for the concrete Works, including:

- (i) Type I Base - The base preparation for footings for precast skatepark elements.
- (ii) Type II Base - The base preparation for the poured-in-place concrete skatepark flatwork.

(b) The modification of the existing hill shall be considered incidental to this Work.

E39.2 Related Work

- (a) Site Grading as specified in E17.
- (b) Sub-surface drainage systems as specified in E19.

E39.3 Materials

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

E39.4 Fine Grading

- (a) Subgrade shall be fine graded to depths required to allow for base materials.

- (b) Sub-grade shall be graded to same slopes as the finished surface grades and towards the perimeter of the concrete Work. Sub-grade shall be proof rolled to 95% Standard Proctor Density.

E39.5 Base Installation

- (a) The base materials for Type I Base and Type II Base are to be the same. Where this specification varies from the specifications for the Type I Base included on the Shop Drawings from the Precast Component supplier, the highest quality specification shall apply. Any changes to this specification must be directed to the Contract Administrator.
- (b) The Skatepark footings and flatwork are to the specifications shown on Drawings.
 - (i) Base materials are to be compacted to 95% Standard Proctor Density.
 - (ii) Work is to be coordinated with the installation of the sub-surface drainage system.

E40. CONCRETE WORK

E40.1 General Description

- (a) Further to CW 3310, this specification shall cover the supply and installation of concrete for the construction of the Skatepark:
 - (i) Type I Concrete - Concrete footings for the pre-cast concrete skatepark components.
 - (ii) Type II Concrete - Poured-in-place concrete for the flatwork or skatepark plazas.

E40.2 Reference Standards

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

E40.3 Mix Designs

- (a) Contractor is to submit mix design to Contract Administrator for approval a minimum of one week prior to the first pour.
- (b) Mix design for Type II shall be:
 - (i) Concrete strengths at 28 days shall be as follows:
Exterior slabs: 35 MPA; Water/cement ratio 0.40
Slump Max. 90 mm;
Aggregate Max. 20 mm;
Entrained Air / Category : 1
Class of Exposure: C-1
 - (ii) Air entraining admixtures shall conform to the requirements of ASTM C260 "Standard Specification for Air Entraining Admixtures for Concrete".
Superplasticizing admixtures shall conform to ASTM C494/C494M-99a "Standard Specification for Chemical Admixtures for Concrete", or ASTM C1017/C1017M-99 "Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete" when flowing concrete is applicable. Air entrained admixtures are to have a durability factor greater than 75, when tested to ASTM Standards C666 Procedure A. Spacing factor for any air entraining admixture must be 0.17mm or less when tested in accordance with ASTM C457 "Standard Test Method for Microscopical Determination of Parameters of the Air-Void System in Hardened Concrete".
- (c) Sample Panels

- (d) Test panels for each Type (I & II) of concrete Work will be required prior to authorization for general concrete Work within the Skatepark. The Contractor shall prepare one pour test panels complete with the required level of finish for review, approval and maintenance as a "standard".
- (e) The Contractor may choose to construct the sample panels within the Contract area but may be required to remove the Work if it does not meet specification for shape and finish.
- (f) The Contractor may choose to construct a smaller panel outside of the Contract area for the purpose of review and approval only.
 - (i) Obtain approval of Contract Administrator for test sections.
 - (ii) Prepare a representative test section of each finish on site in an inconspicuous location, at least one square meter.
- (g) The test section must be produced by the same workers who will complete the Work.
- (h) The Contract Administrator will utilize a brick layers level or other straight edge or other specified devise to check for consistent shape and slope over the entire sample panels. Insitu test areas showing irregularities in the finish surface exceeding 3mm shall be removed and replaced by the Contractor. Grinding or rub finishing are not permissible methods of remedying irregularities.
- (i) Written approval from the Contract Administrator is required prior to additional concrete Work.

E40.4 Materials

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

E40.5 Formwork

- (a) Any forms, if required, shall be so constructed that the finished concrete will conform to the shapes, lines grades and dimensions shown on the Drawings.
- (b) Form plywood shall be used for exposed concrete surfaces.
- (c) Any walls shall be formed using plastic cone ties. All ties shall be arranged in symmetrical, aligned vertical and horizontal rows. They shall be so arranged that when the forms are removed, no ties shall be within 1" of any exposed surface. Wire ties may be permitted only on light work and shall not be used through surfaces where discolouration will be objectionable. All wall reinforcing shall be continuous at corners and intersections. Corner bars or hooks shall be used.
- (d) All cracks and holes are to be plugged, taped and sealed in forms to withstand pressure and remain watertight.
- (e) Forms are to be designed to permit removal without damage to finish.
- (f) Formwork is to be cleaned and conditioned before each use. Damaged forms are not permitted.
- (g) After removal of plastic cone ties, tie ends are to be treated with rust inhibitive coating. Cement plugs are to be recessed to uniform depth, taking care not to damage surrounding edge of concrete.

- (h) Lumber used in forms shall be free from warp. For any exposed surfaces, it shall be dressed to a uniform width and thickness and be free from loose knots, decay or other defects. For unexposed surfaces and rough work, undressed lumber may be used if means are taken to prevent leakage.
- (i) The inside of forms shall be coated with non-staining mineral oil or other approved liquid or thoroughly wetted (except in freezing weather). Where oil is used, it shall be applied before the reinforcement is placed.
- (j) Care is to be taken to ensure that forms do not become dried and warped before concrete is deposited. Before concrete is placed, forms and reinforcement shall be checked and approved by the Contract Administrator.
- (k) Forms shall not be disturbed until the concrete has adequately hardened. Forms are to be removed in a regular sequence of elapsed time between pour and removal so as to maintain colour consistency.
- (l) All exposed edges of concrete shall have a 25mm radius.

E40.6 Shaping Templates

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

E40.7 Workmanship

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

E40.8 Tolerances for Concrete

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

E40.9 Tolerances for Reinforcing

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

E40.10 Joints

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

E40.11 Concrete Pouring

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

E40.12 Curing and Protection

- (a) Slabs shall be kept moist for at least 7 consecutive days after placing unless otherwise approved by the Contract Administrator.
- (b) All concrete shall cure for 28 days prior to allowing any traffic. Protective barriers are to be installed to prevent traffic into the skatepark. Refer to E38.

E40.13 Winter Concrete

- (a) Not permitted.

E40.14 Finishing Surfaces

- (a) Level Finish Type I Concrete
 - (i) Concrete finish for any footings shall be a trowel finished to produce a smooth, dense level surface with no irregularities.
- (b) Smooth Finish Type II Concrete
 - (i) Concrete finish for any banks, ledges and walls shall be a hard trowel finish (12 passes) to produce a smooth, dense surface with no irregularities. Smooth finish is to be non-textural with no exposed aggregate. Flat slabs are to be power towelled.
 - (ii) All "flatwork" is to have a minimum sloped grade of 1% and be in accordance with the overall grading plan for the skatepark.
 - (iii) For both hand and power towelled surfaces, on Site test panels are to be done prior to start to establish acceptance and criteria for skatepark standards
 - (iv) A light broom finish is to be used on stair treads only. Broom finish with a trowel edge shall be used only on non-skateable surfaces and as approved by the Contract Administrator.
- (c) All edges shall be rounded with a 25mm radius rounding tool unless shown differently on Drawings.
- (d) Concrete surfaces are to be complete and tight against steel grind edges. Proper coping protection to prevent concrete build-up on steel surfaces must be maintained at all times.
- (e) All steel inserts are to be grouted in strict conformance with grout manufacturer's printed instructions.
- (f) Prior to final completion of concrete elements, dress all areas with dressing stone and grinder as directed by Contract Administrator. This will include slab surfaces, edges, control and construction joints, and walls.

E41. JOINT SEALANT

E41.1 General Description

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

E41.2 References

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

E41.3 Submittals

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

E41.4 Warranty

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

E41.5 Environmental Conditions

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

E41.6 Materials

- (a) All sealants utilized in the sealant system shall be compatible.
- (b) Provide sealant formulation recommended by the manufacturer for the type of joint, substrate and service conditions applicable.
- (c) Sealant Type A: Multi-component, polyurethane base, chemical curing, CAN2-19.24-M80, Dymeric by Tremco Ltd., 220 Wicksteed Ave., Toronto, (416) 421-3300, or approved substitute.
- (d) Sealant Type B: Self-levelling, multi-component, polyurethane base, chemical curing, THC-900 and THC 900 Joint Primer by Tremco Ltd., 2200 Wicksteed Ave., Toronto, (416) 421-3300, or approved substitute.
- (e) Sealant Backing: Extruded, foamed, closed cell, round, polyethylene urethane, neoprene or vinyl rod, 30% greater diameter than joint width, with Shore 'A' hardness of 20 and 830 – 900 KPa tensile strength, and manufactured especially for the purpose.
- (f) Expansion Joint Filler: Preformed PVC closed cell, Rodofoam by Sternson Canada Limited, or approved substitute.
- (g) Joint Primer: As recommended by sealant manufacturer for type of surface being primed.

E41.7 Preparation

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

- (h) Check form release agent used on concrete for compatibility with primer and sealant. If they are incompatible inform Contract Administrator and change primer and sealant to compatible types approved by Contract Administrator or clean concrete to Contract Administrator's approval.

E41.8 Application

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

METAL WORK

E42. MISCELLANEOUS METALS

E42.1 General Description

- (a) This specification shall cover the supply and installation of miscellaneous metal Work:
 - (i) Skatepark - steel grind rails, coping and grind edges.
 - (ii) Entrance Features – Frieze and Baffle
- (b) The metal work for the skatepark shall be considered incidental to and included with the price for the complete skatepark.
- (c) The metal work for the entrance features shall be priced separately as listed on the Form B: Prices.

E42.2 Workmanship

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

E42.3 Reference Standards

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

E42.4 Submittals

- (a) Samples of any component, requested by the Contract Administrator, shall be submitted prior to fabrication.

E42.5 Shop Drawings

- (a) Shop Drawings shall be submitted for grind rails, safety rails and grind edges.
- (b) Shop Drawings shall be submitted for the entrance features including, but not limited to:
 - (i) Frieze and baffle design, construction, materials, and connections.
 - (ii) Lettering plates
 - (iii) Concrete foundations
 - (iv) Anchoring systems
- (c) All dimensions are to be verified prior to fabrication.

E42.6 Materials

- (a) Unless detailed or specified otherwise, standard products will be acceptable if construction details and installation meet the intent of the Drawings and Specifications in the opinion of the Contract Administrator.
- (b) Materials for the skatepark grind rails, safety rails and grind edges to be stainless steel as shown on Drawings.
 - (i) Work is to be free from defects which impair the strength or durability or which are visible. Work is to be new or best quality, and free from rust, waves or buckles.
- (c) Materials for the entrance feature frieze and baffle to be raw steel and Cor-ten steel as shown on Drawings.
 - (i) Work is to be free from defects which impair the strength or durability.
 - (ii) The finished product is to appear rusty and aged in the manner of old railroad artefacts.
 - (iii) All edges are to be blunt and free of defects which may be dangerous to people grabbing them.
 - (iv) Bolts and washers are to be over-sized for visual effect.
- (d) Fasteners: Unless otherwise specified, provide fasteners as follows:
 - (i) Steel anchor bolts to conform to ASTM A307.
 - (ii) Steel bolts and lag screws to conform to ASTM A325.

E42.7 Fabrication

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

E42.8 Lettering Plates

- (a) As per Drawings and Shop Drawings
- (b) Lettering style is to be stencil and sized such that there are no small pieces that may be easily torn off.

E42.9 Installation

- (a) As per Drawings.
- (b) Install Work plumb, true, square, level, straight, and accurately and tightly fitted together and to surrounding Work.
- (c) Entrance features are to be fitted together in the fabrication shop to ensure a proper fit and end product, prior to shipment to the Site. Final connections shall be made on Site.
- (d) Anchoring systems for the entrance features are to be coordinated with the concrete foundation works.

E42.10 Basis of Payment

- (a) Payment for Work specified under this section shall be paid for at the unit price for the “Items of Work” listed below, which price shall include all costs of material supply and proper installation.
- (b) Items of Work:
 - (i) Entrance Feature – Frieze
 - (ii) Entrance Feature - Baffle