



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 218-2008**

**PROVINCE OF MANITOBA/CITY OF WINNIPEG 2008 RESIDENTIAL STREETS  
RENEWAL, PART 1- DOUBLEDAY DRIVE, KINVER AVENUE, NEWTON AVENUE,  
AND CARRUTHERS AVENUE ,  
PART 2 - BURROWS AVENUE AND POWERS STREET**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

- B1.1 PROVINCE OF MANITOBA/CITY OF WINNIPEG 2008 RESIDENTIAL STREETS RENEWAL PART 1 – DOUBLEDAY DRIVE, KINVER AVENUE, NEWTON AVENUE, AND CARRUTHERS AVENUE , PART 2 – BURROWS AVENUE, AND POWERS STREET

### **B2. SUBMISSION DEADLINE**

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, April 23, 2008.
- B2.2 Bids determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.
- B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

### **B3. SITE INVESTIGATION**

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

### **B4. ENQUIRIES**

- B4.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.
- B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.
- B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.
- B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.
- B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

### **B5. ADDENDA**

- B5.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.
- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management 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 website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B5.3 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.

## **B6. SUBSTITUTES**

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

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

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

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

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

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

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

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

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

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

B7.1 The Bid shall consist 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;

B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.

B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.

B7.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.

B7.4.1 Samples or other components of the Bid 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.

B7.4.2 A hard copy of Form B: Prices must be submitted with the Bid. 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.

B7.5 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.

B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, may result in the Bid being determined to be non-responsive.

B7.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B7.8 Bids 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 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.
- 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 should 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 and the Contract, when awarded, shall be both joint and several.

## **B9. PRICES**

- B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B9.1.1 For the convenience of Bidders, and pursuant to B7.4.2 and B15.4.2, 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>.
- B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B9.4 Form B: Prices is organized into Parts: Part 1 of the Work and Part 2 of the Work. Bidders shall provide a total price for each Part and, on the summary sheet, a Total Bid Price consisting of the sum of prices for Part 1 and Part 2.

## **B10. QUALIFICATION**

- B10.1 The Bidder shall:
- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and
  - (b) be financially capable of carrying out the terms of the Contract; and
  - (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

- B10.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) be responsible and not be suspended, debarred or in default of any obligations to the City (a list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>). and
  - (b) have successfully carried out work similar in nature, scope and value to the Work; and
  - (c) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
  - (d) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);
- B10.3 Further to B10.2(d), 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/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
- (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
  - (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.)
- B10.4 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B10.5 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.
- B11.1.2 All signatures on bid securities shall be original, and shall be witnessed or sealed as required.



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 Bids 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 Bids 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 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management 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 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 11 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 11 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 C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

- B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
  - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 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 is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.
- B15.2.1 Any bid with an apparent imbalance between the unit prices in Part 1 and Part 2 may be determined to be non-responsive and rejected by the Award Authority in its sole discretion, acting reasonably.
- 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 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.
- B15.4.2 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.

## **B16. AWARD OF CONTRACT**

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

- B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.
- B16.2.1 Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
  - (b) the prices are materially in excess of the prices received for similar work in the past;
  - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
  - (d) only one Bid is received; or
  - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B16.3 Subject to B16.2, 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.
- B16.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.
- B16.4 As noted in D2 and identified in Form B: Prices, the Work of Part 2 will be contingent upon the Province approving funding for the Work. If sufficient funding for Part 2 Work is not approved by the Province the City shall have the right to eliminate all or any portion of Part 2 Work in accordance with D2.

## **PART C - GENERAL CONDITIONS**

### **C1. GENERAL CONDITIONS**

- C1.1 The *General Conditions for Construction* (Revision 2006 12 15) are applicable to the Work of the Contract.
- C1.1.1 The *General Conditions for Construction* 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>.
- C1.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

## **PART D - SUPPLEMENTAL CONDITIONS**

### **GENERAL**

#### **D1. GENERAL CONDITIONS**

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

#### **D2. SCOPE OF WORK**

D2.1 The Work to be done under the Contract shall consist of two parts:

- (a) Part 1 – City Funded Work
- (b) Part 2 – Provincially Funded Work.

##### **Part 1 – City Funded Work**

D2.2 Part 1 – City Funded Work shall consist of:

- (a) Major Rehabilitation
  - (i) Doublday Drive from Blechner Drive to Pipeline Road
  - (ii) Kinver Avenue From Mid of Cropo Bay East and West leg to Dexter Road
- (b) Pavement Reconstruction
  - (i) Carruthers Avenue from Sinclair Street to Railway Track ( Concrete Pavement)
- (c) Crack and Seating
  - (i) Newton Avenue from Main Street to Ord Street

##### **Part 2 – Provincially Funded Work**

D2.3 Part 2 – Provincially Funded Work shall consist of:

- (a) Major Rehabilitation
  - (i) Burrows Avenue from Benbow Road to Haddon Road
- (b) Crack and Seating
  - (i) Powers Street From Kilbride Avenue to Royal Avenue

D2.4 The City currently has no approved funding in the Capital Budget for Part 2 of the Work, but is anticipating receiving notification about funding from the Province of Manitoba by late May. Part 2 of the Work is contingent upon the Province approving sufficient funding.

D2.4.1 Further to C7.1, if notice of sufficient funding is not received, the City shall have the right to eliminate all or any portion of Part 2, and the Contract Price will be reduced accordingly.

D2.4.2 Further to C7.5, C7.5.1, and C7.6, a reduction in the Contract Price pursuant to D2.4.1 shall not be considered in calculating the aggregate reduction in the Contract Price for purposes of C7.5.

D2.4.3 If all or any portion of Part 2 is eliminated pursuant to D2.4.1, the time periods stipulated in D19 for Substantial Performance of the Work and in D20 for Total Performance of the Work will be reduced proportionally by the Contract Administrator acting reasonably.

D2.5 The major components of the Work are as follows:

- (a) Major Rehabilitation ( Burrows Avenue, Kinver Avenue, and Doubleday Drive)
  - (i) Concrete slab replacement
  - (ii) Full depth patches ( concrete)
  - (iii) Partial depth patches (Asphalt)

- (iv) Concrete curb renewal
- (v) Renewal of existing sidewalk
- (vi) Sodding
- (vii) Adjust drainage manholes and catch basin's frame and cover
- (viii) Asphalt Overlay ( 70mm average thickness for all streets)
- (b) Crack and Seat ( Powers Street and Newton Avenue)
  - (i) Cracking and seating pavement
  - (ii) Pavement Patching
  - (iii) Concrete curb removal and installation
  - (iv) Supply and install moisture barrier/ stress absorption geo-textile fabric
  - (v) Renewal of existing sidewalk
  - (vi) Sodding
  - (vii) Asphalt Overlay ( 90mm average thickness for all streets)
  - (viii) Adjust drainage manholes and catch basin's frame and cover
  - (ix) Supply and Install catch pits
- (c) Pavement Reconstruction ( Carruthers Avenue)
  - (i) Pavement Removal ( Concrete)
  - (ii) Excavation
  - (iii) Supply and place separation /reinforced geotextile fabric
  - (iv) Supply and place sub-base and base course
  - (v) Construction of 150mm reinforced concrete pavement
  - (vi) Concrete curb renewal
  - (vii) Renewal of existing sidewalk
  - (viii) Adjust drainage manholes and catch basin's frame and cover

### **D3. CONTRACT ADMINISTRATOR**

D3.1 The Contract Administrator is Wardrop Engineering Inc., represented by:

W. Joe Funk, P.Eng  
G.M. Transportation Group  
400-386 Broadway  
Winnipeg MB., R3C 4M8

Telephone No. (204) 956-0980  
Facsimile No. (204) 957-5389

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

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

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

The City of Winnipeg  
Corporate Services Department  
Legal Services Division  
Attn: City Solicitor  
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. AUTHORITY TO CARRY ON BUSINESS**

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

### **D8. SAFE WORK PLAN**

- D8.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D8.2 The Safe Work Plan 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>.

## **D9. INSURANCE**

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

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability, broad form property damage cover and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
- (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- (c) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.

D9.2 Deductibles shall be borne by the Contractor.

D9.3 The Contractor shall provide the City Solicitor with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than the date specified in the C4.1 for the return of the executed Contract.

D9.4 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.

## **D10. PERFORMANCE SECURITY**

D10.1 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.

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

D10.2 If the bid security provided in his Bid 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 and in no event later than the date specified in the C4.1 for the return of the executed Contract.



## **D11. SUBCONTRACTOR LIST**

D11.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at 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 C4.1 for the return of the executed Contract.

## **D12. DETAILED WORK SCHEDULE**

D12.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.

D12.2 If, prior to submitting the Detailed Work Schedule, the Contractor does not receive notification pursuant to D13.4 that all or some portion of Part 2 of the Work may be commenced, he shall complete the Detailed Work Schedule for only Part 1 of the Work assuming that, if all of Part 2 is eliminated, the time periods stipulated in D19 for Substantial Performance of the Work and in D20 for Total Performance of the Work will be reduced by Seventeen (17) Working Days

D12.3 If, after submitting the Detailed Work Schedule, the Contractor receives notification that all or any portion of Part 2 of the Work may be commenced, he shall submit a revised Detailed Work Schedule no later than two (2) Business Days from receipt of the notification.

D12.4 The detailed work schedule shall consist of the following:

(a) a Gantt chart for the Work based on the C.P.M. schedule; and

D12.5 Further to D12.4(a), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

## **SCHEDULE OF WORK**

### **D13. COMMENCEMENT**

D13.1 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.

D13.2 The Contractor shall not commence any Work on the Site until:

(a) the Contract Administrator has confirmed receipt and approval of:

(i) evidence of authority to carry on business specified in D7;

(ii) evidence of the workers compensation coverage specified in C6.15;

(iii) the twenty-four (24) hour emergency response phone number specified in D4.2.

(iv) the Safe Work Plan specified in D8;

(v) evidence of the insurance specified in D9;

(vi) the performance security specified in D10;

(vii) the subcontractor list specified in D11;

(viii) the detailed work schedule specified in D12; and

(b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D13.3 The Contractor shall not commence the Work on the Site before May 26, 2008, and shall commence the Work on Site no later than June 9, 2008, as directed by the Contract Administrator and weather permitting.

D13.4 The Contractor shall not commence Part 2 of the Work as described in D2 and identified in Form B: Prices, unless prior to July 15,2008, he has received notification from the Contract Administrator that the City has received notice of sufficient funding from the Province.

D13.5 The City intends to award this Contract by May 14, 2008.

D13.5.1 If the actual date of award is later than the intended date, the dates specified for Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

#### **D14. WORKING DAYS**

D14.1 Further to C1.1(gg);

D14.1.1 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.

D14.1.2 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.

D14.1.3 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.

#### **D15. RESTRICTED WORK HOURS**

D15.1 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.

#### **D16. WORK BY OTHERS**

D16.1 Work by others on or near the Site will include but not necessarily be limited to:

- (a) Manitoba Hydro Gas Division
  - (i) Lower gas services for the proposed pavement reconstruction
- (b) Manitoba Hydro Street Light Division
  - (i) Possible relocation of street light poles for the proposed pavement reconstruction

#### **D17. SEQUENCE OF WORK**

D17.1 Further to C6.1, the sequence of work shall comply with the following:

D17.1.1 Providing that the Work on each street is completed in a similar order to the order that the Work was commenced in, the Contractor will be permitted to have a maximum of three (3) streets under construction at any one time. Completion of a street means that all of the necessary concrete, asphalt including approaches and landscaping Work is completed to the satisfaction of the Contract Administrator.

D17.1.2 Where the Contractor utilizes two (2) or more crews that work independently on the same major component of the Work as identified in D2, the Contract Administrator may approve an increase to the maximum number of streets under construction at any time.

D17.1.3 Placing the topsoil and finished grading of all boulevard and median areas shall be completed prior to commencing construction of asphaltic concrete overlays, including scratch courses.

## **D18. CRITICAL STAGES**

D18.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

- (a) Construction of Doubleday Drive to be Totally Performed by August 31, 2008
- (b) Construction of Kinver Avenue to be Totally Performed by August 31, 2008
- (c) Construction of Burrows Avenue to be Totally Performed by August 31, 2008

D18.2 When the Contractor considers the Work associated with Doubleday Drive, Kinver Avenue and Burrows Avenue to be completed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Completion. 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 Doubleday Drive, Kinver Avenue and Burrows Avenue Work has been accepted by the Contract Administrator as being completed to the requirements of the Contract is the date on which completion of Doubleday Drive, Kinver Avenue and Burrows Avenue has been achieved.

## **D19. SUBSTANTIAL PERFORMANCE**

D19.1 The Contractor shall achieve Substantial Performance within Fifty Five (55) consecutive Working Days of the commencement of the Work as specified in D13.

D19.2 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.

D19.3 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.

## **D20. TOTAL PERFORMANCE**

D20.1 The Contractor shall achieve Total Performance within Sixty Five (65) consecutive Working Days of the commencement of the Work as specified in D13.

D20.2 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.

D20.3 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.

## **D21. LIQUIDATED DAMAGES**

D21.1 If the Contractor fails to achieve critical stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per working day for each and every working day following the days fixed herein for same during which such failure continues:

- (a) Doubleday Drive Totally Performed by August 31, 2008 – One Thousand dollars (\$1000.00);

- (b) Kinver Avenue Totally Performed by August 31, 2008 – One Thousand dollars (\$1000.00);
- (c) Burrows Avenue Totally Performed by August 31, 2008 – One Thousand dollars (\$1000.00);
- (d) Total Performance – Two Thousand Three Hundred dollars (\$2300.00).

D21.2 The amounts specified for liquidated damages in D21.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve critical stages, Substantial Performance or Total Performance by the days fixed herein for same.

D21.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

## **D22. SCHEDULED MAINTENANCE**

D22.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

- (a) Maintenance of sodding areas as specified in CW 3510 Sodding and;;
- (b) Reflective cracking and sealing during warranty period as specified in CW 3250 Joint and Crack Maintenance;

D22.2 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**

### **D23. JOB MEETINGS**

D23.1 Regular weekly job meetings will be held at 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.

D23.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

### **D24. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)**

D24.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

## **WARRANTY**

### **D25. WARRANTY**

D25.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) years thereafter for Doubleday Drive, Kinver Avenue, Newton Avenue, Burrows Avenue, and Powers Street , and two (2) years thereafter for pavement reconstruction works, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

**FORM H1: PERFORMANCE BOND**  
(See D10)

KNOW ALL MEN BY THESE PRESENTS THAT

\_\_\_\_\_ ,  
(hereinafter called the "Principal"), and

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

\_\_\_\_\_ dollars (\$\_\_\_\_\_)

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

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

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, for:

BID OPPORTUNITY NO. 218-2008

PROVINCE OF MANITOBA/CITY OF WINNIPEG 2008 RESIDENTIAL STREETS RENEWAL PART 1 – DOUBLEDAY DRIVE, KINVER AVENUE, NEWTON AVENUE, AND CARRUTHERS AVENUE , PART 2 – BURROWS AVENUE, AND POWERS STREET  
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)



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 D11)

PROVINCE OF MANITOBA/CITY OF WINNIPEG 2008 RESIDENTIAL STREETS RENEWAL PART 1 –  
DOUBLEDAY DRIVE, KINVER AVENUE, NEWTON AVENUE, AND CARRUTHERS AVENUE , PART 2 –  
BURROWS AVENUE, AND POWERS STREET

<u>Portion of the Work</u>	<u>Name</u>	<u>Address</u>
<b>SURFACE WORKS</b>		
<i>Supply of Material</i>		
<i>Concrete</i>		
<i>Crack and Seating</i>		
<i>Base Course &amp; Sub-Base</i>		
<i>Sod</i>		
<i>Installation/Placement:</i>		
<i>Concrete</i>		
<i>Asphalt</i>		
<i>Base</i>		
<b>UNDERGROUND WORKS</b>		
<i>Supply of Materials)</i>		
<i>Catch Basin</i>		
<i>Catch Basin</i>		
<i>Service Pipes</i>		
<i>Installation and Placement</i>		
<i>Catch Basin</i>		
<i>Catch Basin</i>		
<i>Service Pipes</i>		

## PART E - SPECIFICATIONS

### GENERAL

#### E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
	Cover Sheet	
0800070100-DWG-C0001-00	Curruthers Avenue from Sinclair Street to Railway Track	279mmx431mm
0800070100-SKT C0002-00	Doubleday Drive from Blechner Drive to Pipeline Road STA 1+00 TO STA 2+40	279mmx431mm
0800070100-SKT C0003-00	Doubleday Drive from Blechner Drive to Pipeline Road STA 2+40 TO STA 3+80	279mmx431mm
0800070100-SKT C0004-00	Doubleday Drive from Blechner Drive to Pipeline Road STA 3+80 TO STA 4+93.13	279mmx431mm
0800070100-SKT C0005-00	Kinver Avenue from Crop Bay to Dexter Street STA 1+00 TO STA 2+70	279mmx431mm
0800070100-SKT C0006-00	Kinver Avenue from Crop Bay to Dexter Street STA 2+70 TO STA 4+02.43	279mmx431mm
0800070100-SKT C0007-00	Newton Avenue from Main Street to Ord Street STA 1+00 TO STA 2+50	279mmx431mm
0800070100-SKT C0008-00	Newton Avenue from Main Street to Ord Street STA 2+50 TO STA 3+17.25	279mmx431mm
0800070100-SKT C0009-00	Burrows Avenue from Benbow Road to Haddon Road STA 1+00 TO STA 2+70	279mmx431mm
0800070100-SKT C00010-00	Burrows Avenue from Benbow Road to Haddon Road STA 2+70 TO STA 4+38.93	279mmx431mm
0800070100-SKT C00011-00	Powers Street from Kilbride Avenue to Royal Avenue STA 1+00 TO STA 2+55	279mmx431mm
0800070100-SKT C00012-00	Powers Street from Kilbride Avenue to Royal Avenue STA 2+55 TO STA 4+18.63	279mmx431mm

#### E2. GEOTECHNICAL REPORT

- E2.1 Further to C3.1, 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:
- (a) The field office shall be for the exclusive use of the Contract Administrator.
  - (b) The building shall be conveniently located near the site of the Work.
  - (c) The building shall have a minimum floor area of 25 square metres, a height of 2.4m with a window and a door entrance with a suitable lock.
  - .
  - (d) 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.
  - (e) The building shall be adequately lighted .
  - (f) The building shall be furnished with .
  - (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 of Substantial Performance.
- E3.4 On a one time basis, where directed by the Contract Administrator, the Contractor shall relocate the office facilities to a location more convenient for the remaining Work.

### **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 shall not be pruned at any time between April 1 and July 31.

## **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 The Contractor shall schedule construction activities to meet the following:

- (a) Kinver Avenue from Cropo Bay to Dexter Road, Burrows Avenue from Benbow Road to Haddon Road, at least one lane for local access and /or bus traffic shall be maintained along this street during construction. All intersection on adjacent bays shall be open at all time.
- (b) Doubleday Drive from Blechner Drive to Pipeline Road, Newton Avenue from Main Street to Ord Street, and Powers Street from Kilbride Avenue to Royal Avenue will be closed to through traffic. Local access and/or bus traffic shall be maintained. Newton Avenue from Main Street to Ord Street and Power Street from Kilbride Avenue to Royal Avenue to be closed during the placement of moisture barrier/stress absorption geotextile fabric, and asphalt pavement. The Contractor shall sign the street "Road Closed Local Access Only" in accordance with the Manual of Temporary Traffic Control.
- (c) Carruthers Avenue from Sinclair Road to Railway Track will be closed to all traffic. The Contractor shall sign the street "Road Closed " in accordance with the Manual of Temporary Traffic Control.
- (d) All Streets, under this Residential Streets Package, except Carruthers Avenue intersecting street and private approach access shall be maintained at all times.

E6.1.2 Should the Contractor be unable to maintain an existing 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.

E6.1.3 Pedestrian and ambulance/emergency vehicle access must be maintained at all times.

## **E7. REFUSE AND RECYCLING COLLECTION**

E7.1 While access to refuse and/or recycling collection vehicles is restricted, on collection day(s) the Contractor shall move all of the affected property owners refuse and/or recycling materials to a nearby common area, prior to an established time, in accordance with E7.2 to permit the normal collection vehicles to collect the materials. Immediately following recycling collection the Contractor shall return recycling receptacles to the addresses marked on the receptacles.

E7.2 Collection Schedule:

Carruthers Avenue from Sinclair Road to Railway Track .

*Collection Day(s):* 1  
*Collection Time:* **7.00am**  
*Common Collection Area:* **Southeast Corner of Sinclair Street and Carruthers Avenue**

Newton Avenue from Main Street to Ord Street.

*Collection Day(s):* 1  
*Collection Time:* **7.00am**  
*Common Collection Area:* **Northeast Corner of Newton Avenue and Ord Street**

- E7.3 Contractor must keep the back lanes accessible at Power Street on day one for recycle and refuse collection
- E7.4 Contractor shall temporarily move two autobins , currently placed on south side to Carruthers Avneue to the front street of Lansdowne Avenue during construction, which shall be returned to it's original location after the completion of construction at Carruther Avenue from Sinclair Street to Railway Track
- E7.5 No measurement or payment will be made for the work associated with this specification.

**E8. PEDESTRIAN SAFETY**

- E8.1 During the project, as required and directed by Contract Administrator, a temporary snow fence shall be installed around any shaft or similar conditions that present a danger to the public. 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.

**E9. WATER USED BY CONTRACTOR**

- E9.1 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.

**E10. INFRASTRUCTURE SIGNS**

- E10.1 The Contractor shall obtain infrastructure signs from the Traffic Services Sign Shop at 421 Osborne Street. The Contractor shall mount each sign securely to a rigid backing material approved by the Contract Administrator. The Contractor shall fasten each sign to a suitable support and erect and maintain one sign at each street as directed by the Contract Administrator. When the Contract Administrator considers the Work on the street complete, the Contractor shall remove and dispose of the signs and supports. No measurement for payment will be made for performing all operations herein described and all other items incidental to the work described

## **E11. CRACK AND SEATING OF EXISTING CONCRETE PAVEMENT**

### DESCRIPTION

#### E11.1 General

E11.1.1 This specification covers the crack and seating of existing concrete pavements.

#### E11.2 Definitions

E11.2.1 Proof Rolling – applying of a dynamic load to a concrete pavement with the intent of cracking and embedding the cracked concrete into the existing base.

#### E11.3 Referenced Standard Construction Specifications

- (a) CW 3110 – Sub-Grade, Sub-Base and Base Course Construction.
- (b) CW 3310 – Portland Cement Concrete Pavement Works

### CONSTRUCTION METHODS

#### E11.4 Crack and Seating

E11.4.1 Prior to crack and seating, the contractor shall plain off existing barrier curbs with milling machine.

E11.4.2 The equipment for the crack and seating will be a roller having a single axle, unless approved otherwise by the Contract Administrator.

E11.4.3 The single axle roller will have a maximum of four (4) pneumatic tire wheels and the wheels will be evenly spaced in one line across the width of the roller so that each wheel will carry an approximate equal load when operated over an uneven surface. The centre-to-centre spacing between adjacent wheels will not exceed 800 millimetres. The roller equipment will have a suitable body for ballast loading with a minimum capacity of 40 tonnes and the ability to add additional ballast to a maximum capacity of 60 tonnes.

E11.4.4 Complete initial proof rolling of the concrete pavement with the equipment specified in accordance with clauses E11.4.1 & E11.4.3 of this specification.

E11.4.5 Complete passes as necessary to ensure that the equipment has contacted the entire pavement surface.

E11.4.6 Undertake second proof rolling as directed by the Contract Administrator.

E11.4.7 Loading requirements for each proof rolling will be identified by the Contract Administrator.

E11.4.8 Alter methods to avoid areas of instability. One rolling cycle will consist of two complete proof rolling applications to the pavement surface.

E11.4.9 Complete partial depth saw-cuts at 2/3 the depth of the existing concrete pavement at locations as directed by the Contract Administrator.

E11.4.10 Complete additional rolling cycles and partial depth saw-cuts until the existing concrete pavement has been cracked to a minimum of 300 millimetres to a maximum of 600 millimetres pieces and the pavement has been seated 10 millimetres to 20 millimetres into the sub-base, as directed by the Contract Administrator.

### MEASUREMENT AND PAYMENT

#### E11.5 Crack and Seating

E11.5.1 Crack and seating of existing concrete pavement will be measured on an area basis and paid for at the Contract Unit Price per square metre for “Crack and Seating Pavement”. The area to be paid for will be the total number of square metres of existing concrete pavement cracked and seated in accordance with this specification, accepted and measured by the Contract Administrator.

- E11.5.2 Additional rolling cycles will be measured and paid in accordance with this specification.
- E11.5.3 Saw-cutting of the existing concrete pavement along the center line will be included in the payment for "Crack and Sealing Pavement".
- E11.5.4 Partial Depth Saw-Cutting
- E11.5.5 Partial depth saw-cutting will be measured on a length basis and paid for at the Contract Unit Price per metre for "Partial Depth Saw-Cutting". The length to be paid for will be the total number of metres of existing concrete pavement saw-cut in accordance with this specification, accepted and measured by the Contract Administrator.

## **E12. SUPPLY AND INSTALLATION OF MOISTURE BARRIER/STRESS ABSORPTION GEOTEXTILE FABRIC**

### DESCRIPTION

- E12.1 General
- E12.1.1 This specification covers the supply and installation of Moisture Barrier/Stress Absorption Geotextile.
- E12.1.2 Referenced Standard Construction Specifications
- (a) CW 3130 – Supply and Installation of Geotextile Fabrics.
  - (b) CW 3410 – Asphaltic Concrete Pavement Works.

### MATERIALS

- E12.2 Mill Certificate and Bill of Lading
- E12.2.1 Provide mill certificate and bill of lading in accordance with Section 2 of CW 3130.
- E12.3 Storage and Handling
- E12.3.1 Store and handle material in accordance with Section 2 of CW 3130.
- E12.4 Moisture Barrier/Stress Absorption Geotextile Fabric
- E12.4.1 Geotextile fabric will be non-woven.
- E12.4.2 All physical property requirements are minimum average roll values determined in accordance with ASTM 4759. The moisture barrier/stress absorption geotextile fabric will meet or exceed the standards as follows:

<b>PROPERTY</b>	<b>STANDARD</b>	<b>TEST METHOD</b>
Grab Tensile Strength	0.40 kN	ASTM D4632
Grab Elongation	50%	ASTM D4632
Mullen Burst	1240 kPa	ASTM D3786

- E12.4.3 Acceptable products will be Amoco-Petromat 4599, MIRAFI MIRAPAVE 400, NILEX-9W99 or an approved equal.
- E12.5 Tack Coat
- E12.5.1 Tack coat will be 150 – 200 asphalt cement supplied in accordance with Clause 5.4.2 of CW 3410.

## CONSTRUCTION METHODS

### E12.6 General

- E12.6.1 Install moisture barrier/stress absorption geotextile fabric at the locations as shown on the Drawings or as directed by the Contract Administrator.
- E12.6.2 Proceed with installation upon completion and acceptance of the asphalt levelling course.
- E12.6.3 Ensure pavement surface is clean and free of all dirt, water, oil or foreign materials.
- E12.6.4 Apply tack coat with a distribution truck in accordance with manufacturer's specifications and recommendations. Ensure uniform coverage of entire pavement surface.
- E12.6.5 Install geotextile fabric in accordance with the manufacturer's specifications and recommendations.
- E12.6.6 Only construction equipment required to place the final asphalt surface course will be allowed to travel on the exposed geotextile fabric.
- E12.6.7 Replace damaged or improperly placed geotextile fabric.
- E12.6.8 All fabric installed must be covered with asphalt the same day.
- E12.6.9 Commence placement of asphalt material after the fabric has been placed over the full width of the pavement surface and accepted by the Contract Administrator.
- E12.6.10 Ensure temperature of asphalt material does not exceed the melting point of the fabric.

## MEASUREMENT AND PAYMENT

### E12.7 Moisture Barrier/Stress Absorption Geotextile Fabric

- E12.7.1 Supply and installation of Moisture Barrier/Stress Absorption Geotextile Fabric will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Moisture Barrier/Stress Absorption Geotextile Fabric". The area to be paid for will be the total number of square metres of geotextile fabric supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.
- E12.7.2 The supply and application of the tack coat will be included in the payment for "Moisture Barrier/Stress Absorption Geotextile Fabric".

## E13. PATCHING OF EXISTING PAVEMENT

### DESCRIPTION

#### E13.1 General

- E13.1.1 This specification covers patching of existing concrete pavement in preparation for an asphalt overlay.
- E13.1.2 Referenced Standard Construction Specifications
  - (a) CW 3110 – Sub-Grade, Sub-Base and Base Course Construction.
  - (b) CW 3130 – Supply and Installation of Geotextile Fabrics.
  - (c) CW 3410 – Asphaltic Concrete Pavement Works.

### MATERIALS

#### E13.2 Crushed Sub-Base Material

- E13.2.1 Crushed Sub-base material will have a maximum aggregate size of 50 millimetre and be supplied in accordance with Section 2.1 of CW 3110.



**E13.3 Geotextile Fabric**

E13.3.1 Geotextile fabric will be supplied in accordance with Section 2 of CW 3130.

**E13.4 Asphalt Material**

E13.4.1 Asphalt material will be Type 1A and will be supplied in accordance with Sections 5 and 6 of CW 3410.

**CONSTRUCTION METHODS**

**E13.5 General**

E13.5.1 Remove existing concrete pavement to a minimum width of 1.5 metres at locations as shown on the Drawings or as directed by the Contract Administrator in accordance with Section 3.1 of Specification CW 3110.

E13.5.2 Excavate to a depth of 350 millimetres below the top of the existing pavement.

E13.5.3 Compact existing sub-grade to a minimum of 95% Standard Proctor Density.

E13.5.4 Place separation/reinforcement geotextile fabric in accordance with Specification CW 3130.

E13.5.5 Place and compact crushed sub-base material in accordance with CW 3110 to a 300 millimetres compacted depth. Compact to a minimum of 100% Standard Proctor Density.

E13.5.6 Place and compact asphalt material to a 50 millimetres compacted depth matching the top of the existing concrete pavement. Compact to an average of 95% percent of the 75 Blow Marshall Density of the paving mixture with no individual test being less than 90% percent.

E13.5.7 Each layer must be levelled and accepted by the Contract Administrator before the succeeding layer may be placed.

E13.5.8 Additional excavation and placement of sub-base material beyond the identified pavement structure will be completed in accordance with CW 3110 as directed by the Contract Administrator.

**MEASUREMENT AND PAYMENT**

**E13.6 Pavement Patching**

E13.6.1 Pavement patching will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Pavement Patching". The area to be paid for will be the total number of square metres of pavement patched in accordance with this specification, accepted and measured by the Contract Administrator.

**E14. RECYCLED CONCRETE BASE COURSE MATERIAL**

**DESCRIPTION**

**E14.1 General**

E14.1.1 Further to CW 3110, this specification covers supply and placement of recycled concrete base course material for Full-Depth Partial Slab Patches (Class A, B, C, & D), miscellaneous concrete slabs and sidewalks.

**E14.2 Definitions**

E14.2.1 Deleterious material – are materials such as vegetation, organic material, wood, glass, plastic, metal, reinforcing steel, building rubble, brick, salvaged asphalt materials, clay, shale, and friable particles.

**E14.3 Referenced Standard Construction Specifications**

(a) CW 3110 – Sub-Grade. Sub-Base and Base Course Construction.

- (b) CW 3230 – Full-Depth Patching of Existing Pavement Slabs and Joints.
- (c) CW 3235 – Renewal of Existing Miscellaneous Concrete Slabs.
- (d) CW 3325 – Portland Cement Concrete Sidewalk.

**MATERIALS**

**E14.4 Recycled Concrete Base Course Material**

- E14.4.1 Recycled concrete base course material when used for Full-Depth Partial Slab Patches (Class A, B, C, & D), miscellaneous concrete slabs and sidewalks will be considered equal to granular or limestone base course material specified in Section 2.2 of CW 3110.
- E14.4.2 Recycled concrete base course material will be approved by the Contract Administrator.
- E14.4.3 Recycled concrete base course material will consist of sound durable particles produced by crushing, screening, and grading of recovered concrete materials, free from soft material that would disintegrate through decay or weathering.
- E14.4.4 The recycled concrete base course material will be well graded and conform to the following grading requirements:

**Recycled Concrete Base Course Material Grading Requirements**

CANADIAN METRIC SIEVE SIZE	PERCENT OF TOTAL DRY WEIGHT PASSING EACH SIEVE
20 000	100%
5 000	40% - 70%
2 500	25% - 60%
315	8% - 25%
80	6% - 17%

- E14.4.5 Recycled concrete base course material when subjected to the abrasion test will have a loss of not more than 35% when tested in accordance with grading B of ASTM C131, Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- E14.4.6 The amount of deleterious material will be limited to a maximum of two percent of the total dry weight.

**CONSTRUCTION METHODS**

**E14.5 Placement of Recycled Concrete Base Course Material**

- E14.5.1 Place and compact recycled concrete base course material as a levelling course to a maximum thickness of 50 millimetres.
- E14.5.2 Spread materials uniformly to avoid segregation free of pockets of fine and coarse material.
- E14.5.3 Level and compact to the finished elevation. Compact to 100% Standard Proctor Density for Full-Depth Partial Slab Patches (Class A, B, C, & D) and 90% Standard Proctor Density for miscellaneous concrete slabs and sidewalks.
- E14.5.4 Maintain the finished material until the pavement or sidewalk is placed.

**MEASUREMENT AND PAYMENT**

**E14.6 Recycled Concrete Base Course Material**

- E14.6.1 The supplying, placing and compaction of recycled concrete base course material will be measured on a volume basis and paid for at the Contract Unit Price per cubic metre for the "Supplying and Placing Base Course Material" as specified in accordance with CW 3110.

- E14.6.2 No measurement or payment will be made for material placed as a levelling course under miscellaneous concrete slabs and sidewalks where the costs are included in accordance with CW 3235 and CW 3325.
- E14.6.3 No measurement or payment will be made for materials rejected by the Contract Administrator.

## **E15. PARTIAL DEPTH PATCHING OF EXISTING JOINTS**

### DESCRIPTION

- E15.1 General
- E15.1.1 This specification covers the Partial Depth Patching of existing concrete pavement joints.
- E15.2 Referenced Standard Construction Specifications
- (a) CW 3230 – Full-Depth Patching of Existing Slabs and Joints
  - (b) CW 3410 – Asphalt Concrete Pavement Works
  - (c) CW 3450 – Planing of Pavement

### MATERIALS

- E15.3 Asphalt Materials
- E15.3.1 Asphalt material will be Type 1A supplied in accordance with Sections 5 and 6 of CW 3410.
- E15.4 Tack Coat
- E15.4.1 Tack Coat will be undiluted SS-1 emulsified asphalt or approval equal.

### CONSTRUCTION METHODS

- E15.5 Planing of Joints
- E15.5.1 Plane existing joints designated by the Contract Administrator to a minimum depth of 50 mm and a maximum of depth 90 mm to remove ravelled or deteriorated concrete. Width of joint to be planed will vary with depth.
- E15.5.2 Should the depth of joint deterioration exceed the maximum indicated, as determined by the Contract Administrator, the entire joint shall be renewed and paid for in accordance with CW 3230 as a full depth joint repair. Planing completed shall be paid for in accordance with Section 15.7 of this specification
- E15.5.3 Dispose of material in accordance with Section 3.4 of CW 1130.
- E15.6 Placement of Asphalt Material
- E15.6.1 Prior to placement of asphalt material, the planed joint shall be swept or blow clean of any loose material.
- E15.6.2 Apply Tack Coat uniformly on the entire surface of the planed joint. The application rate shall not exceed 0.23 litres per square metre. The planed joint shall be dry prior to applying the tack coat.
- E15.6.3 Place and compact asphalt material in accordance with Section 9.3 of CW 3410 to the satisfaction of the Contract Administrator. The finished elevation of the patch shall be flush with surrounding pavement surface.
- E15.6.4 Compact the asphalt material to an average 95% of the 75 blow Marshall Density of the paving mixture with no individual test being less than 90 %.

- E15.6.5 Ensure that no traffic is allowed to travel over the patched area until the asphalt has cooled to atmospheric temperature.

#### MEASUREMENT AND PAYMENT

#### E15.7 Partial Depth Planing of Existing Joints

- E15.7.1 Partial Depth Planing of Existing Joints will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Partial Depth Planing of Existing Joints". The area to be paid for will be the total number of square metres of joints planed in accordance with this specification, accepted and measured by the Contract Administrator.

#### E15.8 Asphalt Patching of Partial Depth Joints

- E15.8.1 Asphalt Patching of Partial Depth Joints will be measured on a weight basis and paid for at the Contract Unit Price per tonne for "Asphalt Patching of Partial Depth Joints". The weight to be paid for will be the total number of tonnes of asphalt supplied and placed in accordance with this specification and accepted by the Contract Administrator, as measured on a certified weigh scale.

# **APPENDIX 'A'**

# **GEOTECHNICAL REPORT**

## **APPENDIX 'A' - GEOTECHNICAL REPORT**

### **TABLE OF CONTENTS**

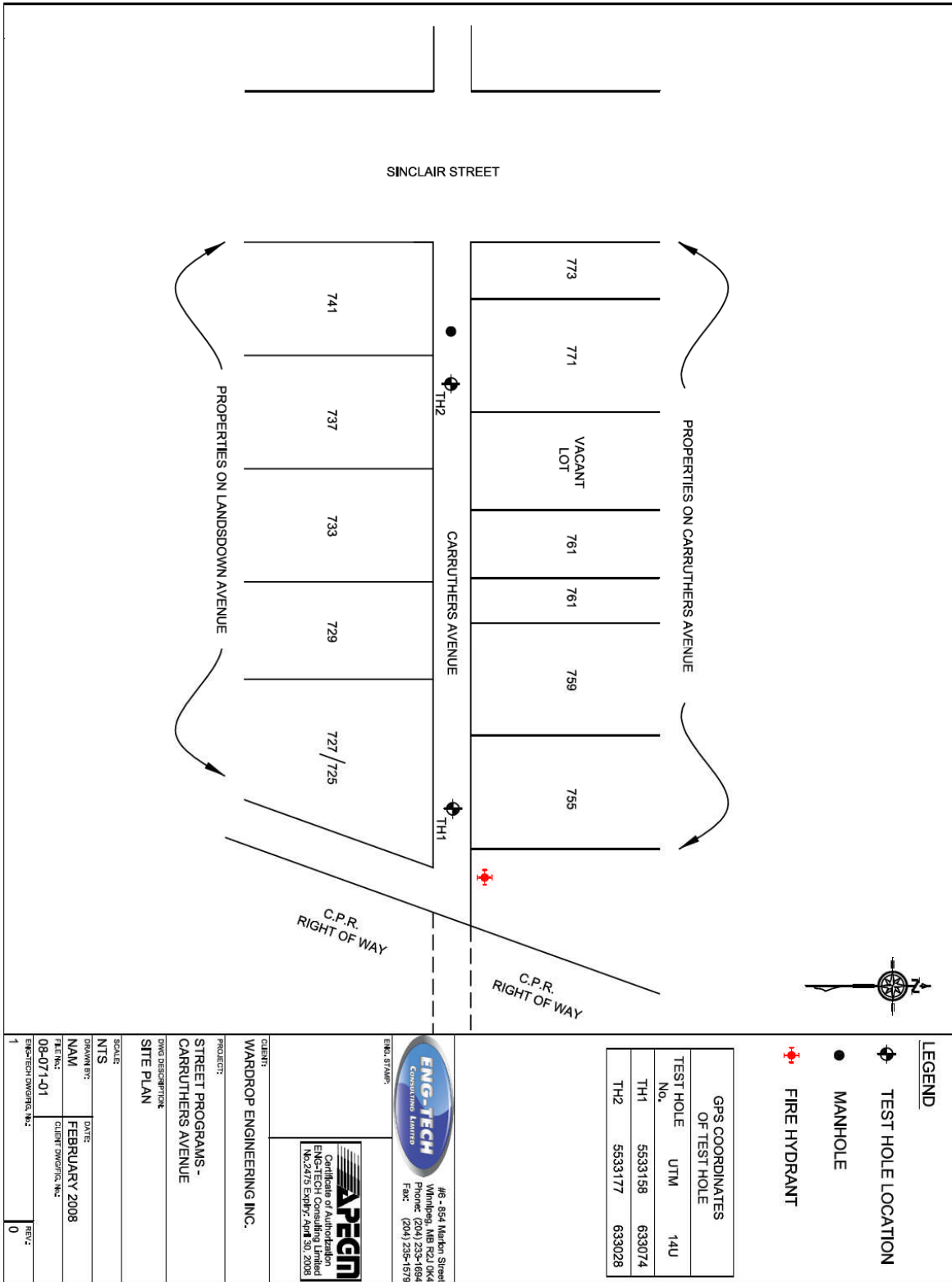
#### **GEOTECHNICAL REPORT FOR CARRUTHERS AVENUE**

Table of Content	
Test Hole Locations	1
Summary of Core Samples	2
Test Hole Log for TH1	3
Test Hole Log for TH2	4
Particle Size Analysis for TH1	5
Particle Size Analysis for TH2	6
Pavement Core Photos	7

The geotechnical report is provided to aid in the Contractor's evaluation of the existing pavement structure and/or soil conditions. The information presented is considered accurate at the locations shown on the Drawings and at the time of drilling. However, variations in pavement structure and/or soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities. The nature and extent of variations may not become evident until construction commences.

# GEOTECHNICAL REPORT FOR CARRUTHERS AVENUE

## Test Hole Locations



**Summary of Core Samples**

**Table 1  
 Summary of Pavement Structure**


**City of Winnipeg  
 2008 Residential Street Renewal Program**

Test Hole No.	Testhole Location	Pavement Surface		Pavement Structure Material		Subgrade Description	Sample Depth (m)	Moisture Content (%)	Hydrometer Analysis				Atterberg Limits			
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index	
1	Carruthers Avenue	Concrete	150	-	-	Clay	0.3	37.7	-	-	-	-	-	-	-	
							0.6	36.6	0.0	7.6	20.0	72.4	73	32	41	
							0.9	22.1	-	-	-	-	-	-	-	
							1.1	32.5	-	-	-	-	-	-	-	
							Silt	1.2	24.8	-	-	-	-	-	-	-
								1.5	23.3	-	-	-	-	-	-	-
								1.8	30.3	-	-	-	-	-	-	-
Clay	2.0	28.8	-	-	-	-	-	-	-	-						
2	Carruthers Avenue	Concrete	175	-	-	Clay	0.3	32.3	-	-	-	-	-	-	-	
							0.6	33.2	-	-	-	-	-	-	-	
							0.9	30.9	-	-	-	-	-	-	-	
						Silt	1.2	25.0	0.0	0.5	74.1	25.4	26	14	12	
							1.5	21.2	-	-	-	-	-	-	-	
							1.8	21.9	-	-	-	-	-	-	-	
						Clay	2.0	37.9	-	-	-	-	-	-	-	





Notes:




**Test Hole Log for TH1**








 <b>Engineering And Testing</b> <i>Solutions That Work For You</i>	<b>Test Hole #:</b> TH1	<b>File No.:</b> 08-071-01
	<b>Client:</b> Wardrop Engineering Ltd.	<b>Date Drilled:</b> February 20, 2008
	<b>Site:</b> Carrthers Avenue, Winnipeg, MB	<b>Grade Elevation:</b> 100 m
	<b>Location:</b> See Figure 1	<b>Water Elevation:</b> --
<b>Project:</b> City of Winnipeg 2008 Residential Streets Program		





SUBSURFACE PROFILE			SAMPLE DATA				GRAIN SIZE DISTRIBUTION %					
Depth (m)	Soil Symbol	Description	Elevation (m)	Sample No.	Sample Type	Recovery (%)	Blows/300 mm	Water Content (%)				
								PL	X	LL		
								GRAVEL	SAND	SILT	CLAY	
0		Ground Surface Concrete (150 mm)	100									
		Clay - black to dark brown, frozen, trace silt, high plastic. - at 0.5 m, dark brown.		S1	Shelby Tube							
				S2	Shelby Tube							
				S3	Shelby Tube							
1			99	S4	Shelby Tube							
				S5	Shelby Tube							
		Silt - tan, soft, low plastic. - frozen to 1.7 m. - below 1.7 m, some clay, wet.		S6	Shelby Tube							
				S7	Shelby Tube							
2		Clay - light brown, firm, some silt, high plastic.	98	S8	Shelby Tube							
		End of Test Hole - end of test hole at 2.1 m below grade. - frozen to 1.7 m below grade. - no groundwater seepage or sloughing encountered. - test hole was backfilled with auger cuttings and topped with cold mix asphalt.										
3			97									

ENG-TECH Consulting Limited	Drilled By: Paddock Drilling Ltd.	Completion Depth: 2.1 m
Logged by: RG	Drill Rig: Brat 22	Completion Elevation: 97.9 m
Reviewed by:	Auger Size: 125 mm	Sheet: 1 of 1
<b>Sample Type</b>	 Split Barrel  Shelby Tube  Auger Cuttings  Split Spoon	

**Test Hole Log for TH2**

 <b>Engineering And Testing</b> <i>Solutions That Work For You</i>	<b>Test Hole #: TH2</b> <b>Client:</b> Wardrop Engineering Ltd. <b>Site:</b> Carrthers Avenue, Winnipeg, MB <b>Location:</b> See Figure 1 <b>Project:</b> City of Winnipeg 2008 Residential Streets Program	<b>File No.:</b> 08-071-01 <b>Date Drilled:</b> February 20, 2008 <b>Grade Elevation:</b> 100 m <b>Water Elevation:</b> --
---	---	---

SUBSURFACE PROFILE			SAMPLE DATA				GRAIN SIZE DISTRIBUTION %						
Depth (m)	Soil Symbol	Description	Elevation (m)	Sample No.	Sample Type	Recovery (%)	Blows/300 mm	Water Content (%)					
								PL	X	LL			
								GRAVEL	SAND	SILT	CLAY		
0		Ground Surface	100										
		Concrete (175 mm)											
		Clay		S1									
		- black to dark brown, frozen, trace silt, high plastic.		S2									
		- at 0.3 m, dark brown.		S3									
		- at 0.9 m, medium brown.		S4									
1		Silt	99	S5						0	0.5	74.1	25.4
		- tan, low plastic.		S6									
		- frozen.		S7									
2		Clay	98										
		- medium brown, stiff, some silt, high plastic.											
		End of Test Hole											
		- end of test hole at 2.0 m below grade.											
		- frozen to 1.9 m below grade.											
		- no groundwater seepage or sloughing encountered.											
		- test hole was backfilled with auger cuttings and topped with cold mix asphalt.											
3			97										

ENG-TECH Consulting Limited Logged by: <b>RG</b> Reviewed by:	Drilled By: <b>Paddock Drilling Ltd.</b> Drill Rig: <b>Brat 22</b> Auger Size: <b>125 mm</b>	Completion Depth: <b>2.0 m</b> Completion Elevation: <b>98.0 m</b> Sheet: <b>1 of 1</b>
<b>Sample Type</b>  Split Barrel  Shelby Tube  Auger Cuttings  Split Spoon		

**Particle Size Analysis for TH 1**



#6 - 854 Marion Street  
 Winnipeg, Manitoba  
 R2J 0K4  
 eng\_tech@mts.net  
 www.eng-tech.ca

**PARTICLE SIZE  
 ANALYSIS REPORT**

Wardrop Engineering Inc.  
 400-386 Broadway  
 Winnipeg, Manitoba  
 R3C 4M8

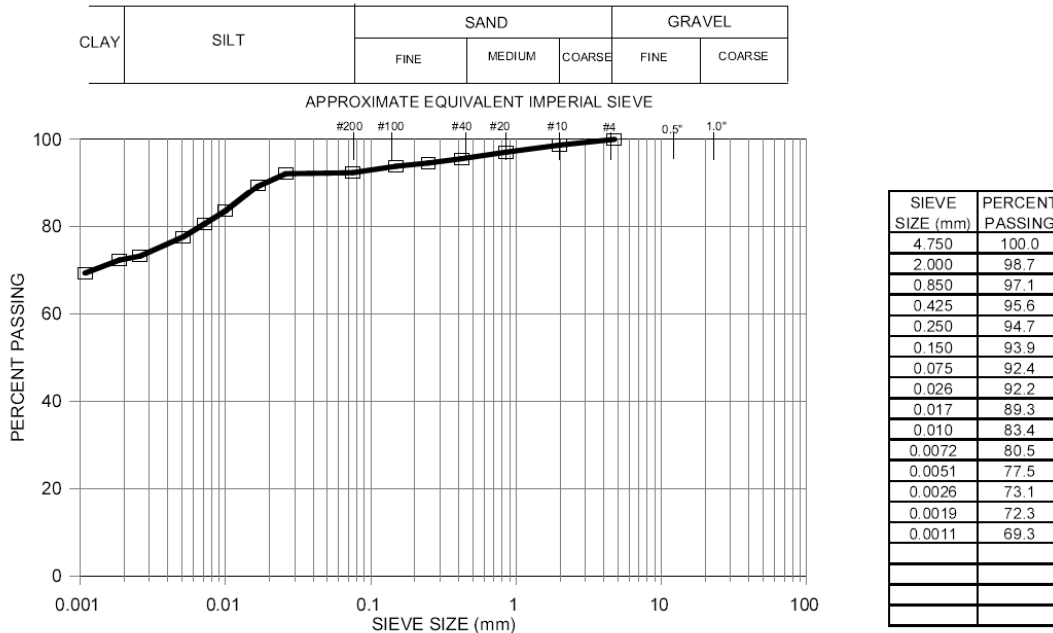
**File No.:** 08-071-01  
**Reference No.:** 8-71-1-1

Fax: 957-5389

**ATTENTION:** Naveed Haider, B.S.C.E.

**PROJECT:** CITY OF WINNIPEG 2008 RESIDENTIAL STREETS RENEWAL PROGRAM - Carruthers Avenue

**Test Hole No.** TH1      **Sample No.** S2      **Depth:** 0.6 m  
**Sampled By:** ENG-TECH      **Type of Sample:** Grab      **Source:** See Figure 1  
**Date Sampled:** February 20/08      **Date Received:** February 20/08      **Date Tested:** February 25/08



**Percent of:** GRAVEL (0.0%), SAND (7.6%), SILT (20.0%) and CLAY (72.4%)  
**Sample Description:**

**ENG-TECH Consulting Limited**

**COMMENTS:**

per \_\_\_\_\_  
 Contact: Clark Hryhoruk, M. Sc., P. Eng., President  
 Ph: (204) 233-1694 Fax: (204) 235-1579

**Particle Size Analysis for TH 2**



#6 - 854 Marion Street  
 Winnipeg, Manitoba  
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**PARTICLE SIZE  
 ANALYSIS REPORT**

Wardrop Engineering Inc.  
 400-386 Broadway  
 Winnipeg, Manitoba  
 R3C 4M8

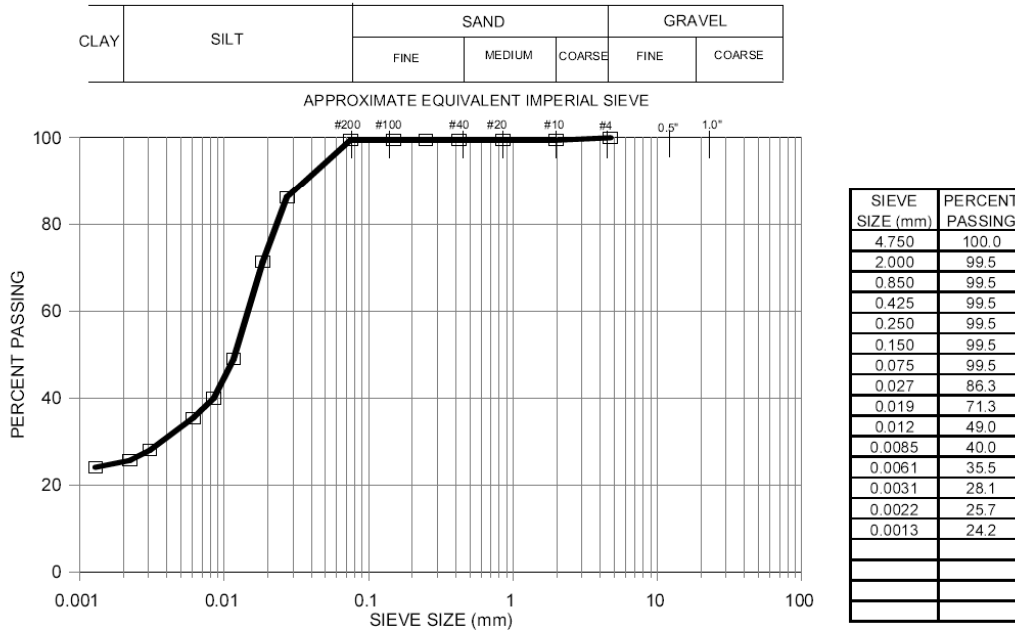
**File No.:** 08-071-01  
**Reference No.:** 8-71-1-2

Fax: 957-5389

**ATTENTION:** Naveed Haider, B.S.C.E.

**PROJECT:** CITY OF WINNIPEG 2008 RESIDENTIAL STREETS RENEWAL PROGRAM - Carruthers Avenue

**Test Hole No.:** TH2      **Sample No.:** S4      **Depth:** 1.2 m  
**Sampled By:** ENG-TECH      **Type of Sample:** Grab      **Source:** See Figure 1  
**Date Sampled:** February 20/08      **Date Received:** February 20/08      **Date Tested:** February 25/08



**Percent of:** GRAVEL (0.0%), SAND (0.5%), SILT (74.1%) and CLAY (25.4%)  
**Sample Description:**

**ENG-TECH Consulting Limited**

**COMMENTS:**

per \_\_\_\_\_  
 Contact: Clark Hryhoruk, M. Sc., P. Eng., President  
 Ph: (204) 233-1694 Fax: (204) 235-1579

**Pavement Core Photos**



Carruthers Avenue

