



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 184-2006

**PEMBINA HIGHWAY (SOUTHBOUND) – GRANT AVENUE TO HARROW STREET,
STREET RESURFACING**

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	4
Form G1: Bid Bond and Agreement to Bond	9
Form G2: Irrevocable Standby Letter of Credit and Undertaking	11

PART B - BIDDING PROCEDURES

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

PART C - GENERAL CONDITIONS

C1. General Conditions	1
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PART D - SUPPLEMENTAL CONDITIONS

General

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

Submissions

D7. Safe Work Plan	2
D8. Insurance	3
D9. Performance Security	3
D10. Subcontractor List	4
D11. Detailed Work Schedule	4

Schedule of Work

D12. Commencement	4
D13. Working Days	4
D14. Restricted Work Hours	5
D15. Work By Others	5
D16. Sequence of Work	5
D17. Substantial Performance	6
D18. Total Performance	6
D19. Liquidated Damages	7
D20. Scheduled Maintenance	7

Control of Work

D21. Job Meetings	7
D22. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	8

Warranty

D23. Warranty	8
Form H1: Performance Bond	9
Form H2: Irrevocable Standby Letter of Credit	11
Form J: Subcontractor List	13
Form L: Detailed Work Schedule	14

PART E - SPECIFICATIONS

General

E1. Applicable Specifications, Standard Details and Drawings	1
E2. Geotechnical Report	1
E3. Office Facilities	1
E4. Protection of Existing Trees	2
E5. Traffic Control	2
E6. Traffic Management	3
E7. Water Used By Contractor	3
E8. Supply and Installation of Pavement Repair Fabric	3
E9. Concrete Curb	4
E10. Adjustment of Existing Traffic Signals Pit Covers	4
E11. New Cast-in-Place Concrete Pile Foundations	5

Appendix 'A' - Geotechnical Report

PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

- B1.1 PEMBINA HIGHWAY (SOUTHBOUND) – GRANT AVENUE TO HARROW STREET, STREET RESURFACING

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. ENQUIRIES

- B3.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.
- B3.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.
- B3.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.
- B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.
- B3.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B4. ADDENDA

- B4.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.
- B4.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B4.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B4.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet website for addenda shortly before submitting his Bid.
- B4.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B5. SUBSTITUTES

- B5.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B5.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B5.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B5.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B5.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B5.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B5.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B5.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B5.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B14.
- B5.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B6. BID SUBMISSION

- B6.1 The Bid Submission consists of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices, hard copy;
 - (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;
- B6.2 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.
- B6.3 The Bid Submission shall be submitted enclosed and sealed in an envelope. The envelope shall be clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B6.3.1 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.
- B6.3.2 A hard copy of Form B: Prices must be submitted with the Bid Submission. If there is any discrepancy between the Adobe PDF version of Form B: Prices and the Microsoft Excel version of Form B: Prices, the PDF version shall take precedence.
- B6.4 Bid Submissions submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B6.5 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

B7. BID

- B7.1 The Bidder shall complete Form A: Bid, making all required entries.
- B7.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B7.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B7.2.
- B7.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

- B7.4** Paragraph 12 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, shall 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.
- B7.4.1** The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.
- B7.4.2** All signatures shall be original and shall be witnessed except where a corporate seal has been affixed.
- B7.5** If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid Submission and the Contract, when awarded, shall be both joint and several.

B8. PRICES

- B8.1** The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B8.1.1** For the convenience of Bidders, and pursuant to B6.3.2 and B14.4.2, an electronic spreadsheet Form B: Prices in Microsoft Excel (.xls) format is available along with the Adobe PDF documents for this Bid Opportunity on the Bid Opportunities page at the Materials Management Branch internet website at <http://www.winnipeg.ca/matmgt>.
- B8.2** The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B8.3** The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B9. QUALIFICATION

- B9.1** The Bidder shall:
- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
 - (b) be responsible and not be suspended, debarred or in default of any obligation to the City;
 - (c) be financially capable of carrying out the terms of the Contract;
 - (d) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract;
 - (e) have successfully carried out work, similar in nature, scope and value to the Work; and
 - (f) employ only Subcontractors who:
 - (i) are responsible and not suspended, debarred or in default of any obligation to the City (a list of suspended or debarred individuals and companies is available on the

Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>); and

- (ii) have successfully carried out work similar in nature, scope and value to the portion of the Work proposed to be subcontracted to them, and are fully capable of performing the Work required to be done in accordance with the terms of the Contract;
 - (g) have a written workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba);
- B9.2 Further to B9.1(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>.)
- B9.3 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.
- B9.4 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.

B10. BID SECURITY

- B10.1 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.
- B10.1.1 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.
- B10.2 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.

- B10.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B10.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.
- B10.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.
- B10.3 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.

B11. OPENING OF BIDS AND RELEASE OF INFORMATION

- B11.1 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.
 - B11.1.1 Bidders or their representatives may attend.
 - B11.1.2 Bid Submissions determined by the Manager of Materials, or his designate, to not include the bid security specified in B10 will not be read out.
- B11.2 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>.
- B11.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B11.4 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.

B12. IRREVOCABLE BID

- B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B12.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work 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 11 of Form A: Bid.

B13. WITHDRAWAL OF BIDS

- B13.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
 - B13.1.1 Notwithstanding 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.

- B13.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B13.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials 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 12 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B13.1.3(b), declare the Bid withdrawn.
- B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

B14. EVALUATION OF BIDS

- B14.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B9 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B5.
- B14.2 Further to B14.1(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.
- B14.3 Further to B14.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid Submission or in other information required to be submitted, that he is responsible and qualified.
- B14.4 Further to B14.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B14.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.
- B14.4.2 The electronic Form B: Prices and the formulas imbedded in that spreadsheet are only provided for the convenience of Bidders. The City makes no representations or warranties as to the correctness of the imbedded formulas. It is the Bidder's responsibility to ensure the extensions of the unit prices and the sum of Total Bid Price performed as a function of the formulas within the electronic Form B: Prices are correct.

B15. AWARD OF CONTRACT

- B15.1 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.
- B15.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.
- B15.2.1 Without limiting the generality of B15.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B15.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid.

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.
- C1.2 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:
- (a) Concrete Repairs, Asphalt Resurfacing and Related Works
 - (i) Southbound lanes of Pembina Highway from Grant Avenue to Harrow Street.
- D2.2 The major components of the Work are as follows:
- (a) Planing of asphalt overlay;
 - (b) Excavation and placement of base course materials;
 - (c) Full depth repair of existing concrete joints and slabs;
 - (d) Construction of 200 mm plain dowelled concrete pavement;
 - (e) Installation of catchpits and adjustment of catchbasins, water valves and manholes;
 - (f) Renewal of curbs and sidewalk and construction of monolithic safety median;
 - (g) Placement of asphalt overlay (average thickness 75 mm);
 - (h) Boulevard restoration;
 - (i) Sewer repair at Pembina Highway and Weatherdon Avenue;
 - (j) Installation of new concrete pile in the median area south of Stafford Street.

D3. CONTRACT ADMINISTRATOR

- D3.1 The Contract Administrator is Earth Tech (Canada) Inc., represented by:
Mr. Kevin W. Rae, P. Eng.
Project Manager
850 Pembina Highway, Winnipeg, Manitoba R3M 2M7
Telephone No. (204) 926-1118
Facsimile No. (204) 478-7856
- D3.2 At the pre-construction meeting, Mr. Kevin W. Rae, P. Eng. 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.
- D4.2 At least two (2) business days prior to the commencement of any Work on the site, the Contractor shall provide the Contract Administrator with a phone number where the supervisor identified in D4.1 or an alternate can be contacted 24 hours a day to respond to an emergency.

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. SAFE WORK PLAN

- D7.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.

D7.2 The Safe Work Plan shall be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

D8. INSURANCE

D8.1 The Contractor shall provide and maintain the following insurance coverage:

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

D8.2 Deductibles shall be borne by the Contractor.

D8.3 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 the GC:4.1 for the return of the executed Contract.

D8.4 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.

D9. PERFORMANCE SECURITY

D9.1 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.

D9.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D9.2 If the bid security provided in his Bid Submission was not a certified cheque or draft pursuant to B10.1(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 and in no event later than the date specified in the GC:4.1 for the return of the executed Contract.

D10. SUBCONTRACTOR LIST

D10.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at or prior to a pre-construction meeting, or 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 GC:4.1 for the return of the executed Contract.

D11. DETAILED WORK SCHEDULE

D11.1 The Contractor shall provide the Contract Administrator with a detailed work schedule (Form L: Detailed Work Schedule) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.

SCHEDULE OF WORK

D12. COMMENCEMENT

D12.1 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.

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

- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence 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) the twenty-four (24) hour emergency response phone number specified in D4.2.
 - (iv) the Safe Work Plan specified in D7;
 - (v) evidence of the insurance specified in D8;
 - (vi) the performance security specified in D9;
 - (vii) the subcontractor list specified in D10;
 - (viii) the detailed work schedule specified in D11.
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D12.3 The Contractor shall not commence the Work on the Site before June 19, 2006, and shall commence the Work on Site no later than June 26, 2006, as directed by the Contract Administrator and weather permitting.

D13. WORKING DAYS

D13.1 Further to GC:1.1(gg);

D13.1.1 The Contract Administrator will determine daily if a Working Day has elapsed and will record his assessment. On a weekly basis the Contract Administrator will provide the Contractor with a record of the Working Days assessed for the preceding week. The Contractor shall sign each report signifying that he agrees with the Contract Administrator's determination of the Working Days assessed for the report period.

D13.1.2 Work done to restore the Site to a condition suitable for Work, shall not be considered "work" as defined in the definition of a Working Day.

D13.1.3 When the Work includes two or more major types of Work that can be performed under different atmospheric conditions, the Contract Administrator shall consider all major types of Work in determining whether the Contractor was able to work in assessing Working Days.

D14. RESTRICTED WORK HOURS

D14.1 Further to clause 3.10 of CW 1130, the Contractor shall require written permission 48 hours in advance from the Contract Administrator for any work to be performed between 2000 hours and 0700 hours, or on Saturdays, Sundays, Statutory Holidays and or Civic Holidays.

D15. WORK BY OTHERS

D15.1 Work by others on or near the Site will include but not necessarily be limited to:

- (a) City of Winnipeg, Traffic Signals Department – Upgrading of the traffic signals at the Grant Avenue/Pembina Highway intersection and upgrade of the existing tie-line in the Pembina Highway median, Grant Avenue to Stafford Street.

D16. SEQUENCE OF WORK

D16.1 Further to GC:6.1, the sequence of work shall be as follows:

D16.1.1 The Work shall be divided into three (3) stages. Stages are further subdivided into major items of work.

D16.1.2 Stage I

- (a) Stage I includes the resurfacing of the southbound median lane of Pembina Highway from Grant Avenue to Harrow Street. Stage I construction works include slab and joint repairs, curb construction and the placement of the bottom lift of asphalt in the southbound median lane from Grant Avenue to Harrow Street.
 - (i) Planing of asphalt overlay where required;
 - (ii) Removal of existing pavement where required;
 - (iii) Excavation and placement of base course materials where required;
 - (iv) Concrete pavement, slab and joint work and adjustments to pavement structures and appurtenances;
 - (v) Renewal of concrete curb;
 - (vi) Regrading median, placing of topsoil and finished grading where required;
 - (vii) Laying of sod;
 - (viii) Placing of the bottom lift of asphalt.
- (b) Placing the topsoil and finished grading of all boulevard and median areas shall be completed prior to commencing construction of the asphaltic concrete overlay, including bottom lift.

D16.1.3 Stage II

- (a) Stage II includes the resurfacing of the southbound intermediate lane of Pembina Highway from Grant Avenue to Harrow Street. Stage II construction works include slab and joint repairs and the placement of the bottom lift of asphalt in the southbound intermediate lane from Grant Avenue to Harrow Street.
 - (i) Planing of asphalt overlay where required;
 - (ii) Removal of existing pavement where required;

- (iii) Excavation and placement of base course materials where required;
- (iv) Concrete pavement, slab and joint work and adjustments to pavement structures and appurtenances;
- (v) Placing of the bottom lift of asphalt.

D16.1.4 Stage III

- (a) Stage III includes the resurfacing of the southbound gutter lane of Pembina Highway from Grant Avenue to Harrow Street. Stage III construction works include slab and joint repairs, curb and sidewalk repairs and the placement of the bottom lift of asphalt in the southbound median lane from Grant Avenue to Harrow Street. Stage III construction also includes the placement of asphalt surface course on all three lanes from Grant Avenue to Harrow Street.
 - (i) Planing of asphalt overlay where required;
 - (ii) Removal of existing pavement where required;
 - (iii) Excavation and placement of base course materials where required;
 - (iv) Concrete pavement, slab and joint work and adjustments to pavement structures and appurtenances;
 - (v) Installation of catchpits;
 - (vi) Renewal of concrete curb and sidewalk;
 - (vii) Regrading boulevards, placing of topsoil and finished grading where required;
 - (viii) Laying of sod;
 - (ix) Placing of the bottom lift of asphalt;
 - (x) Placing of the surface course of asphalt on all three lanes.

D16.1.5 Immediately following the completion of the asphaltic concrete works of Phase I, the Contractor shall clean up the Site and remove all plant, surplus material, waste and debris, other than that left by the City or other Contractors.

D17. SUBSTANTIAL PERFORMANCE

D17.1 The Contractor shall achieve Substantial Performance within forty-five (45) consecutive Working Days of the commencement of the Work as specified in D12.

D17.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.

D17.3 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.

D18. TOTAL PERFORMANCE

D18.1 The Contractor shall achieve Total Performance within fifty (50) consecutive Working Days of the commencement of the Work as specified in D12.

D18.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work

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

D18.3 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.

D19. LIQUIDATED DAMAGES

D19.1 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 Two Thousand dollars (\$2,000) per Working Day for each and every Working Day following the day fixed herein for Substantial Performance during which such failure continues.

D19.2 The amount specified for liquidated damages in D19.1 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.

D19.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D20. SCHEDULED MAINTENANCE

D20.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

- (a) Reflective crack maintenance during one year warranty period as specified as specified in CW 3250-R6.
- (b) Maintenance of sodded areas as specified in CW 3510-R8.
- (c) Maintenance of seeded areas as specified in CW 3520-R6.

D20.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

CONTROL OF WORK

D21. JOB MEETINGS

D21.1 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.

D21.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D22. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D22.1 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).

WARRANTY

D23. WARRANTY

D23.1 Notwithstanding GC:13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter unless extended pursuant to GC:13.2.1 or GC:13.2.2, in which case it shall expire when provided for thereunder.

D23.2 Notwithstanding GC:13.2 [or D23.1,] 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; or

D23.2.1 In such case the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in GC:13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See D9)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____.)

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

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

_____ day of _____, 20____, for:

BID OPPORTUNITY NO. 184-2006

PEMBINA HIGHWAY (SOUTHBOUND) – GRANT AVENUE TO HARROW STREET, STREET
RESURFACING

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 D9)

(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. 184-2006

PEMBINA HIGHWAY (SOUTHBOUND) – GRANT AVENUE TO HARROW STREET, STREET
RESURFACING

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)

FORM J: SUBCONTRACTOR LIST
(See D10)

PEMBINA HIGHWAY (SOUTHBOUND) – GRANT AVENUE TO HARROW STREET, STREET
RESURFACING

<u>Portion of the Work</u>	<u>Name</u>	<u>Address</u>
<i>SURFACE WORKS:</i>		
<i>Supply of Materials:</i>		
<i>Concrete</i>		
<i>Asphalt</i>		
<i>Base Course & Sub-Base</i>		
<i>Sod</i>		
<i>Installation/Placement:</i>		
<i>Planing</i>		
<i>Pavement Removal / Excavation</i>		
<i>Sub-base and Base Course</i>		
<i>Concrete</i>		
<i>Asphalt</i>		
<i>Sod</i>		
<i>UNDERGROUND WORKS:</i>		
<i>Supply of Materials:</i>		
<i>Catchpits</i>		
<i>Pipe</i>		
<i>Frames</i>		
<i>Installation/Placement:</i>		
<i>Pipe</i>		
<i>OTHERS:</i>		
<i>Reflective Crack Maintenance</i>		

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>	<u>Drawing (Original) Sheet Size</u>
P-3265-01	Cover Sheet	A1
P-3265-02	Plan-Profile – Harrow Street to Sta. 2+45	A1
P-3265-03	Plan-Profile – Sta. 2+45 to Sta. 3+95	A1
P-3265-04	Plan-Profile – Sta. 3+95 to Sta. 5+45	A1
P-3265-05	Plan-Profile – Sta. 5+45 to Sta. 6+95	A1
P-3265-06	Plan-Profile – Sta. 6+95 to Sta. 8+45	A1
P-3265-07	Plan-Profile – Sta. 8+45 to Sta. 9+95	A1
P-3265-08	Plan-Profile – Sta. 9+95 to Grant Avenue	A1
P-3265-09	S738 Pembina Highway Northbound South of Harrow Street - Concrete Pile Foundation Detail	A1

E2. GEOTECHNICAL REPORT

- E2.1 Further to GC:3.1, the geotechnical report is provided to aid the Contractor's evaluation of the pavement structure and/or existing soil conditions. The geotechnical report is contained in Appendix 'A'.

E3. OFFICE FACILITIES

- E3.1 The Contractor shall supply office facilities meeting the following requirements:
- The field office shall be for the exclusive use of the Contract Administrator.
 - The building shall be conveniently located near the site of the Work.
 - The building shall have a minimum floor area of 20 square metres, a height of 2.4 m with two windows for cross ventilation and a door entrance with a suitable lock.
 - The building shall be suitable for all weather use. It shall be equipped with an electric heater and air conditioner so that the room temperature can be maintained between either 16-18°C or 24-25°C.
 - The building shall be adequately lighted with fluorescent fixtures and have a minimum of three wall outlets.

- (f) The building shall be furnished with two desks, one drafting table, one table 3 m x 1.2 m, one stool, one four drawer legal size filing cabinet, and a minimum of twelve chairs.
- (g) A portable toilet shall be located near the field office building. The toilet shall have a locking door and be for the exclusive use of the Contract Administrator and other personnel from the City.
- (h) The field office building and the portable toilet shall be cleaned on a weekly basis immediately prior to each site meeting. The Contract Administrator may request additional cleaning when he deems it necessary.

E3.2 The Contractor shall be responsible for all installation and removal costs, all operating costs, and the general maintenance of the office facilities.

E3.3 The office facilities will be provided from the date of the commencement of the Work to the date the Contract is completed.

E4. PROTECTION OF EXISTING TREES

E4.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing boulevard trees within the limits of the construction area:

- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.
- (b) Trees identified to be at risk by the Contract Administrator are to be strapped with 25 x 100 x 2400mm wood planks, or suitably protected as approved by the Contract Administrator.
- (c) Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches), with the outcome read in feet, from the closest edge of the trunk. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.
- (d) Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the work required. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
- (e) Work on-site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.

E4.2 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the City Forester or his designate.

E4.3 No separate measurement or payment will be made for the protection of trees.

E4.4 Elm trees cannot be trimmed between April 1 and July 31, inclusive.

E5. TRAFFIC CONTROL

E5.1 Further to clauses 3.6 and 3.7 of CW 1130-R1:

- (a) Where directed, the Contractor shall construct and maintain temporary asphalt ramps to alleviate vertical pavement obstructions such as manholes and planing drop-offs to the satisfaction of the Contract Administrator. No measurement for payment will be made for this work.

- (b) In accordance with the Manual of Temporary Traffic Control, the Contractor ("Agency" in the manual) shall make arrangements with the Traffic Services Section of the City of Winnipeg to place all temporary regulatory signs. The Contractor shall bear all costs associated with the placement of temporary traffic control devices by the Traffic Services Section of the City of Winnipeg in connection with the works undertaken by the Contractor.

E6. TRAFFIC MANAGEMENT

E6.1 Further to clause 3.7 of CW 1130-R1:

- E6.1.1 During Stage I, the contractor shall maintain traffic in the southbound intermediate and gutter lanes of Pembina Highway between Grant Avenue and Harrow Street. Pembina Highway Southbound from Grant Avenue to Harrow Street shall be signed "No Stopping" at any time.
- E6.1.2 During Stage II, the contractor shall maintain traffic in the southbound median and gutter lanes of Pembina Highway between Grant Avenue and Harrow Street. The Contract Administrator may authorize the closing of the median lane, except between the hours of 7:00 - 9:00 and 15:30 – 17:30, when completing work activity that requires two lanes such as excavating or placing concrete.
- E6.1.3 During Stage III, the contractor shall maintain traffic in the southbound median and intermediate lanes of Pembina Highway between Grant Avenue and Harrow Street.
- E6.1.4 Where left turn lanes exist, work shall be scheduled accordingly to maintain the left turn storage lane.
- E6.1.5 Intersecting street and private approach access shall be maintained at all times.
- E6.1.6 Should the Contractor be unable to maintain pedestrian or vehicular access to a residence or business, he shall review the planned disruption with the business or residence and the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 24 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.
- E6.1.7 Pedestrian and ambulance/emergency vehicle access must be maintained at all times.

E7. WATER USED BY CONTRACTOR

- E7.1 Further to clause 3.7 of CW 1120-R1, the Contractor shall pay for all costs associated with obtaining water in accordance with the Waterworks By-law. Sewer charges will not be assessed for water obtained from a hydrant.

E8. SUPPLY AND INSTALLATION OF PAVEMENT REPAIR FABRIC

DESCRIPTION

- E8.1 General
- E8.1.1 This specification covers the supply and installation of pavement repair fabric.
- E8.1.2 Referenced Standard Construction
- (a) CW 3130 – Supply and Installation of Geotextile Fabrics.

MATERIALS

E8.2 Storage and Handling

E8.2.1 Store and handle material in accordance with Section 2 of CW 3130.

E8.3 Pavement Repair Fabric

E8.3.1 Pavement repair fabric will be Glas Grid Road Reinforcement Mesh - Style 8501 or approved equal.

CONSTRUCTION METHODS

E8.4 General

E8.4.1 Install pavement repair fabric at random locations as directed by the Contract Administrator.

E8.4.2 The extent of the placement limits and quantities required will be determined by the Contract Administrator and provided 48 hours prior to the placement of asphalt.

E8.4.3 Proceed with installation upon completion and acceptance of the asphalt levelling course.

E8.4.4 Install fabric in accordance with the manufacturer's specifications and recommendations.

E8.4.5 Only construction equipment required to place the final asphalt surface course will be allowed to travel on the exposed fabric.

E8.4.6 Replace damaged or improperly placed fabric.

E8.4.7 Ensure temperature of the asphalt material does not exceed the melting point of the fabric.

MEASUREMENT AND PAYMENT

E8.5 Pavement Repair Fabric

E8.5.1 The supply and installation of the pavement repair fabric will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Pavement Repair Fabric". The area to be paid for will be the total number of square metres of pavement repair fabric supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

E9. CONCRETE CURB

E9.1 Further to CW 3240-R5 and CW 3310-R9, slope-faced bullnoses will be constructed on island bullnoses as directed by the Contract Administrator.

E9.2 All costs associated with construction of slope-faced bullnoses at locations of "Construction of Monolithic Concrete Median Slab" are included in "Construction of Monolithic Concrete Median Slab", and no additional payment shall be made.

E10. ADJUSTMENT OF EXISTING TRAFFIC SIGNALS PIT COVERS

DESCRIPTION

E10.1 General

E10.1.1 Further to CW 3210-R6, the Contractor is notified that Traffic Signals will be installing service pits at various locations within the project limits that may require adjustment.

CONSTRUCTION METHODS

E10.2 General

- E10.2.1 Should the covers for the concrete service pits require adjustment, the adjustment will include removal of the frame and cover, trimming the sono-tube inner form to grade, replacing the frame and cover and pouring the remainder of the service pit monolithically with the median or sidewalk.

MEASUREMENT AND PAYMENT

E10.3 Adjustment of Existing Signals Service Pit Covers

- E10.3.1 Adjustment of service pit covers shall be paid for under "Adjustment of Existing Signals Service Pit Covers (Concrete)", 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.

E11. NEW CAST-IN-PLACE CONCRETE PILE FOUNDATIONS

DESCRIPTION

E11.1 General

- E11.1.1 The Work covered under this Item shall include all concreting operations related to construction of cast-in-place concrete pile foundations in accordance with this Specification and as shown on the Drawings.
- E11.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.

MATERIALS

E11.2 General

- E11.2.1 The Contractor shall be responsible for the supply, safe storage, and handling of all materials set forth in this Specification.

E11.3 Handling and Storage of Materials

- E11.3.1 All materials shall be handled and stored in a careful and workmanlike manner, to the satisfaction of the Contract Administrator. Storage of materials shall be in accordance with CSA Standard CAN3-A23.1-00.

E11.4 Testing and Approval

- E11.4.1 All materials supplied under this Specification shall be subject to inspection and testing by the Contract Administrator or by the Testing Laboratory designated by the Contract Administrator. There shall be no charge to the City for any materials taken by the Contract Administrator for testing purposes.
- E11.4.2 All materials shall conform to CSA Standard CAN/CSA-A23.1-00.
- E11.4.3 All testing of materials shall conform to CSA Standard CAN/CSA-23.2-00.

E11.5 Cement

E11.5.1 Cement shall be Type HS, high sulphate-resistant hydraulic cement, conforming to the requirements of CSA A3001-03.

E11.6 Supplementary Cementing Materials

E11.6.1 Use of pozzolans, fly ash, or silica fume will not be permitted for use in structural concrete supplied under this Specification.

E11.7 Water

E11.7.1 Water used for mixing concrete shall be clean and free from injurious amounts of oil, acid, alkali, organic matter, or other deleterious substances. It shall be equal to potable water in physical and chemical properties.

E11.8 Aggregate

E11.8.1 The Contractor shall furnish in writing to the Contract Administrator, the location of the sources where aggregate will be obtained, in order that same may be inspected and tentatively approved by the Contract Administrator. Changes in the source of aggregate supply during the course of the Contract will not be permitted without notification in writing to and the expressed approval of the Contract Administrator.

(a) Fine Aggregate

- (i) Fine aggregate shall consist of sand having clean, hard, strong, durable, uncoated grains; free from injurious amounts of dust, soft or flaking particles, shale, alkali, organic matter, loam, or other deleterious substances.
- (ii) Fine aggregate shall be well-graded throughout and shall conform to the following grading requirements:

Gradation of Fine Aggregates	
Canadian Metric Sieve Size	Percent of Total Dry Weight Passing Each Sieve
10,000	100%
5,000	95% - 100%
2,500	80% - 100%
1,250	50% - 90%
630	25% - 65%
315	10% - 35%
160	2% - 10%
80	0% - 3%

- (iii) The fineness modulus of fine aggregate shall not be less than 2.2 nor more than 3.1 unless otherwise approved by the Contract Administrator.

(b) Coarse Aggregate (20 mm Nominal)

- (i) Standard coarse aggregate shall be used for cast-in-place concrete foundations required in this Specification.
- (ii) Standard coarse aggregate shall consist of natural gravel, crushed stone, or other approved materials of similar characteristics, having clean, hard, strong, durable, uncoated particles, free from injurious amounts of soft, friable, thin, elongated, or laminated pieces, alkali, organic, or other deleterious matter.

Coarse aggregate shall be well graded throughout and shall conform to the grading requirements shown in the following table:

Gradation of 20 mm Coarse Aggregate	
Canadian Metric Sieve Size	Percent of Total Dry Weight Passing Each Sieve
28,000	100%
20,000	90% - 100%
10,000	25% - 60%
5,000	0% - 10%
2,500	0% - 5%
80	0% - 1%

E11.9 Admixtures

E11.9.1 No admixtures other than air-entraining agent shall be used without the written authorization of the Contract Administrator, unless otherwise specified in these Specifications. It shall be the Contractor's responsibility to ensure that any admixture is compatible with all other constituent materials.

E11.10 Concrete Cure and Protection System

E11.10.1 Concrete cure and protection system for top 600 mm of pile shall be Horsey Set WDE (water-dispersed epoxy), made by Watson Bowman Acme, as supplied by G.D. Johnston Ltd., or equal as approved by the Contract Administrator.

E11.11 Reinforcing Steel

E11.11.1 Reinforcing steel shall be deemed to include all reinforcing bars, tie-bars, and dowels.

E11.11.2 All reinforcing steel shall conform to the requirements of CSA Standard G30.12, Grade 400 MPa, Billet-Steel Bars for Concrete Reinforcement. All reinforcing steel shall be new deformed billet steel bars. All bars, including ties, shall be hot-dip galvanized in accordance with CSA Standard G164 for a minimum net retention of 600 g/m². Reinforcing steel supply and installation will be incidental to construction of concrete pile foundation and no separate payment will be made.

E11.12 Anchor Bolts, Nuts, and Washers

E11.12.1 Anchor bolts, nuts, and washers shall be in accordance with CSA Standard G40.21 Grade 300W, and shall be hot-dip galvanized full length in accordance with CSA G164 for a minimum net retention of 600 g/m², for the entire length of the anchor bolts. The threaded portion of the anchor bolts shall extend to the concrete surface. Anchor bolt supply and installation will be incidental to construction of concrete pile foundation and no separate payment will be made.

E11.13 Anchor Bolt Templates

E11.13.1 Anchor bolt templates shall be CSA G40.21 Grade 300W, minimum 10 mm thick, and will be incidental to construction of new concrete pile foundation and no separate payment will be made.

E11.14 Miscellaneous Materials

E11.14.1 Miscellaneous materials shall be of the type specified on the Drawings or approved by the Contract Administrator.

E11.15 Concrete Mix Design

E11.15.1 Proportioning of fine aggregate, coarse aggregate, cement, water, and air entraining agent shall be such as yield concrete having the required strength and workability as follows:

- (a) Minimum Compressive Strength at 28 days = 35 MPa
- (b) Maximum Water/Cement Ratio = 0.45
- (c) Minimum Cement Content = 340 kg/m³
- (d) Slump = 80 mm ± 30 mm
- (e) Aggregate: 20 mm nominal
- (f) Air Content: 5.0 to 8.0 percent
- (g) Cement: Type HS, high sulphate-resistant

E11.16 Equipment

E11.16.1 All equipment shall be of a type approved by the Contract Administrator and shall be kept in good working order.

CONSTRUCTION METHODS

E11.17 Location and Alignment of Piles

E11.17.1 Piles shall be placed in the positions shown on the Drawings and as directed by the Contract Administrator in the field.

E11.17.2 The deviation of the axis of any finished pile shall not differ by more than 1 percent from the vertical.

E11.18 Buried Utilities

E11.18.1 The Contractor shall exercise extreme caution when constructing the pile foundations in the vicinity of existing buried utilities. The Drawings show the approximate locations of existing buried utilities. The Contractor shall be responsible for obtaining the exact location of the buried utilities from the appropriate Utility Authority prior to installing the piles.

E11.18.2 The proposed locations of the pile foundations may be changed by the Contract Administrator if they interfere with the buried utilities.

E11.18.3 The Contractor shall be responsible for all costs that may be incurred for repair/rectification of any damage caused to the existing buried utilities as a result of the Contractor's operations in constructing cast-in-place concrete piles, as determined by the Contract Administrator.

E11.19 Restoration of Adjacent Property

E11.19.1 The restoration of existing concrete sidewalks/medians and curbs, as well as boulevard median, paving stone, or sodding, required as shown on the Drawings, will be incidental to the construction of cast-in-place concrete pile foundations, and no separate payment will be made. Backfill and preparation of subgrade for sidewalk restoration shall conform to CW3325-R6 and CW3310-R10.

E11.19.2 Sidewalk or median concrete paving shall be saw cut a minimum of 300 mm all around from the edge of pile or to the nearest existing joints, and restored flush with adjacent surface level after the new pile has been installed.

E11.20 Excavation

- E11.20.1 Excavations for piles shall be made with equipment designed to remove a core of the diameter shown on the Drawings.
- E11.20.2 Upon reaching the required elevation, the bottom of the bore shall be cleaned and, if called for, belled out to the required dimensions and elevations as shown on the Drawings or as directed by the Contract Administrator in the field.
- E11.20.3 All excavated material from the piles shall be promptly hauled away from the site to an approved disposal area as located by the Contractor.
- E11.20.4 Upon completion of the belling out and cleaning out of the bottom to the satisfaction of the Contract Administrator, the reinforcement and anchor bolts shall be set in place and the concrete poured immediately. Under no circumstances shall a hole be left to stand open after boring has been completed.
- E11.20.5 If any hole is condemned because of caving, it shall be filled with lean-mix concrete and a new hole bored as near as possible to the location shown on the Drawings. Payment will not be made for condemned piles.

E11.21 Sleeving

- E11.21.1 Timber or steel sleeving shall be used to temporarily line the bore to prevent bulging or caving of the walls and to protect men at work in the bore.
- E11.21.2 The sleeving shall be designed by the Contractor and constructed to resist all forces that may tend to distort it.
- E11.21.3 The sleeving shall be withdrawn as the concrete is placed in the bore. The sleeving shall extend at least 1 m below the top of the freshly deposited concrete at all times.
- E11.21.4 The clearance between the face of the bore hole and the sleeving shall not exceed 75 mm.

E11.22 Inspection of Bores

- E11.22.1 Concrete shall not be placed in a bore until the bore has been inspected and approved by the Contract Administrator.
- E11.22.2 The Contractor shall have available suitable light for the inspection of each bore throughout its entire length.
- E11.22.3 All improperly set sleeving, bore, bell, or bottom shall be corrected to the satisfaction of the Contract Administrator.

E11.23 Placing Reinforcing Steel

- E11.23.1 Reinforcement shall be:
- (a) placed in accordance with the details shown on the Drawings
 - (b) rigidly fastened together, and
 - (c) lowered into the bore intact before concrete is placed.
- E11.23.2 Spacers shall be utilized to properly locate the reinforcing steel cage in the bore and to provide the clear concrete cover shown on the Drawings.

E11.24 Placing Anchor Bolts

- E11.24.1 The anchor bolts shall be aligned with a steel template matching the bolt hole configuration in the sign structure base plate. The setting template shall be held in place by the top and

bottom nuts of the anchor bolts. Extreme care shall be used in this operation. Placement of anchor bolts without the steel template will not be permitted.

E11.24.2 The threaded portion of the anchor bolts shall be coated with oil, before the concrete is poured, to minimize the fouling of threads splattered by concrete residue. The portion of anchor bolts projecting from the pile shall be fully threaded.

E11.25 Forms

E11.25.1 The top 1.0 m of the piles shall be formed with tubular forms (Sonotube).

E11.25.2 The forms shall be sufficiently rigid to prevent lateral or vertical distortions from the loading environment to which they shall be subjected. Forms shall be set to the design grades, lines, and dimensions, as shown on the Drawings.

E11.26 Placing Concrete

E11.26.1 Care shall be taken to ensure that anchor bolts are vertically aligned and that anchor bolts and conduits are properly positioned prior to placement of concrete.

E11.26.2 Concrete shall not have a free fall of more than 2.0 m and shall be placed so that the aggregates will not separate or segregate. The slump of the concrete shall not exceed 110 mm. The concrete shall be vibrated throughout the entire length of the pile.

E11.26.3 Concrete shall be placed to the elevations as shown on the Drawings. The top surface of the pile shall be finished smooth and even with a hand float. The top edge of the pile shall be rounded around the perimeter with a radius of 10 mm.

E11.26.4 The shaft and bell shall be free of water prior to placing of concrete. Concrete shall not be placed in or through water unless authorized by the Contract Administrator. In the event that tremie concrete is allowed by the Contract Administrator, the concrete shall be placed as specified herein.

E11.27 Tremie Concrete

E11.27.1 The shaft of the pile shall be pumped clear of water so that the bottom can be cleaned and belled. Pumping shall then be stopped and water shall be allowed to come into the bore until a state of equilibrium is reached. Concrete shall then be placed by means of a tremie pipe. The tremie pipe shall have a suitable gate in the bottom to prevent water from entering the pipe. The bottom of the pipe shall be maintained below the surface of the freshly placed concrete. The pipe shall be capable of being raised or lowered quickly in order to control the flow of concrete.

E11.27.2 Tremie concrete shall only be poured up to the top of the bell or as the Contract Administrator directs. Pumps shall then be lowered into the bore and the excess water pumped out. The laitance that forms on top of the tremie shall then be removed and the remainder of the concrete shall be placed in the dry.

E11.28 Protection of Newly Placed Concrete

E11.28.1 Newly laid concrete threatened with damage by rain, snow, fog, or mist shall be protected with a tarpaulin or other approved means.

E11.29 Curing Concrete

E11.29.1 The top of the freshly finished concrete piles shall be covered and kept moist by means of wet polyester blankets immediately following finishing operations and shall be maintained at above 10°C for at least seven (7) consecutive days thereafter.

- E11.29.2 After the finishing is completed, the surface shall be promptly covered with a minimum of a single layer of clean, damp polyester blanket.
- E11.29.3 Concrete shall be protected from the harmful effects of sunshine, drying winds, surface dripping or running water, vibration, and mechanical shock. Concrete shall be protected from freezing until at least twenty-four hours after the end of the curing period.
- E11.29.4 Changes in temperature of the concrete shall be uniform and gradual and shall not exceed 3° in one hour or 20° in twenty-four hours.
- E11.29.5 Immediately after stripping and patching, formed surfaces shall receive and application of the approved concrete cure and protection system in accordance with the manufacturer's instructions.

E11.30 Form Removal

- E11.30.1 Forms shall not be removed for a period of at least 24 hours after the concrete has been placed. Removal of forms shall be done in a manner to avoid damage to, or spalling of, the concrete.
- E11.30.2 The minimum strength of concrete in place for safe removal of forms shall be 20 MPa.
- E11.30.3 Field-cured test specimens, representative of the in-place concrete being stripped, will be tested to verify the concrete strength.

E11.31 Patching of Formed Surfaces

- E11.31.1 Immediately after forms around top of pile have been removed, but before any repairing or surface finishing is started, the concrete surface shall be inspected by the Contract Administrator. Any repair of surface finishing started before this inspection may be rejected and required to be removed.
- E11.31.2 All formed concrete surfaces shall have bolts, ties, struts, and all other timber or metal parts not specifically required for construction purposes cut back fifty (50) mm from the surface before patching.
- E11.31.3 Minor surface defects caused by honeycomb, air pockets greater than 5 mm in diameter, and voids left by strutting, and tie holes shall be repaired by removing the defective concrete to sound concrete, dampening the area to be patched and then applying patching mortar. A slurry grout consisting of water and cement, shall be well-brushed onto the area to be patched. When the slurry grout begins to lose the water sheen, the patching mortar shall be applied. It shall be struck-off slightly higher than the surface and left for one hour before final finishing to permit initial shrinkage of the patching mortar and it shall be touched up until it is satisfactory to the Contract Administrator. The patch shall be cured as specified in this Specification, and the final colour shall match the surrounding concrete.

E11.32 Cold Weather Concreting

- E11.32.1 Protection of concrete shall be considered incidental to its placement. The temperature of the concrete shall be maintained at or above 10°C for a minimum of three (3) days or till the concrete has reached a minimum compressive strength of 20 MPa, by whatever means are necessary. Concrete damaged as a result of inadequate protection against weather conditions shall be removed and replaced by the Contractor at his own expense. Also, concrete allowed to freeze prior to the three (3) days will not be accepted for payment.

E11.33 Quality Control

- E11.33.1 All workmanship 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

acceptance of the Work. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given. The Contract Administrator reserves the right to reject any materials or Works that are not in accordance with the requirements of this Specification.

- E11.33.2 The Contractor shall be responsible for making a thorough inspection of materials to be supplied under this Contract. All material shall be free of surface imperfections and other defects.

MEASUREMENT AND PAYMENT

- E11.34 Construction of New Cast-in-Place Concrete Pile Foundations

- E11.34.1 Construction of new cast-in-place concrete pile foundations including supply and installation of anchor bolts and steel template will not be measured and will be paid for at the Contract Lump Sum Price per pile per site for the "Items of Work" listed here below for concrete piles constructed in accordance with this Specification and accepted by the Contract Administrator.

Items of Work:

Construction of New Cast-in-Place Concrete Pile Foundations

- (i) S738 - Pembina Hwy. Northbound S. of Harrow St.