



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 7-2005

**PROVINCE OF MANITOBA/CITY OF WINNIPEG 2005 RESIDENTIAL STREET
RENEWAL PROGRAM – PART 1: PARK BOULEVARD WEST AND VARIOUS
OTHER LOCATIONS, PART 2: OAK STREET, AND PART 3: OAK STREET SEWER
WORKS**

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PART B

BIDDING PROCEDURES

PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

- B1.1 PROVINCE OF MANITOBA/CITY OF WINNIPEG 2005 RESIDENTIAL STREET RENEWAL PROGRAM – PART 1: PARK BOULEVARD WEST AND VARIOUS OTHER LOCATIONS, PART 2: OAK STREET, AND PART 3: OAK STREET SEWER WORKS

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, April 20th, 2005.
- 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 in Adobe Acrobat (.pdf) format at The City of Winnipeg, Corporate Finance, Materials Management 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 Division's Bid Opportunities internet website for addenda shortly before submitting his Bid.
- B4.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 12 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 at 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 PDF version of the Form B: PRICES and the Excel version of the 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 Division
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 14 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 Clause B6.3.2 and B14.4.2, an electronic spreadsheet of Form B: PRICES (Excel format) is available with the Documents for this Bid Opportunity at the Materials Management Division's Bid Opportunities 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.
- B8.4 Form B: Prices is organized into Parts: Part 1, Part 2 and Part 3 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, Part 2 and Part 3.

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 Division 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 Division 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 Manitoba, 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.

B10.3 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.

B10.4 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

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 Division, 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 in Adobe Acrobat (pdf) format on the Closed Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division 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 page at The City of Winnipeg, Corporate Finance, Materials Management Division 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, or by other authorities having jurisdiction.

B12. IRREVOCABLE BID

B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 13 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 13 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 14 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 14 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 Award Authority 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;
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B9;
 - (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.
- B14.2.1 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.
- 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 of Winnipeg 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 Award Authority 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.
- B15.4 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

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 in Adobe Acrobat (.pdf) format on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt>.

PART D

SUPPLEMENTAL CONDITIONS

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 two parts:
- (a) Part 1 – City Funded Work
 - (b) Part 2 – Provincially Funded Work.
 - (c) Part 3 – Sewer Work

Part 1 – City Funded Work

- D2.2 Part 1 – City Funded Work shall consist of:
- (a) Pavement Reconstruction
 - (i) Park Boulevard West from Grant Avenue to Mountbatten Avenue (Concrete)
 - (ii) Beaverbrook Street from Academy Road to Academy South Alley (Concrete)
 - (iii) Academy South Alley from Beaverbrook Street to Lanark Street (Concrete)
 - (b) Major Rehabilitation
 - (i) Eldridge Avenue from Elmhurst Street to Cathcart Street
 - (ii) Craig Street from Portage Avenue to Wolseley Avenue

Part 2 – Provincially Funded Work

- D2.3 Part 2 – Provincially Funded Work shall consist of:
- (a) Pavement Reconstruction
 - (i) Oak Street from Academy Road to Wellington Crescent (Concrete)

Part 3 – Sewer Work

- D2.4 Part 3 – Sewer Work shall consist of:
- (a) Combined Sewer Renewal
 - (i) Oak Street from 1st Manhole South of Wellington Crescent to 3rd Manhole South of Wellington Crescent
- D2.5 Bidders are advised that 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. Part 3 of the Work will take place regardless of Part 2 taking place or not.
- D2.5.1 Further to GC:7.1, 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.
- D2.5.2 Further to GC:7.5, GC:7.5.1, and GC:7.6, a reduction in the Contract Price pursuant to D2.5.1 shall not be considered in calculating the aggregate reduction in the Contract Price for purposes of GC:7.5.
- D2.5.3 If all or any portion of Part 2 is eliminated pursuant to D2.5.1, 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.
- D2.6 The major components of the Work are as follows:
- (a) Concrete Pavement Reconstruction
 - (i) Remove existing pavement
 - (ii) Excavation
 - (iii) Installation of sub-drains (Park Blvd West and Oak Street)
 - (iv) Compaction of existing sub-grade
 - (v) Installation of catchbasins and connection pipe as per SD-024 (Park Blvd West and Oak Street)
 - (vi) Insulation of water services (Oak Street)
 - (vii) Placement of separation/reinforcement fabric (Park Blvd West, Beaverbrook Street, and Oak Street)
 - (viii) Placement of sub-base and base course materials
 - (ix) Sidewalk Renewal (Beaverbrook Street)
 - (x) Construct 150 mm concrete pavement (reinforced) utilizing slip-form paving equipment (Park Blvd West and Oak Street)
 - (xi) Construct 150 mm concrete pavement (reinforced, 72 hr early opening) (Beaverbrook Street and Academy South Alley)
 - (xii) Construct 150 mm curb (separate) (Beaverbrook Street)
 - (xiii) Construct 180 mm curb (separate) utilizing slip-form paving equipment (Park Blvd West and Oak Street)
 - (xiv) Boulevard restoration
 - (xv) Parking lot restoration (Academy South Alley)
 - (b) Major Rehabilitation
 - (i) Complete saw cutting for curb and gutter (Craig Street)
 - (ii) Remove existing pavement for curb and gutter (Craig Street)
 - (iii) Complete sidewalk renewal
 - (iv) Complete joint and slab restoration (Eldridge Avenue)

- (v) Replace curb inlets with catchpits as per SD-023 (Craig Street)
 - (vi) Construct curb and gutter utilizing slip-form paving equipment (Craig Street)
 - (vii) Renewal of existing curb utilizing slip-form paving equipment (Eldridge Avenue)
 - (viii) Planing of existing asphalt pavement (Craig Street)
 - (ix) Complete pavement patching (Craig Street)
 - (x) Boulevard Restoration
 - (xi) Placement of asphalt overlay
(Craig Street average thickness – 95 mm)
 - (xii) (Eldridge Avenue average thickness – 90 mm)
- (c) Combined Sewer Renewal
- (i) Renewal of existing sewer off line
 - (ii) Installation of Manholes
 - (iii) Abandonment of Existing Sewer, Manholes and Catchbasins
 - (iv) Renewal of Sewer services to new sewer alignment for private services and all catchbasins.
 - (v) Inspect Sewer segment for deficiencies

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is Dillon Consulting Ltd., represented by:

Dave P. Krahn, P. Eng.
Project Manager
Suite 200 – 895 Waverley Street
Winnipeg, Manitoba R3T 5P4
Telephone No. (204) 453-2301
Facsimile No. (204) 452-4412

D3.2 At the pre-construction meeting, Dave P. Krahn, 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 Division 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 certified true copy or 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 Manitoba, 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.
- D9.2 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. EQUIPMENT LIST

- D11.1 The Contractor shall provide the Contract Administrator with a complete list of the equipment which the Contractor proposes to utilize (Form K: Equipment 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.

D12. DETAILED WORK SCHEDULE

- D12.1 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.

- D12.2 If, prior to submitting the Detailed Work Schedule, the Contractor does not receive notification pursuant to D14.3 that all or some portion of Part 2 of the Work may be commenced, he shall complete Form L: 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 ten (10) Working Days for Part 2.
- 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.

D13. SECURITY CLEARANCE

- D13.1 Each individual proposed to perform Work under the Contract within City facilities or on private property shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his/her place of residence.
- D13.2 Prior to the commencement of any Work, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Criminal Record Search Certificate obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform Work within City facilities or on private property.
- D13.3 Any individual for whom a Criminal Record Search Certificate is not provided, or for whom a Criminal Record Search Certificate indicates any convictions or pending charges related to property offences or crimes against another person, will not be permitted to perform any Work within City facilities or on private property.
- D13.4 Any Criminal Record Search Certificate obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- D13.5 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated criminal records search. Any individual who fails to provide a satisfactory Criminal Record Search Certificate as a result of a repeated criminal records search will not be permitted to continue to perform Work under the Contract within City facilities or on private property.

SCHEDULE OF WORK

D14. COMMENCEMENT

- D14.1 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.
- D14.2 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 equipment list specified in D11;
- (ix) the detailed work schedule specified in D12; and
- (x) the security clearances specified in D13.

- (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.

D14.3 The Contractor shall not commence Part 2 of the Work as described in D2 and identified in Form B: Prices, unless prior to July 31, 2005, he has received notification from the Contract Administrator that the City has received notice of sufficient funding from the Province.

D15. WORKING DAYS

D15.1 Further to GC:1.1(gg);

D15.1.1 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.

D15.1.2 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.

D16. RESTRICTED WORK HOURS

D16.1 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.

D17. WORK BY OTHERS

D17.1 Work by others on or near the Site will include but not necessarily be limited to:

- (a) MTS- Miscellaneous adjustments to manholes or other appurtenances may be required on any of the residential streets. These adjustments should be co-ordinated with the adjustment of drainage inlets and manholes performed by the Contractor;
- (b) Manitoba Hydro – Miscellaneous adjustments to manholes or other appurtenances may be required on any of the residential streets. These adjustments should be co-ordinated with the adjustment of drainage inlets and manholes performed by the Contractor. In addition, temporary overhead street lighting cables, and new permanent street lighting cables behind the curb will be placed on all the Reconstruction roadwork locations, and should be co-ordinated prior to any boulevard grading taking place.
- (c) Manitoba Hydro Gas Division – Gas services will be lowered if required on all Reconstruction roadwork locations. This work should be co-ordinated immediately after excavation has taken place.

D18. SEQUENCE OF WORK

D18.1 Further to GC 6.1, the sequence of work shall comply with the following:

D18.1.1 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. For the case of Beaverbrook Street and the Academy South Alley as noted in D18.1.4 below, they will be considered as one street.

D18.1.2 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.

D18.1.3 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.

D18.1.4 The Work on Beaverbrook Street and the Academy South Alley shall be divided into three stages to allow access to parking at the rear of the commercial buildings facing Academy Road. The staging breakdown will be as follows:

- (a) Stage 1: The Contractor shall complete the work on Beaverbrook Street from Academy Rd. to the Academy South Alley and on the Academy South Alley from Beaverbrook St. to STA. 0+170 to the satisfaction of the Contract Administrator, including all concrete work, and landscaping work, before moving on to Stage 2. The Construction of 150 mm concrete pavement (72 hr early opening) (reinforced) for this Stage shall be completed in one continuous pour.
- (b) Stage 2: The Contractor shall complete the work on the Academy South Alley from STA. 0+170 to STA. 0+200 to the satisfaction of the Contract Administrator, including all concrete work, and landscaping work, before moving on to Stage 3.
- (c) Stage 3: The Contractor shall complete the work on the Academy South Alley from STA. 0+200 to Lanark St. as part of Stage 3.

PLEASE NOTE THAT AT NO TIME SHALL THE CONTRACTOR BE PERMITTED TO DRIVE ANY VEHICLE LARGER THAN A PASSENGER VEHICLE THROUGH THE PARKING LOT AT 558 ACADEMY ROAD WHICH CAN BE ACCESSED FROM ACADEMY ROAD AND THE ACADEMY SOUTH ALLEY BEING RECONSTRUCTED. THIS SHALL NOT BE USED AS A THOROUGHFARE AT ANY TIME, NOR SHALL IT BE USED BY MATERIAL TRUCKS OR CONCRETE TRUCKS AS AN ACCESS TO THE ACADEMY SOUTH ALLEY BEING RECONSTRUCTED.

D18.1.5 The Work on Park Boulevard West shall be divided into two stages to allow access to private driveways during construction. The staging breakdown will be as follows:

- (a) Stage 1: The Contractor shall complete the work on Park Boulevard West from Grant Ave. to STA. 0+300 to the satisfaction of the Contract Administrator, including all concrete work, and landscaping work, before moving on to Stage 2. During this time the Contractor shall allow residents effected by Stage 1 construction to park their vehicles overnight on Park Boulevard West from STA. 0+325 to STA. 0+375. The Contractor shall therefore not park or store any equipment, materials or vehicles at this location between the hours of 1900 hours and 0700 hours.
- (b) Stage 2: The Contractor shall complete the work on Park Boulevard West from STA. 0+300 to Mountbatten Ave. as part of Stage 2. During this time the Contractor shall allow residents effected by Stage 2 construction to park their vehicles overnight on the new pavement built in Stage 1 of Park Boulevard West. The Contractor shall

therefore not park or store any equipment, materials or vehicles at this location between the hours of 1900 hours and 0700 hours.

- D18.1.6 The sewer work on Oak Street as stated in D2.6 must be completed prior to the reconstruction of the road works taking place.

D19. SUBSTANTIAL PERFORMANCE

- D19.1 The Contractor shall achieve Substantial Performance within fifty (50) consecutive Working Days of the commencement of the Work as specified in D14.
- 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 fifty-five (55) consecutive Working Days of the commencement of the Work as specified in D14.
- 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 Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City one thousand five hundred dollars (\$1,500) per Working Day for each and every Working Day following the day fixed herein for Total Performance during which such failure continues.
- D21.2 The amount specified for liquidated damages in D21.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Total Performance by the day 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) Reflective Crack Maintenance as specified in CW 3250;

(b) Sodding (Maintenance Period) as specified in CW 3510.

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 the site field office. 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 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

D25. WARRANTY

D25.1 Notwithstanding GC:13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter for Major Rehabilitation work, and two (2) years thereafter for pavement reconstruction works, unless extended pursuant to GC:13.2.1 or GC:13.2.2, in which case it shall expire when provided for thereunder.

D25.2 Notwithstanding GC:13.2 the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if:

- (a) a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use; or
- (b) Substantial Performance has been achieved

D25.2.1 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 OPPURTUNITY NO. 7-2005

PROVINCE OF MANITOBA/CITY OF WINNIPEG 2005 RESIDENTIAL STREET RENEWAL PROGRAM – PART 1: PARK BOULEVARD WEST AND VARIOUS OTHER LOCATIONS, PART 2: OAK STREET, AND PART 3: OAK STREET SEWER WORKS 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 D10)

PROVINCE OF MANITOBA/CITY OF WINNIPEG 2005 RESIDENTIAL STREET RENEWAL PROGRAM –
PART 1: PARK BOULEVARD WEST AND VARIOUS OTHER LOCATIONS, PART 2: OAK STREET, AND
PART 3: OAK STREET SEWER WORKS

<u>Portion of the Work</u>	<u>Name</u>	<u>Address</u>
UNDERGROUND WORKS - SUPPLY OF MATERIALS		
Sewer Piping		
Catchbasins/Manholes and Drainage Inlets		
Subdrains		
Geotextile		
Other		
UNDERGROUND WORKS - INSTALLATION/PLACEMENT		
Sewer Piping		
Catchbasins/Manholes and Drainage Inlets		
Subdrains		
Geotextile		
Other		
SURFACE WORKS - SUPPLY OF MATERIALS		
Concrete		
Asphalt		
Sub-Base and Base Course		
Topsoil/Sodding		
Other		
SURFACE WORKS - INSTALLATION/PLACEMENT		
Concrete Works		
Asphaltic Concrete Pavement Works		
Sub-Base and Base Course		
Topsoil/Sodding		
Other		

FORM K: EQUIPMENT
(See D11)

PROVINCE OF MANITOBA/CITY OF WINNIPEG 2005 RESIDENTIAL STREET RENEWAL PROGRAM –
PART 1: PARK BOULEVARD WEST AND VARIOUS OTHER LOCATIONS, PART 2: OAK STREET, AND
PART 3: OAK STREET SEWER WORKS

<p>1. Category/type: Sewer Works</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>2. Category/type: Earth Moving/Excavation</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>3. Category/type: Compaction</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>

FORM K: EQUIPMENT
(See D11)

PROVINCE OF MANITOBA/CITY OF WINNIPEG 2005 RESIDENTIAL STREET RENEWAL PROGRAM –
PART 1: PARK BOULEVARD WEST AND VARIOUS OTHER LOCATIONS, PART 2: OAK STREET, AND
PART 3: OAK STREET SEWER WORKS

<p>4. Category/type: Concrete Restoration and Paving</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>5. Category/type: Asphalt Paving</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>6. Category/type: Miscellaneous</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>

FORM L: DETAILED WORK SCHEDULE
 (See D12)

**PROVINCE OF MANITOBA/CITY OF WINNIPEG 2005 RESIDENTIAL STREET RENEWAL PROGRAM –
 PART 1: PARK BOULEVARD WEST AND VARIOUS OTHER LOCATIONS, PART 2: OAK STREET, AND
 PART 3: OAK STREET SEWER WORKS**

For each item of Work, indicate the cumulative percentage proposed to be completed by the end of each time period until 100% completion is achieved.						
Items of Work	Time Period in Working Days					
	10	20	30	40	50	55
PART 1 CITY FUNDED WORK						
Park Boulevard West Reconstruction Grant Ave to Mountbatten Ave						
Beaverbrook Street Reconstruction Academy Rd to Academy South Alley						
Academy South Alley Reconstruction Beaverbrook St to Lanark St						
Eldridge Avenue Major Rehabilitation Elmhurst St to Cathcart St						
Craig Street Major Rehabilitation Portage Ave to Wolseley Ave						
PART 2 PROVINCIALY FUNDED WORK						
Oak Street Reconstruction Academy Rd to Wellington Cr						
PART 3 SEWER WORK						
Oak Street Sewer Reconstruction 1 st MH South of Wellington Cr. to 3 rd MH South of Wellington Cr.						

PART E

SPECIFICATIONS

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 in Adobe Acrobat (.pdf) format 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:

Drawing No.	Drawing Title	Size
04-3914-1000 Sht1	Park Boulevard West – Grant Ave. to Mountbatten Ave. – Grant Ave. to STA. 0+250	Full Size
04-3914-1000 Sht2	Park Boulevard West – Grant Ave. to Mountbatten Ave. – STA. 0+250 to STA. 0+375	Full Size
04-3914-1000 Sht3	Park Boulevard West – Grant Ave. to Mountbatten Ave. – STA. 0+375 to STA. 0+510	Full Size
04-3914-1000 Sht4	Park Boulevard West – Grant Ave. to Mountbatten Ave. – STA. 0+510 to Mountbatten Ave.	Full Size
04-3914-1000 Sht5	Beaverbrook Street – Academy South Alley to Academy Rd.	Full Size
04-3914-1000 Sht6	Academy South Alley – Beaverbrook St. to Lanark St.	Full Size
04-3914-1000 Sht7	Oak Street – Academy Rd. to Wellington Cr. – Academy Rd. to STA. 0+225	Full Size
04-3914-1000 Sht8	Oak Street – Academy Rd. to Wellington Cr. – STA. 0+225 to STA. 0+370	Full Size
04-3914-1000 Sht9	Oak Street – Academy Rd. to Wellington Cr. – STA. 0+370 to Wellington Cr.	Full Size
05531	Oak Street Sewer Renewal – STA. 0+224.32 to STA. 0+376.74	Full Size
R-1	Eldridge Avenue Rehabilitation	11 X 17
R-2	Craig Street Rehabilitation	11 X 17

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 Office facilities are not required for this project.

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 The Contractor shall schedule construction activities to meet the following:

- (a) Park Boulevard West from Grant Avenue to Mountbatten Avenue will be closed to all traffic in the staged area being reconstructed. Local access including access to private approaches shall be maintained in the staged area not being reconstructed. The Contractor shall sign the street "Road Closed, Local Access Only" in accordance with the Manual of Temporary Traffic Control.
- (b) Beaverbrook Street from Academy Road to Academy South Alley will be closed to all traffic. The Contractor shall sign the street "Road Closed" in accordance with the Manual of Temporary Traffic Control.
- (c) Academy South Alley from Beaverbrook Street to Lanark Street will be closed to all traffic in the staged area being reconstructed. Local access including private approaches shall be maintained in the staged area not being reconstructed. The Contractor shall sign the street "Road Closed, Local Access Only" in accordance with the Manual of Temporary Traffic Control.
- (d) Eldridge Avenue from Elmhurst Street to Cathcart Street will be closed to through traffic. Local access shall be maintained. The Contractor shall sign the street "Road Closed, Local Access Only" in accordance with the Manual of Temporary Traffic Control. Private approach access shall be maintained at all times.
- (e) Craig Street from Portage Avenue to Wolseley Avenue will be closed to through traffic. Local access shall be maintained. The Contractor shall sign the street "Road Closed, Local Access Only" in accordance with the Manual of Temporary Traffic Control. Private approach access shall be maintained at all times.
- (f) Oak Street from Academy Road to Wellington Crescent will be closed to all traffic. The Contractor shall sign the street "Road Closed" in accordance with the Manual of Temporary Traffic Control.

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 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:

Park Boulevard West, from Grant Avenue to Mountbatten Avenue.

<i>Collection Day(s):</i>	3
<i>Collection Time:</i>	0700 hours
<i>Common Collection Area:</i>	Park Boulevard West at Mountbatten Avenue

Academy South Alley, from Beaverbrook Street to Lanark Street.

Collection Day(s): 2

Collection Time: 0700 hours

Common Collection Area: STA. 0+150 as per Academy South Alley drawing sheet 6 of 10 during Stage 2 and 3.

E7.3 No measurement or payment will be made for the work associated with this specification.

E8. WATER USED BY CONTRACTOR

E8.1 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.

E9. SURFACE RESTORATIONS

E9.1 Further to clause 3.3 of CW 1130-R1, when Total Performance is not achieved in the year the Contract is commenced, the Contractor shall temporarily repair any Work commenced and not completed to the satisfaction of the Contract Administrator. The Contractor shall maintain the temporary repairs in a safe condition as determined by the Contract Administrator until permanent repairs are completed. The Contractor shall bear all costs associated with temporary repairs and their maintenance.

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. INSULATION OF WATER SERVICES

DESCRIPTION

E11.1 General

E11.1.1 This specification shall cover the insulation of the portion of all existing water service lines to homes or businesses that cross under the roadways to be reconstructed. The portion of water service lines that cross under the roadway are to be insulated with rigid Styrofoam insulation prior to the placement of the new sub-grade.

E11.1.2 Referenced Standard Construction

- (a) CW 2030 – Excavation, Bedding and Backfill
- (b) CW 2110 – Watermains
- (c) CW 3110 – Sub-grade, Sub-base and Base Course Construction

MATERIALS

E11.2 Storage and Handling

E11.2.1 The insulation shall be 50 mm thick Styrofoam HI-40 Brand extruded polystyrene sheets or approved equal.

Sand backfill as per Item 5.4 of CW 2030.

Sub-base material as per Item 5.4 of CW 3110.

CONSTRUCTION METHODS

E11.3 General

E11.3.1 The Contractor shall locate each water service prior to the installation of sub-base material, the Contractor will locate and mark the centreline of the water service on the sub-grade.

E11.3.2 The insulation will be placed on a 50 mm thick sand levelling course throughout its width, one sheet in thickness, centred on the marks made by the Contractor, for the full length of the section to be insulated. The insulation shall extend a distance of 0.6 m perpendicular to the centreline of the water service on each side of the water service (for a total width of insulation of 1.2 m and a total thickness of 50 mm)

E11.3.3 The Contractor will ensure that the insulation remains centred over the existing water service at all times. The insulation will be kept closely butted together and free of chips, gouges or holes.

E11.3.4 Sand backfill, 100 mm in depth, will be carefully placed over the insulation struck off level, and sub-base material placed on top of the sand. Mechanized equipment will not be allowed to travel over the insulation until the depth of sub-base material is 300 mm, or greater.

MEASUREMENT AND PAYMENT

E11.4 Insulation of Water Services

E11.4.1 The supply and installation of Insulation of Water Services will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Insulation of Water Services". The area to be paid for shall be the total number of square metres installed in

accordance with this Specification and accepted by the contract Administrator, as computed from measurements made by the Contract Administrator.

- E11.4.2 Supply and installation of sand levelling course and sub-base course will be considered incidental to the installation of the insulation.

E12. PATCHING OF EXISTING PAVEMENT

DESCRIPTION

E12.1 General

- E12.1.1 This specification covers patching of existing concrete pavement in preparation for an asphalt overlay.

E12.1.2 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

E12.2 Crushed Sub-Base Material

- E12.2.1 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.

E12.3 Geotextile Fabric

- E12.3.1 Geotextile fabric will be supplied in accordance with Section 2 of CW 3130.

E12.4 Asphalt Material

- E12.4.1 Asphalt material will be Type 1A and will be supplied in accordance with Sections 5 and 6 of CW 3410.

CONSTRUCTION METHODS

E12.5 General

- E12.5.1 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.
- E12.5.2 Excavate to a depth of 350 millimetres below the top of the existing pavement.
- E12.5.3 Compact existing sub-grade to a minimum of 95% Standard Proctor Density.
- E12.5.4 Place separation/reinforcement geotextile fabric in accordance with Specification CW 3130.
- E12.5.5 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.
- E12.5.6 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.

- E12.5.7 Each layer must be levelled and accepted by the Contract Administrator before the succeeding layer may be placed.
- E12.5.8 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

- E12.6 Pavement Patching
 - E12.6.1 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.

E13. **SUPPLY AND INSTALLATION OF HIGH STRENGTH GEOTEXTILE FABRIC**

DESCRIPTION

- E13.1 General
 - E13.1.1 This specification covers the supply and installation of high strength geotextile fabric for bridging over unstable sub-grade conditions.
 - E13.1.2 Referenced Standard Construction Specifications
 - (a) CW 3130 - Supply and Installation of Geotextile Fabrics

MATERIALS

- E13.2 Mill Certificate and Bill of Lading
 - E13.2.1 Provide mill certificate and bill of lading in accordance with Section 2 of CW 3130.
- E13.3 High Strength Geotextile Fabric
 - E13.3.1 Separation/reinforcement fabric will be woven fabric and meet or exceed the following requirements:

PHYSICAL PROPERTY	REQUIREMENTS	TEST METHOD
Grab Tensile Strength	1750 N – minimum MD 1100 N – minimum CD	ASTM D4632
Puncture Strength	800 N – minimum	ASTM D4833
Trapezoidal Tear	800 N – minimum MD 490 N – minimum CD	ASTM D4533
Apparent Opening Size	0.600 mm – maximum	ASTM D4751
Permittivity	0.05 sec ⁻¹ - minimum	ASTM D4491
U.V. Resistance	70% per 500 hrs – minimum	ASTM D4355
Mullen Burst	5500 kPa – minimum	ASTM D3786

MD – Indicates property in machine direction or along the roll length.

CD – Indicates property in cross machine direction or across the roll width.

E13.3.2 All physical property requirements are MARV (Minimum Average Roll Values) determined in accordance with ASTM 4759.

E13.3.3 Acceptable products will be Armtec Geolon HP 370, or an approved equal.

CONSTRUCTION METHODS

E13.4 Install high strength geotextile fabric in accordance with Section 3.1 of CW 3130.

MEASUREMENT AND PAYMENT

E13.5 High Strength Geotextile Fabric

E13.5.1 Supply and installation of high strength geotextile fabric will be measured on an area basis and paid for at the Contract Unit Price per square metre for “High Strength Geotextile Fabric”. The area to be paid for will be the total number of square metres of high strength geotextile fabric, supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

E13.5.2 Only material placed within the designated sub-grade limits will be included in the payment for “High Strength Geotextile Fabric”.

E13.5.3 No measurement or payment will be made for geotextile fabric removed and replaced due to improper installation or damaged materials.

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.

APPENDIX 'A'

GEOTECHNICAL REPORT

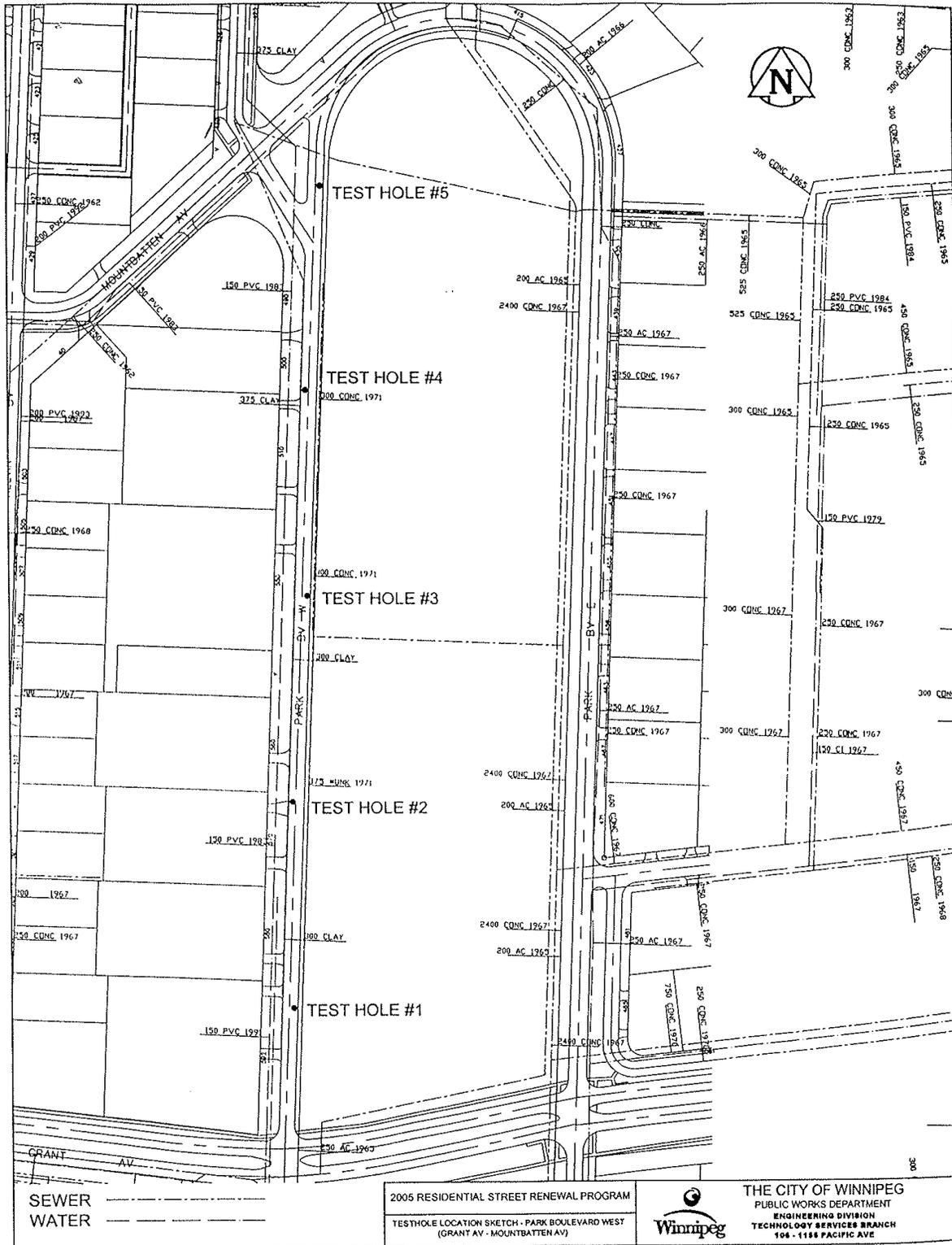
APPENDIX 'A' – GEOTECHNICAL REPORT

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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 Park Boulevard West from Grant Ave to Mountbatten Ave Test Hole Locations



SEWER
 WATER

2005 RESIDENTIAL STREET RENEWAL PROGRAM
 TESTHOLE LOCATION SKETCH - PARK BOULEVARD WEST
 (GRANT AV - MOUNTBATTEN AV)



THE CITY OF WINNIPEG
 PUBLIC WORKS DEPARTMENT
 ENGINEERING DIVISION
 TECHNOLOGY SERVICES BRANCH
 106 - 1155 PACIFIC AVE

Summary of Core Samples

City of Winnipeg
 2005 Street Renewal Program
 Geotechnical Investigation
 Park Boulevard West

Test Hole No.	Testhole Location	Pavement Surface		Pavement Structure Material		Subgrade Description	Sample Location	Moisture Content (%)	Hydrometer Analysis				Atterberg Limits		
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
1	Park Blvd. West	Asphalt	103	--	--	--	--	--	--	--	--	--	--	--	--
1	Park Blvd. West	Concrete	135	20 mm G	100	--	--	--	--	--	--	--	--	--	--
2	Park Blvd. West	Asphalt	98	--	--	--	--	--	--	--	--	--	--	--	--
2	Park Blvd. West	Concrete	120	20 mm G	75	Silt	0.76	21.8	--	8.2	75.6	16.2	25.0	18.1	6.9
3	Park Blvd. West	Asphalt	180	--	--	--	--	--	--	--	--	--	--	--	--
3	Park Blvd. West	Concrete	140	20 mm G	137	--	--	--	--	--	--	--	--	--	--
4	Park Blvd. West	Asphalt	109	--	--	--	--	--	--	--	--	--	--	--	--
4	Park Blvd. West	Concrete	143	20 mm G	50	--	--	--	--	--	--	--	--	--	--
5	Park Blvd. West	Asphalt	19	--	--	--	--	--	--	--	--	--	--	--	--
5	Park Blvd. West	Concrete	186	20 mm G	25	Clay	1.98	40.9	0.1	5.3	20.7	73.9	87.9	34.4	53.5

Test Hole Log for TH #1 Park Boulevard West

ENG-TECH CONSULTING LIMITED		Test Hole #: TH1
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING		File No: 04-217-04
Client: City of Winnipeg		Date Drilled: November 3, 2004
Project: Geotechnical Investigation - 2005 Street Renewal Program		Grade Elevation: 100 m (local)
Site: Park Blvd. W.		Water Elevation: --
Location: 592 12.5 m S. of F.L.. 580/592 1.1 m W. of E. curb		

SUBSURFACE PROFILE				SAMPLE DATA				GRAIN SIZE DISTRIBUTION %							
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)							
								PL	0	LL					
0		Ground Surface	100												
		Asphalt - 103 mm thick.													
		Concrete - 135 mm thick.													
		20 mm Granular Fill - 100 mm thick.													
		Clay (CH) - dark grey, damp, high plastic, firm, some silt, varved with silt lenses, occasional silt inclusions. - below 0.6 m, moist.		S1	Split Barrel	100									
				S2	Shelby Tube	100									
1			99	S3	Split Barrel	100									
		Silt (ML) - light brown, moist, low plastic, soft, some to with clay, trace sand sizes.		S4	Split Barrel	100									
		Clay (CH) - dark grey, moist, high plastic, firm, some silt, trace sand sizes, occasional silt inclusions.		S5	Split Barrel	100									
2			98	S6	Split Barrel	100									
				S7	Split Barrel	100									
		End of Test Hole - ended test hole at 2.4 m below grade. - backfilled test hole with auger cuttings. - filled core hole with cold patch.													
3			97												

ENG-TECH Consulting Limited		Drilled By: H.D.M. Enterprises	Completion Depth: 2.4 m
Logged by: CW		Drill Rig: Mounted Bobcat	Completion Elevation: 97.6 m
Reviewed by: <i>CAA</i>		Auger Size: 125 mm solid stem	Sheet: 1
Sample Type	Split Barrel Shelby Tube Auger Cuttings Split Spoon		

Test Hole Log for TH #2 Park Boulevard West

ENG-TECH CONSULTING LIMITED		Test Hole #: TH2
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING		File No: 04-217-04
Client: City of Winnipeg		Date Drilled: November 3, 2004
Project: Geotechnical Investigation - 2005 Street Renewal Program		Grade Elevation: 100 m (local)
Site: Park Blvd. W.		Water Elevation: --
Location: 570 25 m N. of F.L., 570/580 1.35 m E. of W. curb		

SUBSURFACE PROFILE				SAMPLE DATA				GRAIN SIZE DISTRIBUTION %				
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)				
								PL	0	LL		
								Gravel	Sand	Silt	Clay	
0		Ground Surface	100									
		<i>Asphalt</i> - 98 mm thick.										
		<i>Concrete</i> - 120 mm thick.		S1	Split Barrel	100						
		<i>20 mm Granular Fill</i> - 75 mm thick.										
		<i>Silt (ML)</i> - light brown, moist, low plastic, soft, some clay, trace sand sizes.		S2	Shelby Tube	100						
1			99	S3	Shelby Tube	100						
		<i>Clay (CH)</i> - dark grey, moist, high plastic, firm, some silt, trace sand sizes, occasional silt inclusions.		S4	Shelby Tube	100						
				S5	Shelby Tube	100						
2			98	S6	Shelby Tube	100				0.0	8.2	75.6
		<i>Silty Clay (CI)</i> - light brown, moist, medium plastic, firm, with silt, trace sand sizes.		S7	Shelby Tube	100						
		<i>End of Test Hole</i> - ended test hole at 2.4 m below grade. - backfilled test hole with auger cuttings. - filled core hole with cold patch.										
3			97									

ENG-TECH Consulting Limited		
Logged by: CW	Drilled By: H.D.M. Enterprises	Completion Depth: 2.4 m
Reviewed by: <i>CTA</i>	Drill Rig: Mounted Bobcat	Completion Elevation: 97.6 m
	Auger Size: 125 mm solid stem	Sheet: 1
Sample Type	Split Barrel Shelby Tube Auger Cuttings Split Spoon	

Test Hole Log for TH #3 Park Boulevard West

ENG-TECH CONSULTING LIMITED		Test Hole #: TH3
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING		File No: 04-217-04
Client: City of Winnipeg		Date Drilled: November 3, 2004
Project: Geotechnical Investigation - 2005 Street Renewal Program		Grade Elevation: 100 m (local)
Site: Park Blvd. W.		Water Elevation: --
Location: 550 23 m S. of S. edge D/W, 550 0.75 m W. of E. curb		

SUBSURFACE PROFILE				SAMPLE DATA				GRAIN SIZE DISTRIBUTION %							
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)							
								PL	0	LL					
0		Ground Surface	100												
		Asphalt - 180 mm thick.													
		Concrete - 140 mm thick.													
		20 mm Granular Fill - 137 mm thick.													
		Silt (ML) - light brown, moist, low plastic, soft, some clay silt, trace sand sizes.		S1		100									
				S2		100									
				S3		100									
1		Clay (CH) - dark grey, moist, high plastic, stiff to firm, some silt, trace sand & gravel sizes, occasional silt inclusions.	99												
				S4		100									
				S5		100									
2			98												
				S6		100									
				S7		100									
		End of Test Hole - ended test hole at 2.5 m below grade. - backfilled test hole with auger cuttings. - filled core hole with cold patch.													
3			97												

ENG-TECH Consulting Limited		Drilled By: H.D.M. Enterprises	Completion Depth: 2.5 m
Logged by: CW		Drill Rig: Mounted Bobcat	Completion Elevation: 97.5 m
Reviewed by: <i>CW</i>		Auger Size: 125 mm solid stem	Sheet: 1
Sample Type	Split Barrel Shelby Tube Auger Cuttings Split Spoon		

Test Hole Log for TH #4 Park Boulevard West

ENG-TECH CONSULTING LIMITED		Test Hole #: TH4
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING		File No: 04-217-04
Client: City of Winnipeg		Date Drilled: November 3, 2004
Project: Geotechnical Investigation - 2005 Street Renewal Program		Grade Elevation: 100 m (local)
Site: Park Blvd. W.		Water Elevation: --
Location: 500 3.6 m N. of F.L., 510/500 1.35 m E. of W. curb		

SUBSURFACE PROFILE			SAMPLE DATA				GRAIN SIZE DISTRIBUTION %							
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)						
								PL	0	LL				
0		Ground Surface	100											
		<i>Asphalt</i> - 109 mm thick.												
		<i>Concrete</i> - 143 mm thick.												
		<i>20 mm Granular Fill</i> - 50 mm thick.		S1		100								
		<i>Clay Fill (CH)</i> - dark grey, moist, high plastic, firm, some silt & sand sizes, trace organics.		S2		100								
		<i>Silt (ML)</i> - light brown, moist, low plastic, soft, some clay, trace sand & gravel sizes.		S3		100								
1		<i>Clay (CH)</i> - dark grey, moist, high plastic, stiff to firm, some silt, trace sand sizes.	99	S4		100								
				S5		100								
				S6		100								
				S7		100								
2			98	S8		100								
		<i>End of Test Hole</i> - ended test hole at 2.2 m below grade. - backfilled test hole with auger cuttings. - filled core with cold patch.												
3			97											

ENG-TECH Consulting Limited			Drilled By: H.D.M. Enterprises			Completion Depth: 2.2 m			
Logged by: CW			Drill Rig: Mounted Bobcat			Completion Elevation: 97.8 m			
Reviewed by:			Auger Size: 125 mm solid stem			Sheet: 1			
Sample Type			Split Barrel	Shelby Tube	Auger Cuttings	Split Spoon			

Test Hole Log for TH #5 Park Boulevard West

ENG-TECH CONSULTING LIMITED		Test Hole #: TH5
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING		File No: 04-217-04
Client: City of Winnipeg		Date Drilled: November 3, 2004
Project: Geotechnical Investigation - 2005 Street Renewal Program		Grade Elevation: 100 m (local)
Site: Park Blvd. W.		Water Elevation: 99.2 m
Location: 40 m S. of curb line Mountbatten 1.5 m W. of E. curb		

SUBSURFACE PROFILE				SAMPLE DATA				GRAIN SIZE DISTRIBUTION %								
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)								
								PL	LL	Gravel	Sand	Silt	Clay			
0		Ground Surface	100													
		<i>Asphalt</i> - 19 mm thick.														
		<i>Concrete</i> - 186 mm thick.														
		<i>20 mm Granular Fill</i> - 25 mm thick, trace organics.														
		<i>Silt (ML)</i> - light brown, wet, low plastic, soft, some clay, trace sand sizes.		S1		100										
				S2		100										
		<i>Clay (CH)</i> - dark brown, moist, high plastic, stiff to firm, with silt inclusions, trace sand sizes.	99	S3		100										
				S4		100										
				S5		100										
				S6		100										
			98	S7		100										
		<i>End of Test Hole</i> - ended test hole at 2.4 m below grade. - water in test hole at 0.8 m after drilling. - backfilled test hole with auger cuttings. - filled core hole with cold patch.														
3			97													

ENG-TECH Consulting Limited		Drilled By: H.D.M. Enterprises	Completion Depth: 2.4 m
Logged by: CW		Drill Rig: Mounted Bobcat	Completion Elevation: 97.6 m
Reviewed by: <i>CA</i>		Auger Size: 125 mm solid stem	Sheet: 1
Sample Type	Split Barrel	Shelby Tube	Auger Cuttings
			Split Spoon

Particle Size Analysis #1 for Park Boulevard West TH #2

ENG-TECH CONSULTING LIMITED
 GEOTECHNICAL - ENVIRONMENTAL - MATERIALS TESTING

**PARTICLE SIZE
 ANALYSIS REPORT**

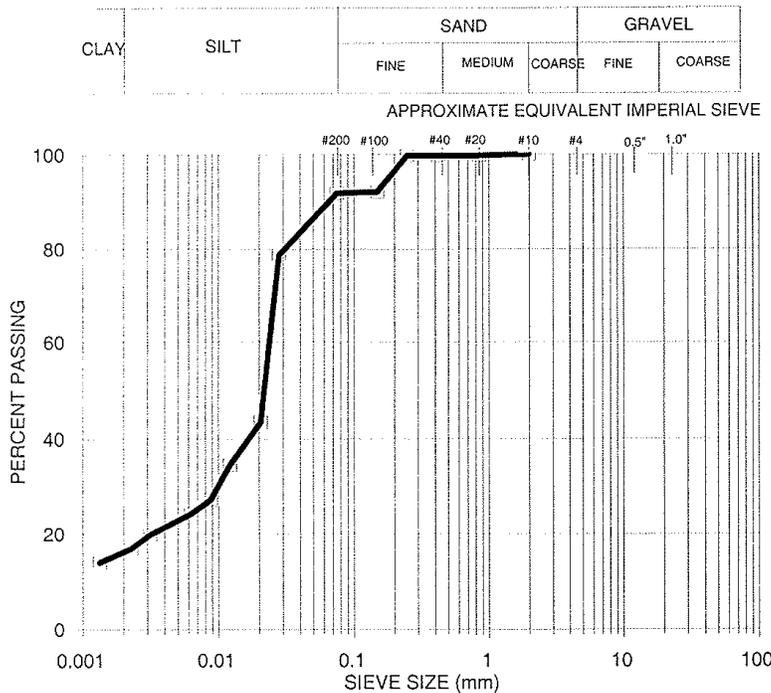
City of Winnipeg
 c/o UMA Engineering Ltd.
 1479 Buffalo Place
 Winnipeg, Manitoba
 R3T 1L7

File No.: 04-217-04
 Reference No.: 4-217-4-1

ATTENTION: Ron Bruce, P. Eng.

PROJECT: 2005 Street Renewal Program Geotechnical Investigation

Test Hole No. TH 2 Sample No. S3 Depth: 0.98m
 Sampled By: ENG-TECH Type of Sample: Bag Source: Park Blvd. W
 Date Sampled: Nov 3/04 Date Received: Nov 3/04 Date Tested: Nov 15/04



SIEVE SIZE (mm)	PERCENT PASSING
2.0	100.0
0.850	99.8
0.425	99.8
0.250	99.8
0.150	92.2
0.075	91.8
0.028	78.7
0.021	43.4
0.012	34.6
0.009	27.2
0.0063	24.3
0.0031	19.9
0.0023	16.9
0.0013	14.0

Percent of: GRAVEL (0.0%), SAND (8.2%), SILT (75.6%) and CLAY (16.2%)
 Sample Description: Silt, low plastic, soft, moist, light brown, some clay, trace sand sizes.

COMMENTS:

ENG-TECH Consulting Limited

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

Particle Size Analysis #2 for Park Boulevard West TH #5

ENG-TECH CONSULTING LIMITED
 GEOTECHNICAL - ENVIRONMENTAL - MATERIALS TESTING

**PARTICLE SIZE
 ANALYSIS REPORT**

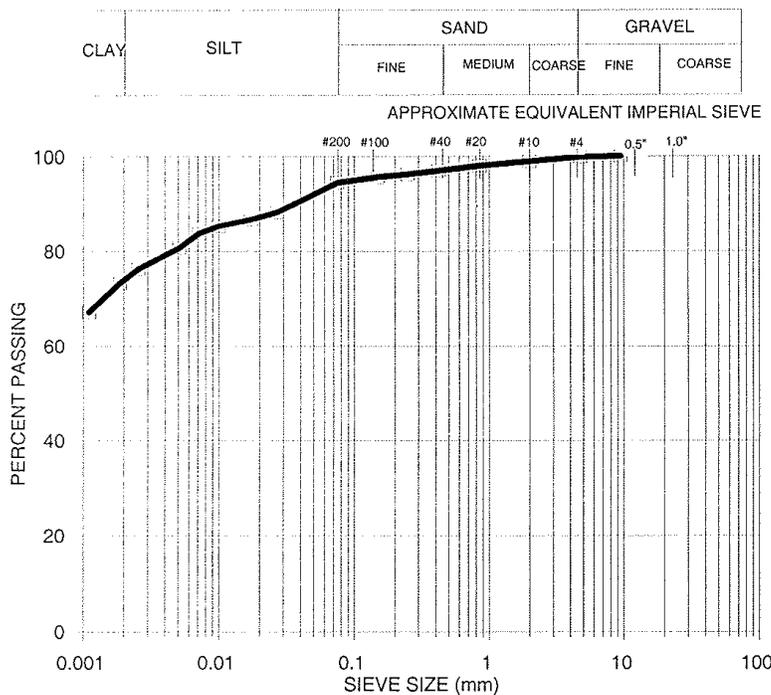
City of Winnipeg
 c/o UMA Engineering Ltd.
 1479 Buffalo Place
 Winnipeg, Manitoba
 R3T 1L7

File No.: 04-217-04
 Reference No.: 4-217-4-2

ATTENTION: Ron Bruce, P. Eng.

PROJECT: 2005 Street Renewal Program Geotechnical Investigation

Test Hole No. TH 5 Sample No. S7 Depth: 2.19m
 Sampled By: ENG-TECH Type of Sample: Bag Source: Park Blvd. W
 Date Sampled: Nov 3/04 Date Received: Nov 3/04 Date Tested: Nov 15/04



Percent of: GRAVEL (0.1%), SAND (5.3%), SILT (20.7%) and CLAY (73.9%)
 Sample Description: Clay, high plastic, stiff to firm, moist, dark brown, with silt, trace sand and gravel sizes.

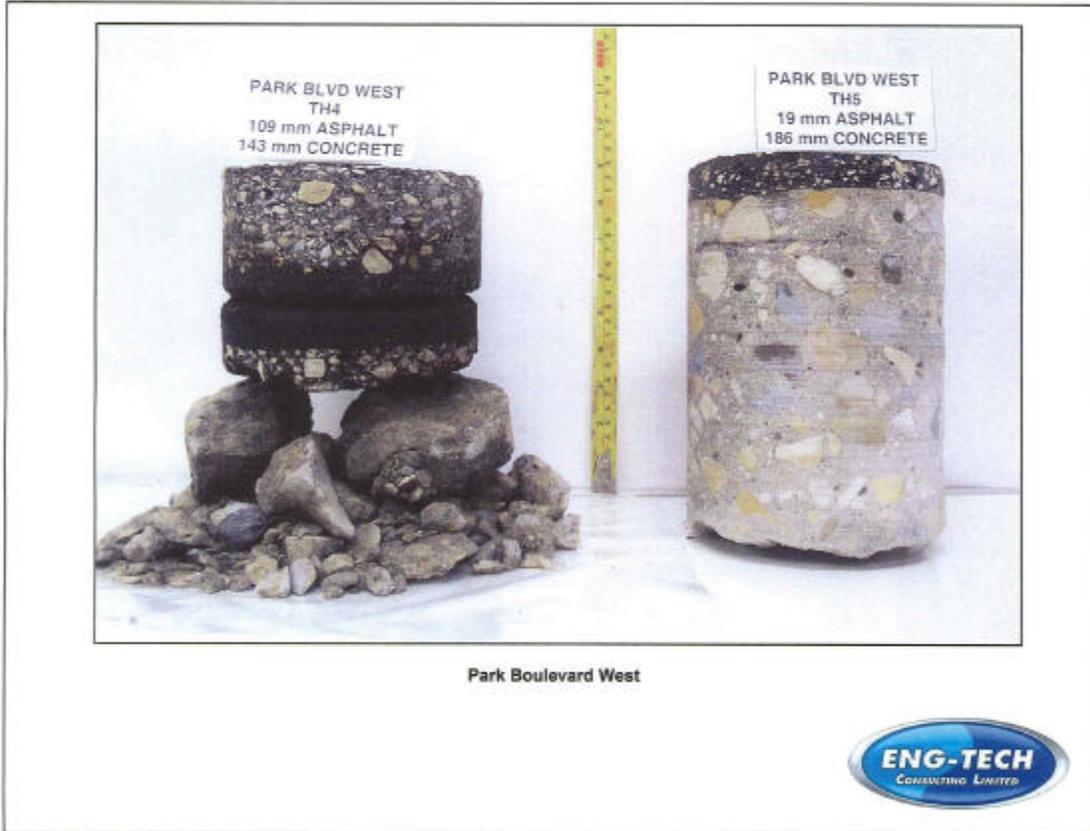
COMMENTS:

ENG-TECH Consulting Limited
 per *[Signature]*
 Contact: Clark Hryhoruk, M. Sc., P. Eng.
 Ph: (204) 233-1694
 Fax: (204) 235-1579

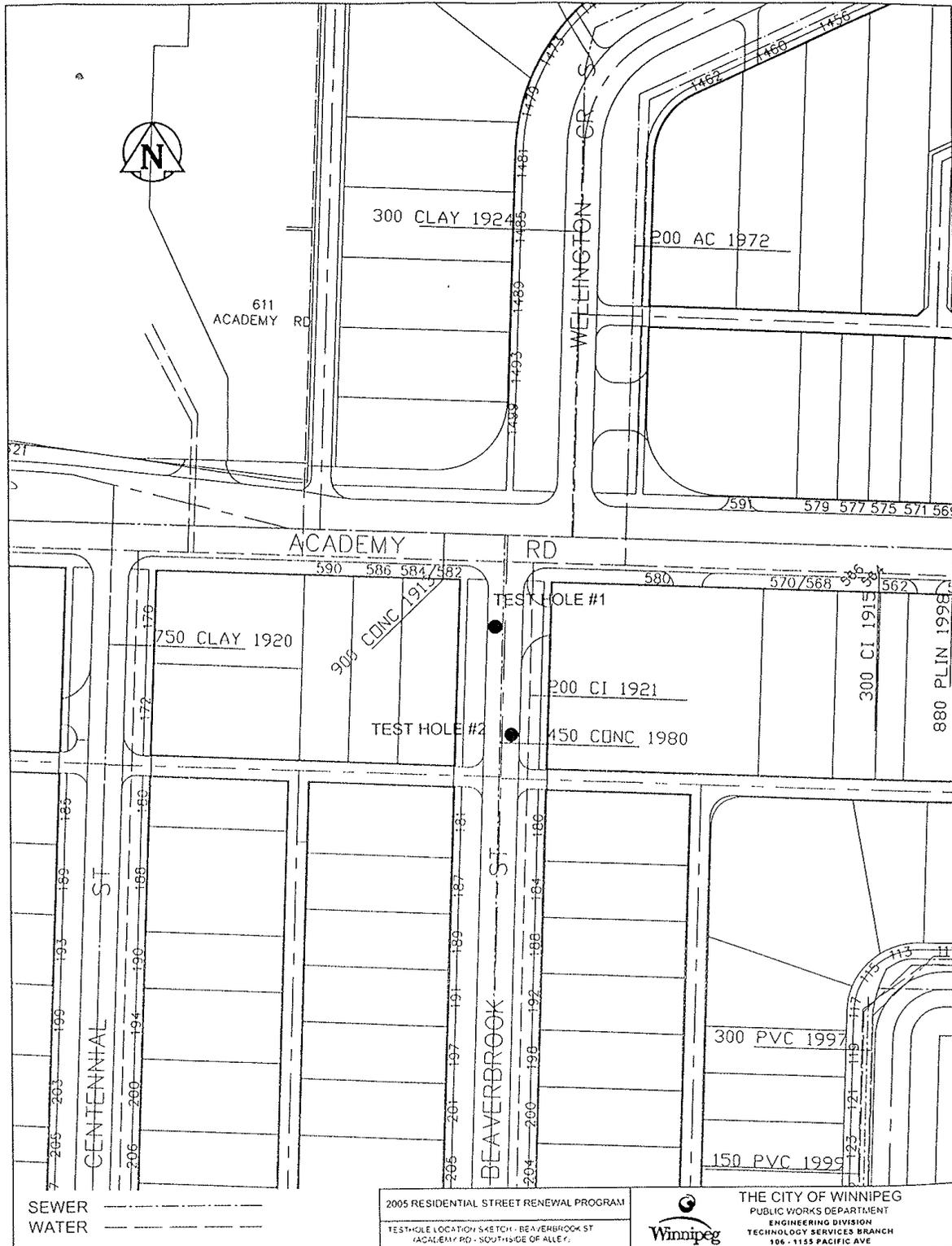
Pavement Core Photos for TH #1, TH #2, and TH #3



Pavement Core Photos for TH #4 and TH#5



Geotechnical Report for Beaverbrook Street from Academy Rd to Academy South Alley Test Hole Locations



H:\Maps\misc\BOREHOLE_LOCATIONS_SA_Sep17.dwg, 21/09/2004 8:58:25 AM

Summary of Core Samples

City of Winnipeg
 2005 Street Renewal Program
 Geotechnical Investigation
 Beaverbrook Street

Test Hole No.	Testhole Location	Pavement Surface		Pavement Structure Material		Subgrade Description	Sample Location	Moisture Content (%)	Hydrometer Analysis				Atterberg Limits		
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
1	Beaverbrook Street	Concrete	174	20 mm G	586	--	--	--	--	--	--	--	--	--	--
2	Beaverbrook Street	Concrete	157	20 mm G	173	Clay	1.07	32.1	17.3	29.3	24.5	28.9	58.7	27.5	31.2

Notes: 20 mm G - 20 mm granular base

Test Hole Log for TH #1 Beaverbrook Street

ENG-TECH CONSULTING LIMITED		Test Hole #: TH1 File No: 04-217-04 Date Drilled: November 8, 2004 Grade Elevation: 100 m (local) Water Elevation: --
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING		
Client: City of Winnipeg		
Project: Geotechnical Investigation - 2005 Street Renewal Program		
Site: Beaverbrook St.		
Location: 9.5m S. of N. F.L. of 582 Academy Rd., 0.7 m E. of W. curb		

SUBSURFACE PROFILE				SAMPLE DATA				GRAIN SIZE DISTRIBUTION %							
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)							
								PL	0	LL					
								20	40	60	80	Gravel	Sand	Silt	Clay
0		Ground Surface Concrete - 174 mm thick. 20 mm Granular Base - 586 mm thick. Suspected Concrete - auger refused at 0.7 m. - no recovery. End of Test Hole - ended test hole at 0.8 m below grade. - backfilled test hole with auger cuttings. - filled core hole with cold patch.	100												
1			99												
2			98												

ENG-TECH Consulting Limited		Drilled By: H.D.M. Enterprises	Completion Depth: 0.8 m
Logged by: CW		Drill Rig: Mounted Bobcat	Completion Elevation: 99.2 m
Reviewed by: <i>CW</i>		Auger Size: 125 mm solid stem	Sheet: 1
Sample Type	Split Barrel	Shelby Tube	Auger Cuttings
			Split Spoon

Test Hole Log for TH #2 Beaverbrook Street

ENG-TECH CONSULTING LIMITED		Test Hole #: TH2
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING		File No: 04-217-04
Client: City of Winnipeg		Date Drilled: November 2, 2004
Project: Geotechnical Investigation - 2005 Street Renewal Program		Grade Elevation: 100 m (local)
Site: Beaverbrook St.		Water Elevation: --
Location: 9.9 m N. of S. F.L. of 580 Academy Rd., 0.6 m W. of E. curb		

SUBSURFACE PROFILE			SAMPLE DATA				GRAIN SIZE DISTRIBUTION %					
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)				
								PL	0	LL		
								Gravel	Sand	Silt	Clay	
0		Ground Surface <i>Concrete</i> - 157 mm thick.	100									
		<i>20 mm Granular Base</i> - 173 mm thick.										
		<i>Clay Fill (CH)</i> - dark grey, wet, high plastic, soft, with silt & sand, some gravel sizes.		S1	Split Barrel	100						
				S2	Split Barrel	100						
1		<i>Clay (CH)</i> - brown, moist, high plastic, firm, some silt.	99	S3	Split Barrel	100			17.3	29.3	24.5	28.9
				S4	Split Barrel	100						
				S5	Split Barrel	100						
2		- between 2.1 m to 2.2 m, grey silt lense, with clay, soft to firm.	98	S6	Split Barrel	100						
				S7	Split Barrel	100						
		End of Test Hole - ended test hole at 2.4 m below grade. - backfilled test hole with auger cuttings. - filled core hole with cold patch.										

ENG-TECH Consulting Limited			Drilled By: H.D.M. Enterprises	Completion Depth: 2.4 m
Logged by: RRB & CW			Drill Rig: Mounted Bobcat	Completion Elevation: 97.6 m
Reviewed by:			Auger Size: 125 mm solid stem	Sheet: 1
Sample Type	Split Barrel	Shelby Tube	Auger Cuttings	Split Spoon

Particle Size Analysis #1 for Beaverbrook TH #2

ENG-TECH CONSULTING LIMITED
 GEOTECHNICAL - ENVIRONMENTAL - MATERIALS TESTING

**PARTICLE SIZE
 ANALYSIS REPORT**

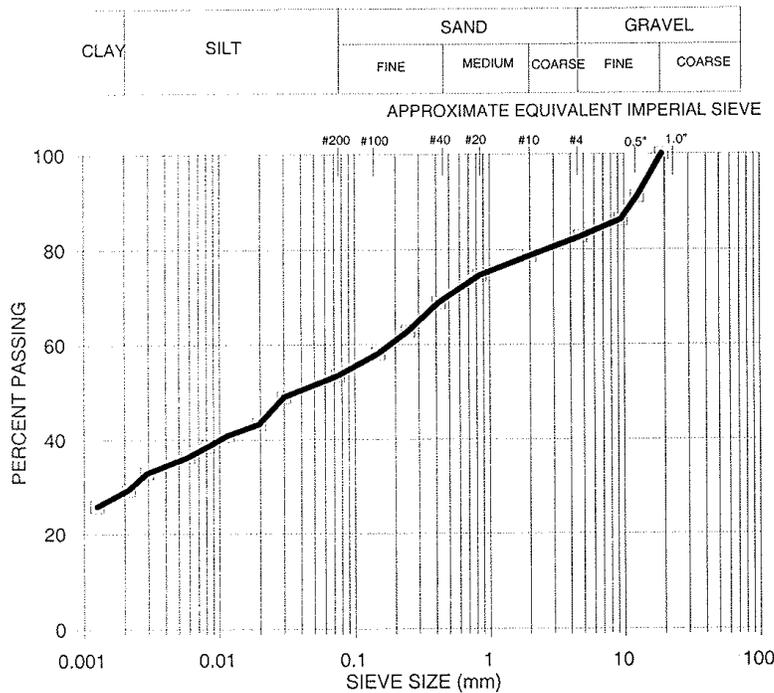
City of Winnipeg
 c/o UMA Engineering Ltd.
 1479 Buffalo Place
 Winnipeg, Manitoba
 R3T 1L7

File No.: 04-217-04
Reference No.: 4-217-4-3

ATTENTION: Ron Bruce, P. Eng.

PROJECT: 2005 Street Renewal Program Geotechnical Investigation

Test Hole No.: TH 2 **Sample No.:** S3 **Depth:** 1.07m
Sampled By: ENG-TECH **Type of Sample:** Bag **Source:** Beaverbrook Street
Date Sampled: Nov 8/04 **Date Received:** Nov 8/04 **Date Tested:** Nov 17/04



SIEVE SIZE (mm)	PERCENT PASSING
19.0	100.0
12.5	91.2
9.5	86.3
4.75	82.7
2.0	78.7
0.850	74.6
0.425	68.8
0.250	62.8
0.150	58.1
0.075	53.5
0.0300	48.9
0.0197	43.1
0.0115	40.8
0.0082	38.5
0.0059	36.2
0.0029	32.8
0.0021	29.3
0.0013	25.9

Percent of: GRAVEL (17.3%), SAND (29.3%), SILT (24.5%) and CLAY (28.9%)
Sample Description: Clay, high plastic, soft, wet, dark grey, with sand sizes, with silt and some gravel.

COMMENTS:

ENG-TECH Consulting Limited

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

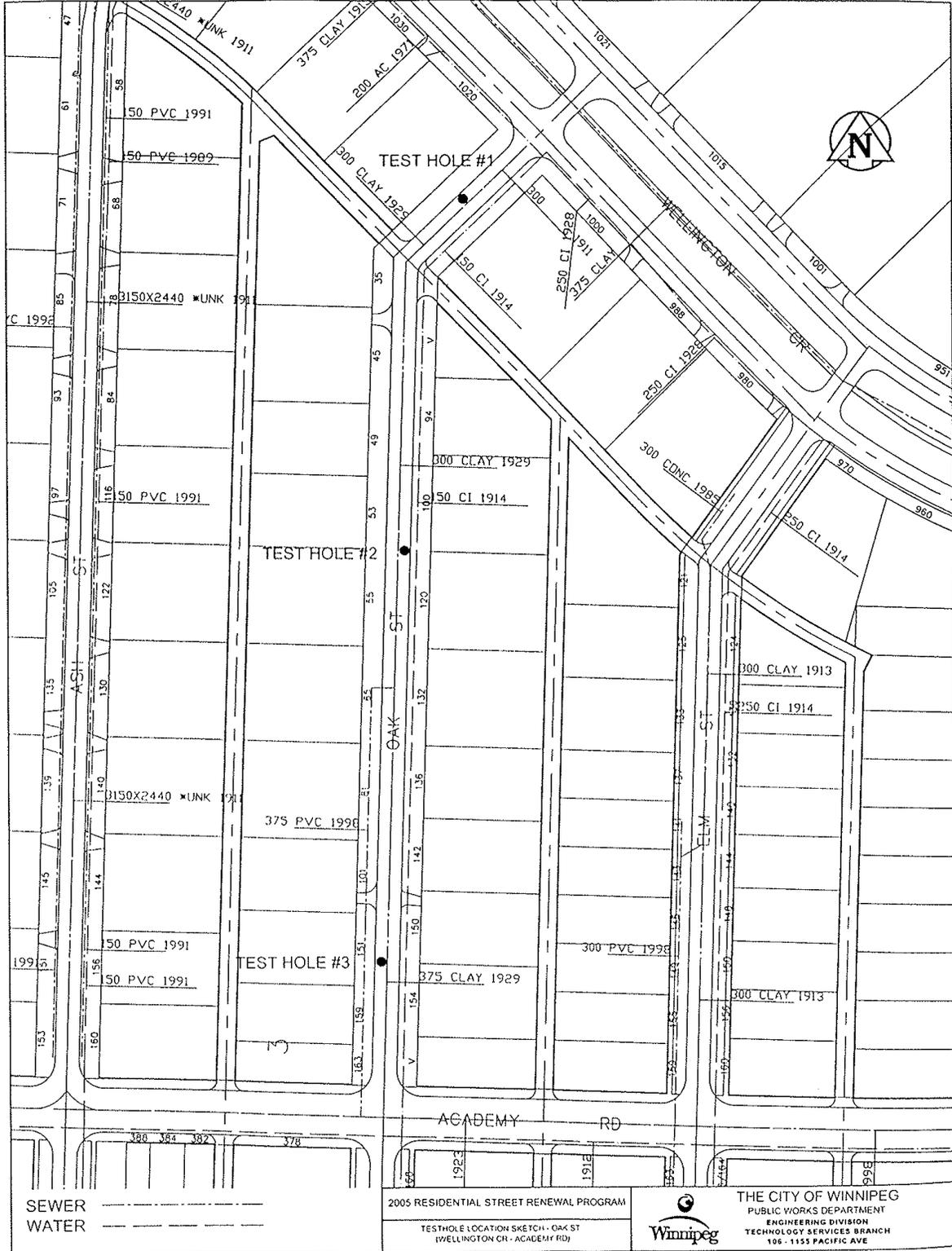
Pavement Core Photos



Beaverbrook Street



Geotechnical Report for Oak Street from Academy Rd to Wellington Cr Test Hole Locations



Summary of Core Samples

City of Winnipeg
 2005 Street Renewal Program
 Geotechnical Investigation
 Oak Street

Test Hole No.	Testhole Location	Pavement Surface		Pavement Structure Material		Subgrade Description	Sample Location	Moisture Content (%)	Hydrometer Analysis				Atterberg Limits		
		Type	Thickness (mm)	Type	Thickness (mm)				Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid Limit	Plastic Limit	Plasticity Index
1	Oak Street	Asphalt	24	--	--	--	--	--	--	--	--	--	--	--	--
1	Oak Street	Concrete	165	20 mm G	115	--	--	--	--	--	--	--	--	--	--
2	Oak Street	Asphalt	18	--	--	--	--	--	--	--	--	--	--	--	--
2	Oak Street	Concrete	142	--	--	Clay	1.83	43.4	--	--	22.3	77.7	102.9	39.4	63.5
3	Oak Street	Asphalt	19	--	--	--	--	--	--	--	--	--	--	--	--
3	Oak Street	Concrete	140	--	--	Clayey Silt	0.76	21.8	--	18.8	59.3	21.9	27.9	19.0	8.9

Notes: 20 mm G - 20 mm granular base

Test Hole Log for TH #1 Oak Street

ENG-TECH CONSULTING LIMITED		<p>Test Hole #: TH1 File No: 04-217-04 Date Drilled: November 12, 2004 Grade Elevation: 100 m (local) Water Elevation: --</p>
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING		
Client: City of Winnipeg		
Project: Geotechnical Investigation - 2005 Street Renewal Program		
Site: Oak St.		
Location: 12.8 m N of S F.L. of 1021 Wellington Cres., 0.8 m E of W curb		

SUBSURFACE PROFILE				SAMPLE DATA				GRAIN SIZE DISTRIBUTION %				
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)				
								PL	0	LL		
								Gravel	Sand	Silt	Clay	
0		Ground Surface	100									
		<i>Asphalt</i> - 24 mm thick.										
		<i>Concrete</i> - 165 mm thick.										
		<i>20 mm Granular Fill</i> - 115 mm thick.										
		<i>Clay Fill (CH)</i> - black to dark grey, moist, high plastic, with silt, some sand sizes, trace gravel sizes.		S1	Split Barrel	100						
		<i>Clayey Silt (CL)</i> - light brown, moist, low plastic, soft, with clay, some sand sizes.		S2	Shelby Tube	100						
			99	S3	Shelby Tube	100						
				S4	Shelby Tube	100						
				S5	Shelby Tube	100						
				S6	Shelby Tube	100						
		<i>Clay (CH)</i> - dark brown, moist, high plastic, firm, with silt. - below 1.1 m, soft. - below 1.3 m, stiff.		S7	Shelby Tube	100						
2			98									
		<i>End of Test Hole</i> - ended test hole at 2.2 m below grade. - backfilled test hole with auger cuttings. - filled core hole with cold patch.										
3			97									

ENG-TECH Consulting Limited		Drilled By: H.D.M. Enterprises	Completion Depth: 97.8 m
Logged by: CW		Drill Rig: Mounted Bobcat	Completion Elevation: 2.2 m
Reviewed by: CA		Auger Size: 125 mm solid stem	Sheet: 1
Sample Type	Split Barrel Shelby Tube Auger Cuttings Split Spoon		

Test Hole Log for TH #2 Oak Street

ENG-TECH CONSULTING LIMITED		Test Hole #: TH2
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING		File No: 04-217-04
Client: City of Winnipeg		Date Drilled: November 9, 2004
Project: Geotechnical Investigation - 2005 Street Renewal Program		Grade Elevation: 100 m (local)
Site: Oak St.		Water Elevation: --
Location: 0.5 m S of N.F.L. of 120 Oak St., 0.4 m W of E curb		

SUBSURFACE PROFILE			SAMPLE DATA				GRAIN SIZE DISTRIBUTION %								
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)							
								PL	0	LL					
0		Ground Surface	100												
		<i>Asphalt</i> - 18 mm thick.													
		<i>Concrete</i> - 142 mm thick.													
		<i>Clay (CH)</i> - dark grey, moist, high plastic, firm, with silt, trace sand sizes.		S1	Split Barrel	100									
				S2	Split Barrel	100									
				S3	Split Barrel	100									
1			99	S4	Split Barrel	100									
		<i>Clayey Silt (CL)</i> - light brown, moist, low plastic, soft, with clay, some sand sizes.		S5	Split Barrel	100									
		<i>Clay (CH)</i> - dark brown, moist, high plastic, stiff, with silt.		S6	Split Barrel	100									
2			98	S7	Split Barrel	100						0.0	0.0	22.3	77.7
		<i>End of Test Hole</i> - ended test hole at 2.2 m below grade. - backfilled test hole with auger cuttings. - filled core hole with cold patch.													
3			97												
4			96												

ENG-TECH Consulting Limited			Drilled By: Paddock Drilling Ltd.	Completion Depth: 2.2 m
Logged by: CW		Drill Rig: Truck mounted Bratt	Auger Size: 125 mm solid stem	Completion Elevation: 97.8 m
Reviewed by: <i>CA</i>				Sheet: 1
Sample Type	Split Barrel	Shelby Tube	Auger Cuttings	Split Spoon

Test Hole Log for TH #3 Oak Street

ENG-TECH CONSULTING LIMITED		Test Hole #: TH3
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS TESTING		File No: 04-217-04
Client: City of Winnipeg		Date Drilled: November 9, 2004
Project: Geotechnical Investigation - 2005 Street Renewal Program		Grade Elevation: 100 m (local)
Site: Oak St.		Water Elevation: --
Location: 8.2 m N of S.F.L. of 151 Oak St., 0.7 m E of W curb		

SUBSURFACE PROFILE				SAMPLE DATA				GRAIN SIZE DISTRIBUTION %						
Depth (m)	Soil Symbol	Description	Elevation (m)	Number	Sample Type	Recovery (%)	blows/300 mm	Water Content (%)						
								PL	0	LL				
0		Ground Surface	100											
		Asphalt - 19 mm thick.												
		Concrete - 140 mm thick.												
		Clay (CH) - black to dark grey, moist, high plastic, firm, with silt, trace sand sizes.		S1	Shelby Tube	100								
				S2	Shelby Tube	100								
1		Clayey Silt (CL) - light brown, moist, low plastic, soft, with clay, some sand sizes. - below 1.2 m, light brown.	99	S3	Shelby Tube	100					0.0	18.8	59.3	21.9
				S4	Shelby Tube	100								
		Clay (CH) - dark brown, moist, high plastic, stiff, with silt.		S5	Shelby Tube	100								
2			98	S6	Shelby Tube	100								
				S7	Shelby Tube	100								
		End of Test Hole - ended test hole at 2.2 m below grade. - backfilled test hole with auger cuttings. - filled core hole with cold patch.												
3			97											
4			96											

ENG-TECH Consulting Limited		Drilled By: Paddock Drilling Ltd.	Completion Depth: 2.2 m
Logged by: CW		Drill Rig: Truck mounted Bratt	Completion Elevation: 97.8 m
Reviewed by: <i>CW</i>		Auger Size: 125 mm solid stem	Sheet: 1
Sample Type	Split Barrel Shelby Tube Auger Cuttings Split Spoon		

Particle Size Analysis #2 for Oak Street TH #3

ENG-TECH CONSULTING LIMITED
 GEOTECHNICAL - ENVIRONMENTAL - MATERIALS TESTING

**PARTICLE SIZE
 ANALYSIS REPORT**

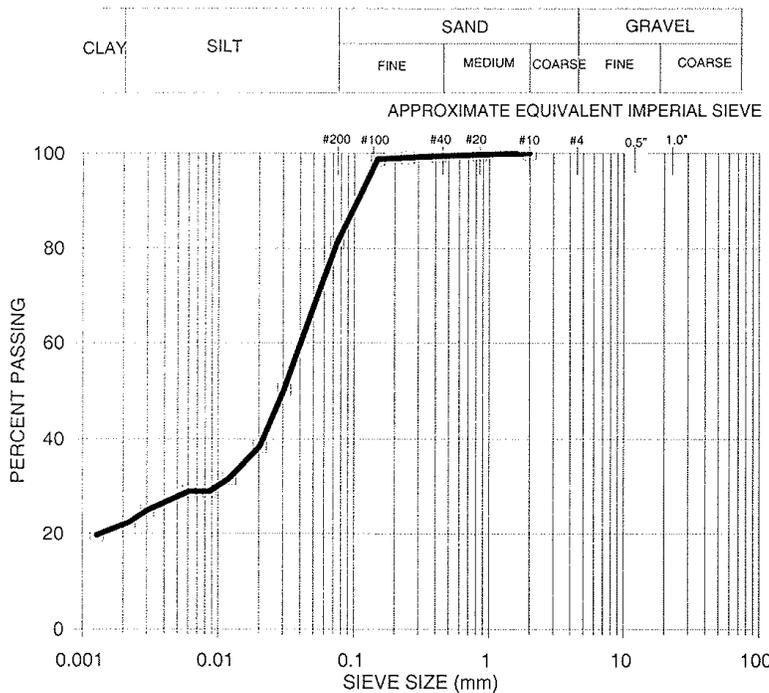
City of Winnipeg
 c/o UMA Engineering Ltd.
 1479 Buffalo Place
 Winnipeg, Manitoba
 R3T 1L7

File No.: 04-217-04
Reference No.: 4-217-4-5

ATTENTION: Ron Bruce, P. Eng.

PROJECT: 2005 Street Renewal Program Geotechnical Investigation

Test Hole No. TH 3 **Sample No. S3** **Depth:** 0.92m
Sampled By: ENG-TECH **Type of Sample: Bag** **Source:** Oak St.
Date Sampled: Nov 12/04 **Date Received: Nov 12/04** **Date Tested:** Nov 29/04



SIEVE SIZE (mm)	PERCENT PASSING
2.0	100.0
0.850	99.8
0.425	99.5
0.250	99.2
0.150	98.8
0.075	81.2
0.031	50.4
0.020	38.4
0.012	31.7
0.009	29.1
0.0061	29.1
0.0030	25.1
0.0022	22.4
0.0013	19.7

Percent of: GRAVEL (0.0%), SAND (18.8%), SILT (59.3%) and CLAY (21.9%)
Sample Description: Clayey Silt, medium plastic, soft, moist, light brown, with clay, some sand sizes.

COMMENTS:

ENG-TECH Consulting Limited
 per *[Signature]*
 Contact: Clark Hryhoruk, M. Sc., P. Eng.
 Ph: (204) 233-1694
 Fax: (204) 235-1579

Pavement Core Photos

