



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 228-2006

TRANSIT IMPROVEMENT PROJECTS

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	4
Form G1: Bid Bond and Agreement to Bond	8
Form G2: Irrevocable Standby Letter of Credit and Undertaking	10

PART B - BIDDING PROCEDURES

B1. Project Title	1
B2. Submission Deadline	1
B3. Site Investigation	1
B4. Enquiries	1
B5. Addenda	1
B6. Substitutes	2
B7. Bid Submission	3
B8. Bid	3
B9. Prices	4
B10. Qualification	4
B11. Bid Security	5
B12. Opening of Bids and Release of Information	6
B13. Irrevocable Bid	6
B14. Withdrawal of Bids	6
B15. Evaluation of Bids	7
B16. Award of Contract	8

PART C - GENERAL CONDITIONS

C1. General Conditions	1
------------------------	---

PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Contract Administrator	1
D4. Contractor's Supervisor	2
D5. Notices	2
D6. Furnishing of Documents	2

Submissions

D7. Insurance	2
D8. Performance Security	3
D9. Subcontractor List	3
D10. Security Clearance	4

Schedule of Work

D11. Commencement	4
D12. Substantial Performance	4
D13. Total Performance	4
D14. Liquidated Damages	5

Control of Work

D15. Job Meetings	5
D16. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	5

Measurement and Payment

Warranty

D17. Warranty	5
Form H1: Performance Bond	6
Form H2: Irrevocable Standby Letter of Credit	8
Form J: Subcontractor List	10

PART E - SPECIFICATIONS

General

E1. Applicable Specifications, Standard Details and Drawings	1
--	---

General Requirements

E2. Protection of Survey Infrastructure	1
E3. Pedestrian Safety and Traffic Management	2
E4. Water Used By Contractor	2
E5. Site Condition	2
E6. Existing Underground Structures	2
E7. Product Approvals	3
E8. Damage to Streets and Structures	3
E9. Permits, Notices, Licences, Certifications, Laws and Rules	3
E10. Layout of Works	4
E11. Private Sidewalks, Side Street Sidewalks	4
E12. Matching Existing Grades	4
E13. Sawcutting Pavement	4
E14. Clearing and Grubbing	5
E15. Base Course Material	5
E16. Joint Details	5
E17. Sign Support Clamps	6
E18. Removals	6
E19. Concrete Curb Renewal	9
E20. Cast-In-Place Concrete	10
E21. Full Depth Patching of Existing Pavement Slabs	13
E22. Adjustment of Pavement and Boulevard Structures	13
E23. Concrete Sidewalk	13
E24. Interlocking Paving Stones	14
E25. Granite Curb Repair	17
E26. Site Furniture	19
E27. Site Clean Up	21

PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

B1.1 TRANSIT IMPROVEMENT PROJECTS

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, April 26, 2006.

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

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

B3. SITE INVESTIGATION

B3.1 Further to GC:3.1, the Bidder may view the Site without making an appointment.

B4. ENQUIRIES

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

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

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

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

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

B5. ADDENDA

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

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

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

B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet site for addenda shortly before submitting his Bid.

B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 9 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.

B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.

B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.

B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:

- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
- (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
- (c) identify any anticipated cost or time savings that may be associated with the substitute;
- (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
- (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.

B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.

B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.

B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.

B6.7 If the Contract Administrator approves a substitute as an "approved equal", any Bidder may use the approved equal in place of the specified item.

B6.8 If the Contract Administrator approves a substitute as an "approved alternative", any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.

B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B7. BID SUBMISSION

B7.1 The Bid Submission consists of the following components:

- (a) Form A: Bid;
- (b) Form B: Prices;
- (c) Form G1: Bid Bond and Agreement to Bond, or
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
a certified cheque or draft;

B7.2 All components of the Bid Submission 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 in ink, to constitute a responsive Bid.

B7.3 The Bid Submission shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.

B7.3.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.

B7.4 Bid Submissions submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B7.5 Bid Submissions shall be submitted to:

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

B8. BID

B8.1 The Bidder shall complete Form A: Bid, making all required entries.

B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

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

B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.

B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

- B8.4 Paragraph 11 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
 - (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B8.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.
- B8.4.2 All signatures shall be original and shall be witnessed except where a corporate seal has been affixed.
- B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid Submission and the Contract, when awarded, shall be both joint and several.

B9. PRICES

- B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B10. QUALIFICATION

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

performing the Work required to be done in accordance with the terms of the Contract;

- (g) have a written workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba);

B10.2 Further to B10.1(g), the Bidder shall, within three (3) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:

- (a) a valid COR certification number under the Certificate of Recognition (COR) Program - Option 1 administered by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
- (b) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association; 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 Branch internet site at <http://www.winnipeg.ca/matmgt>.)

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

B10.4 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B11. BID SECURITY

B11.1 The Bidder shall provide bid security in the form of:

- (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or
- (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking 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 included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
- (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.

B11.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.

B11.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

B11.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B11.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B11.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

B11.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

B12.1 Bid Submissions will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Branch, or in such other office as may be designated by the Manager of Materials.

B12.1.1 Bidders or their representatives may attend.

B12.1.2 Bid Submissions determined by the Manager of Materials, or his designate, to not include the bid security specified in B11 will not be read out.

B12.2 After the public opening, the names of the Bidders and their Total Bid Prices as read out (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

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 Branch internet site at <http://www.winnipeg.ca/matmgt>.

B12.4 The Bidder is advised that any information contained in any Bid Submission may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B13. IRREVOCABLE BID

B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 10 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 until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 10 of Form A: Bid.

B14. WITHDRAWAL OF BIDS

B14.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B14.1.1 Notwithstanding GC:23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

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 11 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 shall:

- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
- (b) open the Bid Submission to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 11 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 Bid after the Submission Deadline but before his 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, including the right to retain the Bidder's bid security.

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 (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B6.

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

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

B15.4 Further to B15.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B15.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B15.5 Further to B15.1(c) the Total Bid Price shall be the total Bid Price 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 provisions 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 deleting item A16. on Form B: Prices and the award will be based on the adjusted total bid price; or
- (c) if the adjusted total bid price still exceeds the budgetary provisions for the Work, the adjusted total bid prices of all responsive Bids by responsible and qualified Bidders will then be adjusted by deleting Items A22. and A24. on Form B: Prices and the award will be based on the adjusted total bid price; or

- (d) if the adjusted total bid price still exceeds the budgetary provisions for the Work, the adjusted total bid prices of all responsive Bids by responsible and qualified Bidders will then be adjusted by reducing the quantity in Item A1 to 235 s.m., Item A2 to 165 s.m., A13 to 245 s.m., A15 to 140 s.m, and A18 to 10 s.m. on Form B: Prices and the award will be based on the adjusted total bid price.

B16. AWARD OF CONTRACT

- B16.1 The City will give notice of the award of the Contract by way of a letter of intent, 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.
- B16.4 Part B of the Contract will be awarded to the successful Bidder of Part A by July 25, 2006 with the agreement of the Contractor to hold his Bid prices until that date without extension of the Bid Bond. If additional funding is not secured by the City prior to July 25, 2006 Part B may be deleted.

PART C - GENERAL CONDITIONS

C1. GENERAL CONDITIONS

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

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of removal and replacement of existing concrete sidewalk and unit pavers, supply and installation of unit pavers, concrete road repair, curb renewal, repair of granite curbs, and construction of reinforced concrete bases for transit shelters.
- D2.2 The major components of the Work are as follows:
- (a) Sawcut, remove and replace existing concrete sidewalk.
 - (b) Remove, stockpile and reinstall existing unit paver
 - (c) Curb renewal.
 - (d) Full depth repair of existing concrete roadway pavement.
 - (e) Construction of reinforced concrete bases for Transit shelters.
 - (f) Construction of concrete sidewalk.
 - (g) Removal and relocation of existing site furniture.
 - (h) Repair of existing granite curbs.
 - (i) Supply and installation of unit pavers.
 - (j) Adjustment of curb and gutter inlets, catch basins and manholes.

D3. CONTRACT ADMINISTRATOR

- D3.1 The Contract Administrator is McGowan Russell Group Inc., represented by:
- Ms. Jackie Wilkie
Landscape Architect
200-120 Fort St. Winnipeg, MB R3C 1C7
Telephone No. (204) 956-0396
Facsimile No. (204) 956-1265

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

D4. CONTRACTOR'S SUPERVISOR

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

D5. NOTICES

D5.1 Except as provided for in GC:23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.

D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3, D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.

D5.3 All notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:

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

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

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

D6. FURNISHING OF DOCUMENTS

D6.1 Upon award of the Contract, the Contractor will be provided with five (5) complete sets of the Bid Opportunity. If the Contractor requires additional sets of the Bid Opportunity, they will be supplied to him at cost.

SUBMISSIONS

D7. INSURANCE

D7.1 The Contractor shall provide and maintain the following insurance coverage:

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) all inclusive, with The City of Winnipeg being added as an additional

insured, with a cross-liability clause, such liability policy to also contain a contractual liability, an unlicensed motor vehicle liability and a products and completed operations endorsement to remain in place at all times during the performance of the Work and throughout the warranty period;

- (b) automobile liability insurance for owned and non-owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;

D7.2 Deductibles shall be borne by the Contractor.

D7.3 The Contractor shall provide the City Solicitor with a certificate of insurance of each policy, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.

D7.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator.

D8. PERFORMANCE SECURITY

D8.1 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.

D8.1.1 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.

D8.2 If the bid security provided in his Bid Submission was not a certified cheque or draft pursuant to B11.1(c), 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 letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.

D9. SUBCONTRACTOR LIST

D9.1 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 the date specified in the General Conditions for the return of the executed Contract.

D10. SECURITY CLEARANCE

SCHEDULE OF WORK

D11. COMMENCEMENT

- D11.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.
- D11.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence that the Contractor is in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
 - (ii) evidence of the workers compensation coverage specified in GC:6.14;
 - (iii) evidence of the insurance specified in D7;
 - (iv) the performance security specified in D8; and
 - (v) the Subcontractor list specified in D9.
 - (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.
- D11.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.

D12. SUBSTANTIAL PERFORMANCE

- D12.1 The Contractor shall achieve Substantial Performance within thirty (30) consecutive Working Days of the commencement of the Work as specified in D11.
- D12.2 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.
- D12.3 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.

D13. TOTAL PERFORMANCE

- D13.1 The Contractor shall achieve Total Performance within forty (40) consecutive Working Days of the commencement of the Work as specified in D11.
- D13.2 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.
- D13.3 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.

D14. LIQUIDATED DAMAGES

- D14.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City five hundred dollars (\$500.00) per Working Day for each and every Working Day following the day fixed herein for Substantial Performance during which such failure continues.
- D14.2 The amount specified for liquidated damages in D14.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance by the day fixed herein for same.
- D14.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D15. JOB MEETINGS

- D15.1 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.
- D15.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D16. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D16.1 Further to GC:6.26, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

MEASUREMENT AND PAYMENT

WARRANTY

D17. WARRANTY

- D17.1 Notwithstanding GC:13.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if:
- (a) a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.
- D17.1.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in GC:13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See D8)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

_____ day of _____, 20____, for:

BID OPPORTUNITY NO. 228-2006

TRANSIT IMPROVEMENT PROJECTS

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

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

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

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

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

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

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)**
(See D8)

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 228-2006
TRANSIT IMPROVEMENT PROJECTS

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

(Name of Contractor)

(Address of Contractor)

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

Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

- E1.1 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.1.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- E1.1.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.1.3 Further to GC:2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.2 The following Drawings are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
	Cover Sheet
L1.01	Layout Plan - Portage Downtown
L1.02	Layout Plan – Polo Park
L1.03	Layout Plan – U of M
L1.04	Layout Plan – Osborne Exchange
L1.05	Layout Plan – Graham Ave 1 of 9
L1.06	Layout Plan – Graham Ave 2 of 9
L1.07	Layout Plan – Graham Ave 3 of 9
L1.08	Layout Plan – Graham Ave 4 of 9
L1.09	Layout Plan – Graham Ave 5 of 9
L1.10	Layout Plan – Graham Ave 6 of 9
L1.11	Layout Plan – Graham Ave 7 of 9
L1.12	Layout Plan – Graham Ave 8 of 9
L1.13	Layout Plan – Graham Ave 9 of 9
L2.01	Enlargement Plans
L2.02	Details

GENERAL REQUIREMENTS

E2. PROTECTION OF SURVEY INFRASTRUCTURE

- E2.1 Notwithstanding clause 4 “Protection of Survey Bars” of the Standard Provisions: Current legislation, The Surveys Act, places the onus on those undertaking construction to protect the Survey Infrastructure from damage as a result of their activity.
- E2.2 Further to GC:6.28 (g), at least 72 hours prior to the commencement of the On-Site Work the Contractor shall contact the City of Winnipeg, Geomatics Services Branch at 986-4826 (8:00 am to 4:00 pm Monday to Friday excluding holidays) to obtain underground clearance. Geomatics Services will locate and mark all known outline survey monuments and geodetic control monuments and confirm the physical condition of those monuments upon completion of construction, at no cost to the Contractor.
- E2.3 Where a survey post, bar or control monument lies in the line of the proposed Work and must be disturbed, the Contractor shall provide the Contract Administrator with 48 hours notice to permit referencing for future replacement, at no cost to the Contractor. Failure to provide the

specified notice shall result in the Contractor paying for all costs associated with replacing or relocating the disturbed outline survey monuments and geodetic control monuments.

- E2.4 Survey monuments and geodetic control monuments at or adjacent to the Site, not in the line of the proposed construction, that are damaged or disturbed by the Contractor shall be replaced or relocated by the City or its agent and all associated costs shall be paid for by the Contractor. An approximate estimate of the costs involved to restore a legal survey monument is \$1,000 per bar and \$3,000 per control monument. Contractors must ensure their subcontractors are aware of this clearance procedure and the potential restoration costs.
- E2.5 Where possible, amounts owed to the City in accordance with the above will be deducted from any Protection of survey infrastructure payments to be made by the City to the Contractor.

E3. PEDESTRIAN SAFETY AND TRAFFIC MANAGEMENT

- E3.1 Ambulance/Emergency vehicle access must be maintained at all times.
- E3.2 During the project, a temporary snow fence shall be installed around the excavation area. The Contractor shall be responsible for maintaining the snow fence in a proper Working condition. No measurement for payment shall be made for this Work.

E4. WATER USED BY CONTRACTOR

- E4.1 Further to CW 1120 the Contractor shall pay for all water used in accordance with the Waterworks By-law. Sewer charges will not be assessed for water obtained from a hydrant.

E5. SITE CONDITION

- E5.1 The Contractor shall examine the Site and make themselves familiar with the existing conditions (both above and below grade) and nature of Work to be done.
- E5.2 Surface and sub-surface conditions shown on the Drawings and included herein are provided for general information and variations there from shall not affect the terms of the Contract.
- E5.3 The Contractor shall set all necessary control lines, benchmarks, survey, elevation stakes and layout in accordance with the individual Site conditions and in consultation with the Contract Administrator.

E6. EXISTING UNDERGROUND STRUCTURES

- E6.1 The Contractor's attention is drawn to the existing underground lines or services that may be located in the area of the Work.
- E6.2 The Contractor shall take all necessary precautions when performing the Work to ensure that no damage is done to these existing services.
- E6.3 No responsibility will be assumed by the City for correctness or completeness of the Drawings, when provided, with respect to the existing utilities, pipes or other objects either underground or on the surface, 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.
- E6.4 All costs in connection with this item including location of the existing service, repairs to any existing services damaged by the construction operation, etc. shall be included in the unit prices bid for supply and installation of the items included under this Contract.

E6.5 The Contractor will be required to make his own arrangements in connection with the temporary use of lighting, power, gas, sewer, water or other utilities, and pay all costs in connection therewith.

E6.6 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.

E7. PRODUCT APPROVALS

E7.1 The Contractor shall, following award, prepare a complete list of all material to be used on the project and submit the list to the Contract Administrator 72 hours prior to start of construction.

E7.2 The Contractor shall only use material which has been approved by Specification CW3710-R1 or by the Contract Administrator. The list shall give the product, the manufacturer and the supplier.

E7.3 Other than required to be done by the Contractor under the Work of this contract, all necessary precautions shall be exercised by the Contractor so as not to remove, disturb, or damage any existing plant material, pavements, streets, roads, boulevard, poles, hydrants, water pipes, gas pipes, electrical wires, cables, conduits, sewers or other existing facilities and equipment at the Site of the Work. For all damage incurred thereto in the performance of the Work, the Contractor shall upon instructions from the Contractor Administrator and to the satisfaction of the City and the owners thereof, either replace and repair such damage, whichever may be deemed necessary in the opinion of, and acceptable to, the City and the owners thereof and the costs of which shall be borne entirely by the Contractor. The Contractor shall also indemnify and safe harmless the City from all claims made directly or indirectly against it in respect to any such damage.

E7.4 All workmanship and materials furnished and supplied under this Specification are subject to close and systematic inspection and testing by the Contract Administrator. The Contract Administrator reserves the right to reject any materials or Works which are not in accordance with the requirements of the Specifications.

E7.5 The Contractor shall wholly be responsible for the supply, safe storage, and handling of all materials set forth in this specification, and the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given.

E8. DAMAGE TO STREETS AND STRUCTURES

E8.1 The Contractor's attention is drawn to the following existing Site features to be retained and protected to the City of Winnipeg Standards:

- | | | |
|------------------|-------------------|--|
| a) trees, shrubs | e) light standard | i) hydro towers and poles |
| b) curbs | f) fire hydrants | j) catch basins |
| c) sidewalk | g) street signs | k) curb inlets |
| d) sod | h) signal poles | m) underground services including
land drainage sewer |

E9. PERMITS, NOTICES, LICENCES, CERTIFICATIONS, LAWS AND RULES

E9.1 The Contractor shall give all necessary notices, obtain all necessary permits and pay all fees in order that the Work may be carried out. The Contractor shall submit all plans required by any inspection authority and obtain approval of same before proceeding with the Work, and pay any cost attached to the inspection of such plans.

E9.2 The Contractor shall comply with all laws, ordinances, rules, and regulations that would relate to the Works.

E10. LAYOUT OF WORKS

E10.1 The Contractor will Work from layout information provided in the construction drawings and will be responsible to provide a full time experienced survey crew to layout and continuously check the locations and elevations of all components and paving patterns of the Work included in this Contract.

E10.2 The Contractor must provide all necessary survey equipment in good operating conditions.

E10.3 The Contractor shall supply all materials (painting, stakes, ribbon, markers, etc) and labour necessary for the accurate location and setting out of the Work.

E10.4 From time to time the Contract Administrator may have a survey crew on the Site, but they will check the Work done by the Contractor's survey personnel only. The checking of the Work by the Owner's surveyors will not relieve the Contractor of any responsibility of the correctness of the Work. Should any structure or paving or any part thereof be installed in any location other than that shown on the Drawings, then the error shall be rectified by the Contractor all at his own expense and at the satisfaction of, and in a manner specified by the Contract Administrator.

E10.5 All costs associated with this item of Work shall be included in the unit prices bid for the supply and installation of the various items in the contract.

E11. PRIVATE SIDEWALKS, SIDE STREET SIDEWALKS

E11.1 The Contractor shall be responsible for the removal and reinstallation of any concrete paving and/or interlocking paving stones/brick on private sidewalks as a result of vertical grade changes in the proposed pavement. The Contractor shall be responsible for the removal and reinstallation of any concrete and/or interlocking paving stones/ brick on side street sidewalks and City owned Property as a result of vertical grade changes in the proposed pavement.

E11.2 The removal and reinstallation of concrete sidewalk paving and/or interlock paving stones/brick on private sidewalks, side streets and City owned property, to meet new pavement grades, have been included in the area calculations for these items of Work.

E12. MATCHING EXISTING GRADES

E12.1 Wherever the proposed sidewalk meets existing pavement, building edge, doorway or property line, the Contractor shall construct the sidewalk to an acceptable grade, as directed by the Contract Administrator, to ensure that proper drainage and accessibility are maintained. Where maintenance of existing grade is not possible, Contractor to adjust grade as directed by the Contract Administrator.

E12.2 All costs associated with matching existing grades shall be included in the unit price bid for Supply and Install Concrete Sidewalk Paving.

E13. SAWCUTTING PAVEMENT

E13.1 At the limits of excavation, the Contractor shall saw cut the existing paving to produce a clean straight edge when excavated.

E13.2 The cost of saw cutting and disposal of any surplus material shall be included in the unit prices bid herein.

E14. CLEARING AND GRUBBING

- E14.1 The Contractor is to note that the Clearing and Grubbing is to include the removal of all the individual trees and shrubs shown on the drawings, as well as all the root masses associated with these trees and shrubs.
- E14.2 Construction Methods - as per CW 3010
- E14.3 Clearing and Grubbing is incidental to the unit prices bid for "Excavate and Remove Existing Shrub Bed".

E15. BASE COURSE MATERIAL

- E15.1 This Specification shall supplement Standard Construction Specification CW 3110 and CW 3130.
- E15.2 The Work of this section comprises the furnishing of all labour, equipment and materials required to complete the supply and placing of base course material Work as shown on the Drawings and as hereinafter specified, including, but not necessarily confined to, the following:
- (a) Supply and Placement of Base Course Material
 - (b) Supply and Placement of Sub-Base
 - (c) Compaction
- E15.3 There will be no separate measurement and payment for the supply and placement of sub-base. All Work shall be considered incidental to the Supply and Placing of Base Course Material.
- E15.4 There will be no separate measurement and payment for compaction. All Work shall be considered incidental to the Supply and Placing of Base Course Material.
- E15.5 All costs in connection with the testing and approval of base courses shall be considered incidental to the Supply and Placing of Base Course Material

Method of Measurement

- E15.6 Supply and placing base course material will be measured on a volume basis. The area to be paid for shall be the total number of cubic meters placed in accordance with this Specification and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

Basis of Payment

- E15.7 Supply and placing base course material will be paid for at the Contract Unit Price per cubic metre for 'Supply and placing base course material', measured as specified herein, which price shall be payment in full for completing all operations herein described and all other items incidental to the Work included in this Specification.

E16. JOINT DETAILS

- E16.1 The Contractor shall ensure that the joint spacing for concrete pavement Works under this Contract are in accordance with the latest revision Standard Drawings SD-218A, SD-218B, SD-219, SD-220A, SD-220B, SD-220C.
- E16.2 All costs associated with this item of Work are incidental to the unit prices bid.

E17. SIGN SUPPORT CLAMPS

- E17.1 The Contractor shall install all new sign support clamps at the locations as shown on the Drawings or as directed by the Contract Administrator. The City shall supply all sign support clamps.
- E17.2 All costs in connection with the installation of sign support clamps are incidental to the unit prices bid.

E18. REMOVALS

- E18.1 Further to Specification CW 3110 and due to the extent and nature of underground services in the street right-of-way, the Contractor shall be permitted to use only backhoe type equipment when excavating sub-grade material.
- E18.2 Further to Specifications CW 3230 and CW 3235, the Contractor shall sawcut and remove existing concrete sidewalk paving as shown on the Drawings and as directed by the Contract Administrator. The removal shall include all existing concrete and base course where applicable.

Description

- E18.3 This Specification shall cover the removal of:
- (a) existing concrete sidewalk,
 - (b) concrete edger,
 - (c) reinforced concrete shelter bases,
 - (d) concrete bases,
 - (e) asphalt patches,
 - (f) interlocking paving stones,
 - (g) information kiosk and cast in place base,
 - (h) precast concrete tree grates,
 - (i) site furniture,
 - (j) shrub beds,
 - (k) Excavation, removals, and disposal of unsuitable subgrade and replacement with compacted granular base material.
- E18.4 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work hereinafter specified.

Equipment

- E18.5 All equipment shall be of a type approved by the Contract Administrator and shall be kept in good working order.

Construction Methods

- E18.6 The Contractor shall restrict his activities strictly to within the limits of the Works, unless receiving prior written approval from the Contract Administrator.
- E18.7 The Contractor shall sawcut, remove and dispose of existing concrete sidewalk, asphalt patches and concrete edger as indicated on the drawings.

- E18.8 The Contractor shall breakout, remove and dispose of existing reinforced concrete shelter bases as indicated on the drawings.
- E18.9 The Contractor shall breakout, excavate, remove and dispose of the top 450mm of existing concrete bases and fill with compacted granular base material to depth required for surface treatment as indicated on the drawings.
- E18.10 The Contractor shall remove and stockpile existing interlocking paving stones for reinstallation. Disposal of sand setting bed and sawcut, removal and disposal of lean mix concrete base is incidental to the Work. All unused paving stone in good condition is to be palleted and delivered to as noted on the drawings. Unusable paving stone is to be disposed of.
- E18.11 The Contractor shall breakout, remove and dispose of existing cast in place bases and information kiosks on Portage Avenue and remove and dispose of information kiosks on Graham Ave and Vaughan St. as shown on the Drawings.
- E18.12 The Contractor is to remove from site and dispose of two piece precast concrete tree grates as indicated on the Drawings.
- E18.13 The Contractor is to remove from site and deliver, to sites indicated on the Drawings, site furniture as indicated on the Drawings. Site furniture to be relocated includes:
- (a) Large planters from Osborne Exchange, Polo Park, Graham Ave, (approximately 7 units)
 - (b) Small planters from University of Manitoba, University of Winnipeg and Graham Ave. (approximately 30 units)
 - (c) Concrete bench ends from all sites. (approximately 20 units)
 - (d) Information boards on Graham Avenue. (approximately 9 units)
- E18.14 The Contractor is to remove from site and dispose of site furniture as indicated on the Drawings. Site furniture to be removed includes:
- (a) Metal bench seats (approximately 35 units)
 - (b) Broken planters (approximately 4 units)
 - (c) Newspaper box holders (approximately 20 units)
 - (d) Broken waste receptacles (approximately 2 units)
- E18.15 The Contractor shall excavate and remove existing shrub beds as indicated on the Drawings including all plant material, roots, mulch and planting soil.
- E18.16 The Contractor shall load and haul all removed material from the Site and dispose of these materials at a dump located by the Contractor and approved by the Contract Administrator. Any materials dropped or spilled on any streets during the hauling operations shall be promptly cleaned up at the expense of the Contractor, to the satisfaction of the Contract Administrator.
- E18.17 The Contractor shall ensure that upon completion of the removal operations, the Site shall be left free of any hazardous depressions and in a neat condition.
- E18.18 If required and at locations directed by the Contract Administrator, the Contractor shall excavate and remove unsuitable subgrade material and replace it with compacted granular material in accordance with Specification CW3110. Only areas approved on site by Contract Administer prior to excavation will be measured and paid.

Method of Measurement

- E18.19 Removal of concrete sidewalk paving will be measured on an area basis for Work completed in accordance with this Specification as determined by the Contract Administrator.

- E18.20 Removal of concrete edger will be measured on a length basis for Work completed in accordance with this Specification as determined by the Contract Administrator.
- E18.21 Removal of asphalt patches will be measured on an area basis for Work completed in accordance with this Specification as determined by the Contract Administrator.
- E18.22 Removal of reinforced concrete shelter bases will be measured on an area basis for Work completed in accordance with this Specification as determined by the Contract Administrator.
- E18.23 Removal of concrete bases will be measured on a per unit basis for Work completed in accordance with this Specification as determined by the Contract Administrator.
- E18.24 Remove and stockpile existing interlocking paving stones will be measured on an area basis for Work completed in accordance with this Specification as determined by the Contract Administrator.
- E18.25 Removal of information kiosk and cast in place base will be measured on a per unit basis for Work completed in accordance with this Specification as determined by the Contract Administrator.
- E18.26 Removal of precast concrete tree grates will be measured on a per unit basis for Work completed in accordance with this Specification as determined by the Contract Administrator.
- E18.27 Removal and delivery of existing site furniture will be measured on a lump sum basis for Work completed in accordance with this Specification as determined by the Contract Administrator.
- E18.28 Removal and disposal of existing site furniture will be measured on a lump sum basis for Work completed in accordance with this Specification as determined by the Contract Administrator.
- E18.29 Excavation and removal of shrub beds will be measured on an area basis for Work completed in accordance with this Specification as determined by the Contract Administrator.
- E18.30 Removal of unsuitable subgrade and replacement with compacted granular base will be measured on a volume basis. The total number of cubic metres to be paid for shall be the total number removed and replaced in accordance with this Specification as computed from measurements made by the Contract Administrator.

Basis of Payment

- E18.31 Removal of Concrete sidewalk paving will be paid for at the contract square metre price for "Sawcut, Remove, and Dispose of Concrete Sidewalk", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E18.32 Removal of Concrete asphalt patches will be paid for at the contract square metre price for "Sawcut, Remove, and Dispose of Asphalt Patches", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E18.33 Removal of concrete edger will be paid for at the contract linear metre price for "Sawcut, Remove, and Dispose of Concrete Edger", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E18.34 Removal of reinforced concrete shelter bases will be paid for at the contract square metre price for "Sawcut, Remove, and Dispose of Reinforced Concrete Shelter Bases", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

- E18.35 Removal of concrete bases will be paid for at the contract unit price for “Sawcut, Excavate, Remove, and Dispose of Concrete Bases”, measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E18.36 Removal and stockpile of existing interlocking paving stones will be paid for at the contract per square metre price “Remove and Stockpile Existing Interlocking Paving Stones”, measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E18.37 Removal of information kiosk and cast in place base will be paid for at the contract unit price for “Remove Existing Information Kiosk” measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E18.38 Removal of precast concrete tree grates will be paid for at the contract unit price for “Remove and Dispose of Existing of Piece Concrete Tree Grates” measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E18.39 Removal and delivery of existing site furniture will be paid for at the contract lump sum price for “Relocation, Removal and Delivery of Existing Site Furniture”, measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E18.40 Removal of disposal of existing site furniture will be paid for at the contract lump sum price for “Removal and Disposal of Existing Site Furniture” measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E18.41 Removal of Shrub bed will be paid for at the contract square metre price for “Excavate and Remove Existing Shrub Bed”, measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E18.42 Removal of unsuitable subgrade and replacement with compacted granular base will be paid for at the contract unit price per cubic meter for “Remove existing unsuitable subgrade and replace with compacted granular base” as specified herein, which price shall be payment in full for performing all operations herein described (including salvaging mesh for reinstallation where noted) and all other items incidental to the Work included in this Specification.

E19. CONCRETE CURB RENEWAL

- E19.1 All work to be in accordance with CW 3240.

Measurement and Payment

- E19.2 Further to CW 3240 item 4.3 Concrete Curb Renewal:

- E19.2.1 Items of work:

- E19.2.2 Concrete Curb Renewal

- (i) 150mm ht. Barrier Curb as per SD 206A
- (ii) Mountable curb as per SD 201
- (iii) Ramp curb as per SD 229E

E20. CAST-IN-PLACE CONCRETE

General

E20.1 The "General Conditions and Supplemental Conditions" of this Specification and all documents listed in the Quotation shall apply to and govern all phases of the Work hereinafter specified and/or shown on the Drawings.

Scope of Work

Work Included

E20.2 The Work of this section comprises the furnishing of all labour, equipment and materials required to complete the supply and installation of cast-in-place concrete slabs and edger as shown on the drawings and as hereinafter specified, including, but not necessarily confined to the following:

- (a) Excavation.
- (b) Granular Fill work as required.
- (c) Supply, erection and removal of all formwork as required.
- (d) Design of concrete mixes.
- (e) Supply, placing and curing of concrete edger.
- (f) Supply, placing and curing of concrete for Transit Shelter Bases as shown on the Drawings. Co-ordinate with Winnipeg Transit (who will supply and install shelter) as required.
- (g) Supply, placing and curing of reinforced concrete planter wall.
- (h) Co-ordination of the installation of all electrical and other items to be installed in the concrete works by other trades.
- (i) Detailing, supply and placing of reinforcing.
- (j) Clean-up.

Work Not Included

E20.3 The following items of Work are specified under other sections of the specifications and are not included in this section:

- (a) Supply of miscellaneous metal anchors, bolts, inserts, etc.

Materials

E20.4 Concrete for cast-in-place Shelter bases as follows:

- Cement: Type 50
- Max. Coarse Aggregate: 20mm
- Min Compressive Strength at 28 days +35Mpa
- Min. Cement Content: 310 kg/cu.m
- Max. Water Cement Ratio: 0.45
- Class of Exposure: C-2
- Max. Slump: 90mm ± 20mm
- Air Content: 5 to 8%
- Flyash content: Max. 15% of Cementitious Material

E20.5 Concrete mix for concrete edger to meet City of Winnipeg Specifications CW 3310.

E20.6 Fine aggregate shall consist of natural sand or manufactured sand and shall conform to all requirements of CAN3.A23.1.

- E20.7 Coarse aggregate shall consist of hard, strong, uncoated durable particles of crushed stone, gravel or approved combination thereof and shall be free from an excess of thin, elongated or soft pieces, frozen lumps, vegetable matter or other deleterious matter, and shall conform with all the requirements of CAN3-A23.1. Maximum size of coarse aggregate shall be 20 mm.
- E20.8 Water for concrete shall be clean and free from injurious amounts of oil, acid, alkali, salts, silt, organic matter or other deleterious matter. The quality of the water shall be equal to or better than that of potable water.
- E20.9 A non-detergent type of air-entraining admixture, supplied in liquid form, shall be metered into the mix. The total air in the placed concrete shall be 5% - 8%.
1. Reinforcing steel shall be grade 300 deformed bars. Detailing of reinforcing steel shall be in accordance with ACI 315. All bars, which require bending, shall be bent in shops.
- E20.10 All reinforcing steel shall be straight, clean and free from paint oil, mill scale, excess rust and any injurious defects, which may affect its strength or bond.:
- E20.11 Ends of reinforcing steel intended for bonding that are to be left exposed for some time shall be protected from injury, oils or moisture.
- E20.12 The City may engage a fully qualified Inspecting Engineer and Testing Laboratory to:
- (a) Inspect the pile excavations to determine that they have been augured to the specified depth, are of the specified size, are clean and level, and meet the design criteria.
 - (b) Take test cylinders during concrete placing and carry out compression tests to determine whether concrete produced complies with these Specifications.
 - (c) Take compaction tests of compacted granular subbase and subgrade material.
 - (d) Submit reports to the Contract Administrator of all materials, concrete, and caisson tests and inspections.
- E20.13 Three concrete test cylinders to be taken for pile cast. One cylinder from each group shall be tested at 7 days, one at 14 days and the remainder at 28 days. Sampling and testing procedures shall be according to CAN3-A23.1 latest edition.

Placing of Concrete for Slab

- E20.14 Placing of concrete shall be in accordance with CAN3-A23.1
- E20.15 No concrete shall be placed until formwork, insulation, reinforcing steel, sleeves, hangers, anchors, inserts, etc., required to be built into the concrete have been inspected by the Contract Administrator.
- E20.16 Before placing concrete on bearing strata, notify the Contract Administrator so that she may make an inspection of the exposed bearing surface.
- E20.17 No concrete shall be placed in water or upon frozen surfaces.
- E20.18 Before placing any concrete, all debris shall be removed, forms shall be thoroughly oiled except where form oil will be detrimental to the finished surface. Equipment shall be cleaned of or hardened concrete and foreign material.
- E20.19 All concrete shall be thoroughly vibrated during pouring. Precautions shall be taken to prevent separation or loss of ingredients while transporting the concrete. At no time shall concrete be allowed to a free fall of more than 1.5 m.

- E20.20 Conveying equipment shall be on temporary runways built over the floor system and runway supports shall not bear upon the fresh concrete.
- E20.21 Placement of concrete shall be carried out as a continuous operation until the placing of an individual section is completed. Concrete shall be carefully worked around reinforcement and embedded fixtures, along surfaces and into corners of forms. Vibrators shall be used, and operated under experienced supervision; forms must be constructed to withstand their action.
- E20.22 The Contractor is advised that no joints will be allowed in the slab except as directed on Site in conjunction with the Contract Administrator.

Cold Weather Concreting

- E20.23 The protection of concrete and concreting operations during cold weather shall be in accordance with CSA A23.1
- E20.24 Equipment for heating concrete after placement must be in operation before pouring is commenced. Provide sufficient thermometers to be placed in accordance with the Contract Administrator's instructions. Tarpaulins shall not be placed directly on the surface of slabs. Indirect light units only shall be used.

Finishing of Slabs

- E20.25 All slabs shall be finished by a speciality concrete finishing Contractor.
- E20.26 The size of finishing crews shall be planned with due regard for the effects of concrete temperatures and atmospheric conditions on the rate of hardening of the concrete.
- E20.27 The shelter floor slab shall be power floated. The elevation of the finished floor slab shall not vary more than 4mm +/- from the design elevation. The minimum amount of steel trowelling shall be done.
- E20.28 The slab finish shall match concrete sidewalk finish as per CW 3325.

Clean Up and Damage

- E20.29 Immediately on completion of pile, shelter base, planter walls and slab, Contractor shall remove from Site all equipment, timbers, shores, excavated material, unused concrete, rubbish, etc., caused by his operations, and leave the Site clean.
- E20.30 The Contractor shall be responsible for making good all areas damaged by his operations in connection with this Contract regardless of the limits of the Contract as shown on the Drawings.

Method of Measurement

- E20.31 Supply and Installation of Cast in Place Concrete Edger shall be measured on a linear metre basis. The number of metres to be paid for shall be the total number of metres supplied in accordance with the Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.
- E20.32 Supply and Installation of Reinforced Concrete Shelter Base shall be measured on an area basis. The area to be paid for shall be the total number of square metres supplied in accordance with the Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

E20.33 Basis of Payment

E20.34 Supply and Installation of Cast in Place Concrete Edger shall be paid for at the contract square metre price for " Supply and Installation of Cast in Place Concrete Edger ", measured as specified herein, which price shall be payment in full for supplying all materials including compacted base course as required and performing all operations herein described and all other items incidental to the Work included in this specification.

E20.35 Supply and Installation of Reinforced Concrete Shelter Base shall be paid for at the contract square metre price for " Supply and Installation of Reinforced Concrete Base for Shelter", measured as specified herein, which price shall be payment in full for supplying all materials including compacted base course as required and performing all operations herein described and all other items incidental to the Work included in this specification.

E21. FULL DEPTH PATCHING OF EXISTING PAVEMENT SLABS

E21.1 All work to be in accordance with CW 3230.

E21.2 All work listed in CW 3230, including pavement removal, base preparation, placement of reinforcing steel, dowels and tie bars, placing full depth patches, disposal of material and traffic maintenance area incidental to the unit price bid for full depth patching of existing pavement slabs.

Method of Measurement

E21.3 Full depth Patching of Existing Pavement Slabs shall be measured on an area basis. The number of square metres to be paid for shall be the total number of square metres supplied in accordance with the Specifications and accepted by the Contract Administrator, as computed from measurements made on site by the Contract Administrator.

E21.4 Basis of Payment

E21.5 Full depth Patching of Existing Pavement Slabs shall be paid for at the contract square metre price for "Full depth Patching of Existing Pavement Slabs", measured as specified herein, which price shall be payment in full for supplying all materials including compacted base course as required and performing all operations herein described and all other items incidental to the Work included in this specification.

E22. ADJUSTMENT OF PAVEMENT AND BOULEVARD STRUCTURES

E22.1 Further to CW 3210 all existing surface utilities within the area of new sidewalk, interlocking paving and full depth patching of existing pavement are to be adjusted to meet finish grades.

E22.2 Adjustment of pavement and boulevard structures is incidental to the Work with the exception of manholes, catch basins and curb and gutter inlets noted on the drawings as requiring significant adjustment. The adjustment of these structures is to be measured and paid for at the contract unit price per unit adjusted in accordance with CW 3210 including replace, remove or add precast concrete riser sections and compacted granular backfill as required.

E22.3 All surface utilities are to be provided with cast in place concrete isolation collars as per standard City of Winnipeg details and as per the Drawings. Collar dimensions and forms are to be confirmed on site by Contract Administrator prior to construction. Installation of new and renewal of existing isolation collars are incidental to the Work.

E23. CONCRETE SIDEWALK

Description

- E23.1 All Work in this section shall be to City of Winnipeg Specification CW 3325 for Supply and Installation of Concrete Sidewalk.
- E23.2 Blockouts for all paving bands in sidewalk to be constructed as per detail. All forming is incidental to the unit price bid for concrete sidewalk.
- E23.3 The Contractor shall ensure that all sidewalk ramps are maintained. Sidewalk ramps are incidental to the Work.
- E23.4 The Contractor shall adjust existing catch basins, manholes, watermain valve boxes, curb stop boxes, etc. to City of Winnipeg specification CW 3210 to meet the finished grade of the proposed sidewalk and roadway. All costs in connection with the adjustment of existing catch basins, manholes, watermain valve boxes, curb stop boxes, etc. are incidental and shall be included in the unit prices bid for "Supply and Install Concrete Sidewalk" and "Full Depth Patching of Pavement Slabs" except as noted in E22.2.

Method of Measurement

- E23.5 Supply and Installation of 100 mm Concrete Sidewalk will be measured on an area basis. The surface area to be paid for shall be the total number of square metres supplied in accordance with the specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

Basis of Payment

- E23.6 Supply and Installation of Concrete Sidewalk will be paid for at the contract square metre price for "Supply and Installation of Concrete Sidewalk", measured as specified herein, which price shall be payment in full for supplying all materials including compacted base course as required and performing all operations herein described and all other items incidental to the Work included in this specification.

E24. INTERLOCKING PAVING STONES

Description

- E24.1 Further to CW 3335 this Specification shall cover the:
- (a) reinstallation of stockpiled interlocking paving stones,
 - (b) supply and installation of detectable paving stones,
 - (c) supply and installation of patio slabs,
 - (d) releveling existing paving stones,
 - (e) supply and installation of sand setting bed,
 - (f) supply and installation of grout,
 - (g) Delivery of unused stockpiled interlocking paving stone.
- E24.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary or and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

Materials

- E24.3 Interlocking paving stones shall be
- (a) stockpiled pavers from job site. All pavers are to be undamaged and cleaned as required,

- (b) Blue Holland Stone 105x210x60mm as supplied by Barkman Concrete. Contact Wayne Wiebe, phone 667-3310.
- (c) Charcoal Holland Stone 105x210x80mm as supplied by Barkman Concrete. Contact Wayne Wiebe, phone 667-3310.
- (d) Charcoal Holland Square 210x210x60mm as supplied by Barkman Concrete. Contact Wayne Wiebe, phone 667-3310.

E24.4 Detectable paving stones to be:

- (a) Blue Holland Stone ADA detectable pavers 105x210x60mm for sidewalks, and
 - (b) Blue Holland ADA detectable pavers 105x210x80mm for roadways
- as supplied by Barkman Concrete. Contact Wayne Wiebe, phone 667-3310.

E24.5 Patio slabs to be Quarter Cobble Dynasty Collection slabs in Sierra as supplied by Barkman Concrete. Contact Wayne Wiebe, phone 667-3310.

E24.6 Sand:

- (a) Clean brick sand as joint filler.
- (b) Clean brick sand as minimum 13mm depth setting bed

E24.7 Grout:

- (a) Grout as specified hereinafter shall be used for grouting paving stone and brick in areas indicated on the drawings. The grout shall have a compressive strength of 25 MPA at 28 days, determined on 50 mm cubes stored and tested in accordance with ASTM C109, and shall consist of normal Portland cement, sand and water.
- (b) The water-cement ratio shall be kept in the range of 0.45 to 0.55.
- (c) The grout shall have between 3% and 5% entrained air.
- (d) Acryl-Stik or approved equal to be used in grout at approximately 4 litres Acryl-Stik to 3 litres water.
- (e) Admixtures to be used in the grout shall be supplied in accordance with the requirements of the City of Winnipeg Standard CW 3310.
- (f) The grout shall be of a consistency suitable for the application intended as approved by the Contract Administrator.
- (g) The Contractor shall provide the Contract Administrator with a mix design statement certifying the constituent materials and mix proportions that will be used in the grout for approval prior to construction.

Construction Methods

E24.8 Interlocking paving stones shall be installed in block out in concrete sidewalk.

E24.9 Existing paving stones to be relevelled will be removed and stockpiled adjacent to areas to be relevelled.

Installation

E24.10 Contractor to verify the exact dimensions of pavers and panels prior to construction of block outs in concrete sidewalk.

- (a) Install concrete sidewalk as specified on Drawings.
- (b) Install sand bed to minimum 13mm depth as specified on Drawings. Adjust depth of pavers under areas to be relevelled to ensure surface of pavers is flush with adjacent paving.

- (c) Do not compact setting bed prior to installation of pavers.
- (d) Spread only sufficient area which can be covered with pavers same day.
- (e) Lay pavers on sand bed hand tight.
- (f) In areas where pavers are to be grouted in place clean existing concrete, install grout bed and then place pavers on grout.
- (g) Grout between pavers as required to ensure stability.
- (h) Remove adjacent pavers in bands as required to ensure that bricks do not require cutting on straight bands.
- (i) Where paving pattern is interrupted by vertical structural elements pavers must be sawcut and fit true and hand tight.
- (j) Commence installation of pavers against edge to obtain straightest possible course for installation.
- (k) Pavers shall be cut with a saw only, to obtain true even undamaged edges. Chipped pavers are unacceptable.
- (l) Crews shall Work on installed pavers, not on sand layer.
- (m) Spread and fine grade brick sand over paving surface and sweep into joints, in several directions. Sand is incidental to the price for supply and installation of pavers.
- (n) Compact pavers with vibratory plate compactor having mass of at least 113kg. Compaction is incidental to the price for supply and installation of paving stone.
- (o) Sweep remaining sand over all paving areas and remove from Site.
- (p) Replace at no extra cost all whole or cut stones marked as unacceptable.
- (q) Remove cracked, chipped, broken or otherwise damaged paving materials from Site immediately.
- (r) Upon completion, clean in accordance with manufacturer's recommendations.

E24.11 Upon completion of the Work all remaining interlocking paving stone in good condition is to be palleted and delivered as specified on the Drawings and as directed by the Contract Administrator. All stockpiling, palleting and delivery is incidental to the Work.

Method of Measurement

- E24.12 Reinstallation of stockpiled interlocking paving stones will be measured on a surface area basis. The surface area to be paid for shall be the total number of square metres installed in accordance with the Drawings and Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.
- E24.13 Supply and installation of detectable interlocking paving stones will be measured on a surface area basis. The surface area to be paid for shall be the total number of square metres installed in accordance with the Drawings and Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.
- E24.14 Supply and installation of interlocking paving stones will be measured on a surface area basis. The surface area to be paid for shall be the total number of square metres installed in accordance with the Drawings and Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.
- E24.15 Supply and installation of patio slabs will be measured on a per unit basis. The surface area to be paid for shall be the total number of units installed in accordance with the Drawings and Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

- E24.16 Releveling of existing interlocking paving stones on sand bed will be measured on a surface area basis. The surface area to be paid for shall be the total number of square metres installed in accordance with the Drawings and Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.
- E24.17 Releveling of existing interlocking paving stones with grout will be measured on a surface area basis. The surface area to be paid for shall be the total number of square metres installed in accordance with the Drawings and Specifications and accepted by the Contract Administrator, as computed from measurements made by the Contract Administrator.

Basis of Payment

- E24.18 Reinstallation of stockpiled interlocking paving stones will be paid for at the Contract Unit Price per square metre for "Reinstall Stockpiled Interlocking paving stones" measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E24.19 Supply and installation of detectable interlocking paving stones will be paid for at the Contract Unit Price per square metre for "Supply and Install Detectable Interlocking Paving Stones" measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E24.20 Supply and installation of interlocking paving stones will be paid for at the Contract Unit Price per square metre for "Supply and Install Interlocking Paving Stones" measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E24.21 Supply and installation of patio slabs will be paid for at the Contract Unit Price per unit for "Supply and Install Patio Slabs" measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E24.22 Releveling of existing interlocking paving stones on sand bed will be paid for at the Contract Unit Price per square metre for "Releveling of existing interlocking paving stones on sand bed" measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.
- E24.23 Releveling of existing interlocking paving stones with grout will be paid for at the Contract Unit Price per square metre for "Releveling of existing interlocking paving stones with grout" measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work included in this Specification.

E25. GRANITE CURB REPAIR

Description

- E25.1 This specification shall cover the removal and reinstallation of existing granite curbs.
- E25.2 The Work of this section comprises the furnishing of all superintendence, overhead, labour, materials equipments, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all work as hereinafter specified.

General

E25.3 The existing granite curb units are to be removed stockpiled and reinstalled in areas as noted on the drawings and as marked on site by Contract Administrator. All work and materials in this specification are incidental to the unit price bid.

Materials

E25.4 Grout

- (a) Grout shall consist of one part normal Portland cement and one part sand with sufficient water and Acrl-Stix bonding agent to produce a mortar like consistency. All grout to have Acrl-Stix bonding agent mixed in. Grout for filling between curb sections shall be coloured to match the granite curbs.
- (b) The Contractor shall provide the Contract Administrator with a mix design statement certifying the constituent materials and mix proportions that will be used in the grout for approval prior to construction.

E25.5 Sealant

- (a) Sealant shall be Sonneborn NP-2, grey

E25.6 Tie Bars

- (a) Tie bars shall be grade 300 deformed bars, epoxy coated as per CW 3230

E25.7 Bonding Agent for Tie Bars

- (a) Epoxy resin as per CW 3230 and CW 3710.

Equipment

E25.8 All equipment shall be of type approved by the Contract Administrator and shall be kept in good working order.

Construction Methods

E25.9 Existing granite curb sections that have slumped, fallen or been dislodged are to be removed and stockpiled for reinstallation.

E25.10 Remove grout residue from concrete pavement and sidewalk.

E25.11 Supply and place grout pad on the edge of the concrete road slabs. Fill space between face of curb and edge of road slab with grout. For all areas to be repaired.

E25.12 Replace all tie bars in predrilled holes with approved bonding agent

E25.13 Install coloured grout between each curb piece. Colour to match granite curb.

E25.14 Seal space uniformly between face of granite curb and edge of roadway and between adjacent curbs with Sonneborn NP-2.

E25.15 Any granite curb unit, roadway, paver or sidewalk damaged is to be replaced. Replacement is incidental to the unit price bid for Granite Curb Repair.

Quality Control

E25.16 All work and all materials furnished and supplied under this specification are subject to close and systematic inspection and testing by the Contract Administrator including all operations from the selection and production of materials through to final inspection of the specified work. The Contractor shall be wholly responsible for the control of all operations incidental thereto not withstanding any inspection or approval that may have been previously given. The Contract

Administrator reserves the right to reject any materials or works, which are not in accordance with the requirements of this specification.

Method of Measurement

E25.17 Granite Curb Repair will be measured on a length basis for "Repair Existing Granite Curbs". The length to be paid for shall be the total number of metres repaired in accordance with this Specification, and acceptable to the Contract Administrator, as computed from measurements made on site by the Contract Administrator.

Basis of Payment

E25.18 Granite Curb Repair will be paid for at the Contract Unit Price per metre for "Repair Existing Granite Curbs". Measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.

E26. SITE FURNITURE

Description

E26.1 The following list generally describes the scope of this section:

- (a) Supply and installation of:
 - (i) Rectangular Concrete Bench End Pieces
 - (ii) Accessible Concrete Bench Ends
 - (iii) Precast Concrete Fence Cap
 - (iv) Precast Concrete Fence Panel
 - (v) Precast Concrete Fence Post
 - (vi) Two Piece Precast Concrete Tree Grate Panel
 - (vii) Metal Guard Rail
 - (viii) Bicycle Lockers

General

Delivery and Storage

E26.2 Store units in a protected location, immediately upon arrival on the Site.

E26.3 Remove from Site any units which have been damaged during transportation and replace.

Products

E26.4 Rectangular Concrete Bench Ends and Accessible Concrete Bench Ends to be charcoal exposed aggregate finish with mounts for bench to be supplied by:

Barkman Concrete Ltd.
909 Gateway Road
Winnipeg, Manitoba, R3K 3L1
Contact: Wayne Wiebe
T (204) 667-3310

E26.5 Precast concrete fence panel, post and cap to be custom charcoal finish as be supplied by:

Barkman Concrete Ltd.
909 Gateway Road

Winnipeg, Manitoba, R3K 3L1
Contact: Wayne Wiebe
T (204) 667-3310

- E26.6 Two piece Precast Concrete Tree Grates to be custom rectangular 1220x1830mm finished size natural 'sidewalk' finish as supplied by:

Barkman Concrete Ltd.
909 Gateway Road
Winnipeg, Manitoba, R3K 3L1
Contact: Wayne Wiebe
T (204) 667-3310

- E26.7 Metal Guard Rail as per Drawings to be supplied by:

Winnipeg Transit
421 Osborne
Contact: Brian Newton
T: (204) 986-5812

- E26.8 Bicycle Lockers as per Drawings to be supplied by:

Cycle-safe inc.
Grand Rapids, MI
F (616) 954-0290
info@cycle-safe.com

Installation of Site Furniture

- E26.9 Site Furniture shall be installed in locations indicated on the Construction Drawings.
- E26.10 All Site Furniture shall be set level.
- E26.11 Bolt metal guard rails to sidewalk, including all drilling, epoxy and hardware. All hardware to be stainless steel, bolts to be tamper proof.
- E26.12 All site furniture shall be installed as per manufacturer's recommendations.

Protection after Completion

- E26.13 Protect and maintain site furnishings, including accessories, until acceptance of project Work.
- E26.14 Immediately remove from Site, damaged furnishing and accessories. Replace, repair, re-finish, or otherwise make good to approval of Contract Administrator.

Method of Measurement

- E26.15 Site Furniture will be measured on a unit basis. The number of each item to be paid for will be the total number placed in accordance with this Specification and accepted by the Contract Administrator, as computed by the Contract Administrator.

Basis of Payment

- E26.16 Site Furniture will be paid for at the Contract Unit Price for each item, which price shall be payment in full for supply of all materials and performing all operations herein described and for all other items incidental to the Work included in this Specification.

E27. SITE CLEAN UP

- E27.1 The Contractor shall upon the completion of Work each day, load and dispose of all excess asphalt cuttings, spoiled concrete, reinforcing steel, granular and other material associated with the Works from the Work Site.
- E27.2 The Contractor shall secure or remove all of his machinery and equipment at the end of each day from the immediate Work Site.
- E27.3 The Contractor will not be permitted to store machinery, equipment, or materials on public roads overnight.
- E27.4 Any costs in connection with the above mentioned Works are incidental to the unit prices bid on this project.