



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 485-2005

**ST. JAMES CIVIC CENTRE PARKING LOT REHABILITATION INCLUDING LAND
DRAINAGE SYSTEM AND RELATED WORKS – 2055 NESS AVENUE**

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PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

- B1.1 ST. JAMES CIVIC CENTRE PARKING LOT REHABILITATION INCLUDING LAND DRAINAGE SYSTEM AND RELATED WORKS – 2055 NESS AVENUE

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, September 2, 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. SITE INVESTIGATION

- B3.1 Further to GC:3.1, the Contract Administrator or an authorized representative will be available at the Site from 10:00 am to 12:00 noon on August 25, 2005 to provide Bidders access to the Site.
- B3.2 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.
- B3.3 Any test holes or test pits made by the Bidders shall be done in accordance with the requirements of the City of Winnipeg. Bidders shall notify the Contract Administrator prior to proceeding with any subsurface investigations.

B4. ENQUIRIES

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

B5. ADDENDA

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

- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet site for addenda shortly before submitting his Bid.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 9 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least three (3) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.

- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.
- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B7. BID SUBMISSION

- B7.1 The Bid Submission consists of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;
 - (c) Form G1: Bid Bond and Agreement to Bond, or
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
a certified cheque or draft;
- B7.2 All components of the Bid Submission shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely in ink, to constitute a responsive Bid.
- B7.3 The Bid Submission shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder’s name and address.
- B7.3.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder’s name and address, and an indication that the contents are part of the Bidder’s Bid Submission.
- B7.4 Bid Submissions submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.5 Bid Submissions shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Branch
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B8. BID

- B8.1 The Bidder shall complete Form A: Bid, making all required entries.
- B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;

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

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

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

B8.4 Paragraph 11 of Form A: Bid shall be signed in accordance with the following requirements:

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

B8.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.

B8.4.2 All signatures shall be original and shall be witnessed except where a corporate seal has been affixed.

B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid Submission and the Contract, when awarded, shall be both joint and several.

B9. PRICES

B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B9.1.3 Notwithstanding GC.12.2.3(c), prices on Form B: Prices shall not include the Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B10. QUALIFICATION

B10.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
- (b) be responsible and not be suspended, debarred or in default of any obligation to the City;
- (c) be financially capable of carrying out the terms of the Contract;

- (d) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract;
- (e) have successfully carried out work, similar in nature, scope and value to the Work;
- (f) employ only Subcontractors who:
 - (i) are responsible and not suspended, debarred or in default of any obligation to the City (a list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>); and
 - (ii) have successfully carried out work similar in nature, scope and value to the portion of the Work proposed to be subcontracted to them, and are fully capable of performing the Work required to be done in accordance with the terms of the Contract;
- (g) have a written workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba);

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

- (a) a valid COR certification number under the Certificate of Recognition (COR) Program - Option 1 administered by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
- (b) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association; or
- (c) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.)

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

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

B11. BID SECURITY

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

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

- B11.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.
- B11.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.
- B11.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B11.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.
- B11.2.1 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.
- B11.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

- B12.1 Bid Submissions will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Branch, or in such other office as may be designated by the Manager of Materials.
- B12.1.1 Bidders or their representatives may attend.
- B12.1.2 Bid Submissions determined by the Manager of Materials, or his designate, to not include the bid security specified in B11 will not be read out.
- B12.2 After the public opening, the names of the Bidders and their Total Bid Prices as read out (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B12.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B12.4 The Bidder is advised that any information contained in any Bid Submission may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B13. IRREVOCABLE BID

- B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 10 of Form A: Bid.
- B13.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 10 of Form A: Bid.

B14. WITHDRAWAL OF BIDS

- B14.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B14.1.1 Notwithstanding GC:23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 11 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B14.1.4 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials shall:
- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
 - (b) open the Bid Submission to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 11 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B14.1.4(b), declare the Bid withdrawn.
- B14.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B13.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

B15. EVALUATION OF BIDS

- B15.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B15.2 Further to B15.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements if the interests of the City so require.
- B15.3 Further to B15.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid Submission or in other information required to be submitted, that he is responsible and qualified.
- B15.4 Further to B15.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B15.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B16. AWARD OF CONTRACT

- B16.1 The City will give notice of the award of the Contract by way of a letter of intent, or will give notice that no award will be made.
- B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.
- B16.2.1 Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B16.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid.

PART C - GENERAL CONDITIONS

C1. GENERAL CONDITIONS

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

C1.1.5 The *General Conditions for Construction Contracts* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of parking lot rehabilitation including a land drainage system and related works for the St. James Civic Centre located at 2055 Ness Avenue.
- D2.2 The major components of the Work are as follows:
- (a) Parking lot reconstruction
 - (b) Internal land drainage sewer system
 - (c) Lighting upgrades

D3. CONTRACT ADMINISTRATOR

- D3.1 The Contract Administrator is:
- Lou Chubenko
Project Officer II
Public Works Department, 100 Main Street
Winnipeg, Manitoba R3C 1A4
Telephone No. (204) 986-7278
Facsimile No. (204) 986-7311
- D3.2 At the pre-construction meeting, the Contract Administrator will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D4. CONTRACTOR'S SUPERVISOR

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

D5. NOTICES

- D5.1 Except as provided for in GC:23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.
- D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3, D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.
- D5.3 All notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:
- The City of Winnipeg
Chief Administrative Officer Secretariat
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: (204) 949-1174
- D5.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:
- The City of Winnipeg
Corporate Services Department
Legal Services Division
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

D6. FURNISHING OF DOCUMENTS

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

SUBMISSIONS

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

D8. INSURANCE

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

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) all inclusive, with The City of Winnipeg being added as an additional insured, with a cross-liability clause, such liability policy to also contain a contractual liability, an unlicensed motor vehicle liability and a products and completed operations endorsement to remain in place at all times during the performance of the Work and throughout the warranty period;
- (b) automobile liability insurance for owned and non-owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- (c) all risks course of construction insurance in the amount of one hundred percent (100%) of the total Contract Price, written in the name of the Contractor and The City of Winnipeg, at all times during the performance of the Work and until the date of Total Performance.

D8.2 Deductibles shall be borne by the Contractor.

D8.3 The Contractor shall provide the City Solicitor with a certificate of insurance of each policy, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.

D8.3.1 The certificate of insurance for the commercial general liability insurance must clearly state "operations to include demolition work".

D8.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator.

D9. PERFORMANCE SECURITY

D9.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

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

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

D9.2 If the bid security provided in his Bid Submission was not a certified cheque or draft pursuant to B11.1(c), the Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.

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 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.

D11. SECURITY CLEARANCE

D11.1 Each individual proposed to perform the following portions of the Work:

(a) Electrical contractor required to perform work within the St. James Civic Centre Building. shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his place of residence.

D11.1.1 The Criminal Records Search shall include a Vulnerable Sector Search.

D11.2 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.

D11.3 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.

D11.4 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.

D11.5 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

D12. COMMENCEMENT

D12.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.

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

- (a) the Contract Administrator has confirmed receipt and approval of:
- (i) evidence that the Contractor is in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
 - (ii) evidence of the workers compensation coverage specified in GC:6.14;
 - (iii) the Safe Work Plan specified in D7;
 - (iv) evidence of the insurance specified in D8;
 - (v) the performance security specified in D9;
 - (vi) the Subcontractor list specified in D10; and

- (vii) the security clearances specified in D11.
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D13. SUBSTANTIAL PERFORMANCE

- D13.1 The Contractor shall achieve Substantial Performance within forty (40) consecutive Working Days of the commencement of the Work as specified in D12.
- D13.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.
- D13.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.
- D13.4 The Contractor shall complete the Work in the time specified in the Contract. In the event of delays of completion as a result of circumstances, which are beyond the control of the Contractor, a written request may be submitted to the City requesting an Extension of Contract Time, with an explanation as to the circumstances. The parking lot construction must be completed to finished base course elevation within the Working Days as specified in D13, to ensure parking lot is usable. The decision of the City as to approval of such a request shall be final and binding.

D14. TOTAL PERFORMANCE

- D14.1 The Contractor shall achieve Total Performance within forty five (45) consecutive Working Days of the commencement of the Work as specified in D12.
- D14.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.
- D14.3 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.

D15. LIQUIDATED DAMAGES

- D15.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City two hundred and fifty dollars (\$250.00) per Working Day for each and every Working Day following the day fixed herein for Substantial Performance during which such failure continues.
- D15.2 The amount specified for liquidated damages in D15.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance by the day fixed herein for same.
- D15.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D16. JOB MEETINGS

- D16.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.
- D16.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D17. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D17.1 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

D18. WARRANTY

- D18.1 Notwithstanding GC:13.2, the warranty period shall begin on the date of Total Performance and shall expire two (2) years thereafter unless extended pursuant to GC:13.2.1 or GC:13.2.2, in which case it shall expire when provided for thereunder.
- D18.2 Notwithstanding GC:13.2 or D18.1, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if:
- (a) a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.
- D18.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in GC:13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See D9)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

_____ day of _____, 20____, for:

BID OPPORTUNITY NO. 485-2005

ST. JAMES CIVIC CENTRE PARKING LOT REHABILITATION INCLUDING LAND DRAINAGE SYSTEM
AND RELATED WORKS – 2055 NESS AVENUE

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

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

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

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

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

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

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)**
(See D9)

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 485-2005

ST. JAMES CIVIC CENTRE PARKING LOT REHABILITATION INCLUDING LAND DRAINAGE
SYSTEM AND RELATED WORKS – 2055 NESS AVENUE

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

(Name of Contractor)

(Address of Contractor)

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

Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

- E1.1 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.1.6 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- E1.1.7 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.1.8 Further to GC:2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.2 The following Drawings are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
485-2005-C01	Existing Site/Demolition Plan
485-2005-C02	Proposed Site Plan
485-2005-C03	Grading Plan
485-2005-C04	Land Drainage Sewer Plan
485-2005-C05	Miscellaneous Details
485-2005-E01	Parking Lot Electrical Plan
485-2005-SCD-132A	Removable Steel Bollard

E2. SOILS INVESTIGATION REPORT

- E2.1 Further to GC:3.1, the test holes in Appendix A, and as shown on the drawings, are provided to supplement the Contractor's evaluation of the Site conditions within the repair Work areas. The information is considered accurate at the locations indicated and at the time of the investigation. However, variations in 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.

E3. WATER USED BY CONTRACTOR

- E3.1 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.

E4. SURFACE RESTORATIONS

- E4.1 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.

E5. LAND DRAINAGE SEWER

DESCRIPTION

E5.1 General

- E5.1.1 This Specification shall amend and supplement Specifications CW 2030-R5 and CW 2130-R7.

MATERIALS

E5.2 Bedding and Backfill

- E5.2.1 Bedding and Backfill will be in accordance with Specification CW 2030-R5 with Class 2 Bedding and Backfill used in all pavement areas and Class 4 Bedding and Backfill used in all landscaped areas.

CONSTRUCTION METHODS

E5.3 General

- E5.3.1 Land Drainage Sewers will be installed in a trench in accordance with Clause 3.3 of CW 2130-R7.

MEASUREMENT AND PAYMENT

E5.4 Inlet Control Device

- E5.4.1 Supply and installation of inlet control devices will be included in the payment for "Catch Basins" and no additional payment will be made.

E6. PARKING LOT RECONSTRUCTION

DESCRIPTION

E6.1 General

- E6.1.1 This Specification covers reconstruction of an existing asphalt pavement parking lot and shall amend and supplement Specifications CW 3110-R6, CW 3130, CW 3310-R7, CW 3325-R2, CW 3410-R6, CW 3550-R2 and CW 3710-R4.

MATERIALS

E6.2 Geotextile Fabric

- E6.2.1 Separation/Reinforcement Geotextile Fabric will be supplied in accordance CW 3130 and conform to the Products as listed in Specification CW 3710.

E6.3 Crushed Sub-Base

- E6.3.1 Crushed Sub-Base will have a maximum aggregate size of 150 millimetres and be supplied in accordance with Clause 2.1 of CW 3110-R6.

E6.4 Base Course

E6.4.1 Base Course will be crushed limestone in accordance with Clause 2.2 of CW 3110-R6.

E6.5 Asphalt

E6.5.1 Asphalt material will be Type 1A and will be supplied in accordance with Sections 5 and 6 of CW 3410-R5.

E6.6 Removable Bollard

E6.6.1 Removable Bollard will be in accordance with SCD-132A issued by The City of Winnipeg Planning, Property and Development Department. Asphalt pavement structure will be in accordance with the construction drawings and not as shown on SCD-132A.

E6.7 Sign Post Base

E6.7.1 Sign Post Base will be 150 mm diameter, 4.78 mm HSS filled with concrete as shown on the construction drawings.

E6.8 Sign Posts

E6.8.1 Sign Posts will be 12 gauge galvanized steel posts, 50 mm square, complete with die-cut knockouts 25mm on centre.

E6.9 Signs – all signs will be in accordance with applicable City of Winnipeg By-Laws.

- (i) Fire Lane – No Parking – Airmaster RB-52L, with City By-Law #1322/76 or equivalent approved by Contract Administrator.
- (ii) Stop Sign – Airmaster RA-1, 600mm x 600mm or equivalent approved by Contract Administrator.
- (iii) Parking – Airmaster RB-53 with an appropriate directional arrow to identify the parking row or equivalent approved by Contract Administrator.
- (iv) Handicapped Parking – Airmaster RV-13 or equivalent approved by Contract Administrator.

CONSTRUCTION METHODS

E6.10 General

E6.10.1 Demolition will be as per the construction drawings and as directed by the Contract Administrator. Demolition of existing light standards, light standard foundations and wiring will be by Manitoba Hydro.

E6.10.2 Excavation will be in accordance with Section 3 of CW 3110-R6 and will include excavation from existing ground elevation to proposed sub-grade elevation. 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.

E6.10.3 Sub-grade will be prepared in accordance with Clause 3.3 of CW 3110-R6.

E6.10.4 Sub-Base and Base Course will be placed to the compacted thickness as shown on the construction drawings. Sub-Base and Base Course will be in accordance with Clauses 3.3 and 3.4 of CW 3110-R6

E6.10.5 Asphalt pavement will be placed to the compacted thickness as shown on the construction drawings and in accordance with Specification CW 3410-R5.

- E6.10.6 Construct concrete approach in accordance with SD-232 complete with sidewalk ramps in accordance with SD-229B.
- E6.10.7 Signage will include the sign post base, sign post and a new sign installed in accordance with the construction drawings.
- E6.10.8 Signs Only will include the supply and installation of new signs on existing sign posts in accordance with the construction drawings.
- E6.10.9 Existing Signs will include re-installing signs salvaged during demolition as directed by the Contract Administrator.
- E6.10.10 Salvaged Chain Link Fence will be re-installed in accordance with the construction drawings. The contractor will supply and install new chain link fence as required to make good on damage to the existing chain link fence during salvage and as required to enclose entire length of recycling depot.

MEASUREMENT AND PAYMENT

- E6.11 Demolition
 - E6.11.1 Demolition will not be measured but will be paid for at the Contract Unit Price per single (1) lump sum item for "Demolition", in accordance with this specification, and accepted by the Contract Administrator.
- E6.12 Asphalt Pavement Removal
 - E6.12.1 Removal of existing asphalt pavement will be included in the payment for "Excavation" and no additional payment will be made.
- E6.13 Excavation
 - E6.13.1 Further to Clause 4.3 of CW 3110-R6, the Contractor will be responsible for providing measurement of quantities including field notes of cross-section surveys, for review by the Contract Administrator. Field notes will include surveyors name, date, and description of Work being measured. All notes will be in neat and legible form and will include both raw data and reduced calculation. All surveys will indicate level circuit closures of 10 mm or less.
- E6.14 Base Course
 - E6.14.1 Further to Clause 4.6 of CW 3110-R6, the Contractor will be responsible for providing measurement of quantities including field notes of cross-section surveys, for review by the Contract Administrator. Field notes will include surveyors name, date, and description of Work being measured. All notes will be in neat and legible form and will include both raw data and reduced calculation. All surveys will indicate level circuit closures of 10 mm or less.
- E6.15 Removable Bollard
 - E6.15.1 Removable bollards will be measured on a unit basis and paid for at the Contract Unit Price for "Bollards". The amount to be paid for will be the total number of bollards installed in accordance with this specification, and accepted by the Contract Administrator.

E6.16 Signage

E6.16.1 Signage will be measured on a unit basis and paid for at the Contract Unit Price for "Signage". The amount to be paid for will be the total number of signage installed in accordance with this specification and accepted by the Contract Administrator.

E6.17 Signs Only

E6.17.1 Signs Only will be measured on a unit basis and paid for at the Contract Unit Price for "Signs Only". The amount to be paid for will be the total number of signs only installed in accordance with this specification and accepted by the Contract Administrator.

E6.18 Existing Signs

E6.18.1 Existing Signs will be measured on a unit basis and paid for at the Contract Unit Price for "Existing Signs". The amount to be paid for will be the total number of signs re-installed in accordance with this specification and accepted by the Contract Administrator.

E6.19 Chain Link Fence

E6.19.1 Chain Link Fence will be measured on a length basis and paid for at the Contract Unit Price for "Chain Link Fence". The amount to be paid for will be the total number of lineal metres installed in accordance with this specification and accepted by the Contract Administrator.

E6.20 Line Painting

E6.20.1 Line Painting will not be measured but will include all line painting and handicap parking stall symbols and will be paid for at the Contract Unit Price per single (1) lump sum item for "Line Painting", in accordance with this specification, and accepted by the Contract Administrator.

E6.21 Concrete Approach

E6.21.1 Concrete Approach will not be measured but will be paid for at the Contract Unit Price per single (1) lump sum item for "Concrete Approach" installed in accordance with this specification, and accepted by the Contract Administrator.

E7. DITCH CONSTRUCTION

DESCRIPTION

E7.1 General

E7.1.1 This Specification covers construction of a drainage ditch and shall amend and supplement Specifications CW3010-R4, CW 3170-R3, CW 3510-R7, CW 3520-R5 and CW 3540-R2.

CONSTRUCTION METHODS

E7.2 General

E7.2.1 Remove bush as directed by Contract Administrator to facilitate ditch construction.

- E7.2.2 Excavation will consist of topsoil excavation and common excavation in accordance with Section 9 of CW 3170-R3. Topsoil will be stockpiled and salvaged for re-use on the constructed ditch. Location of topsoil stockpile to be approved by Contract Administrator.
- E7.2.3 Excavate to line, grade and cross-section as shown on the Construction Drawings and as approved by the Contract Administrator.

MEASUREMENT AND PAYMENT

E7.3 General

- E7.3.1 Ditch construction will be measured on a length basis and paid for at the contract unit price per lineal metre for "Ditch Construction". The length to be paid will be the total number of lineal metres graded in accordance with this specification, accepted and measured by the Contract Administrator. Bush removal will be included in the payment for "Ditch Construction" and no additional payment will be made.

E8. ELECTRICAL

DESCRIPTION

E8.1 General

- E8.1.1 Submit to Electrical Inspection Department and supply Authority necessary number of plans and specifications for examination and approval prior to commencement of Work.
- E8.1.2 Notify Contract Administrator of changes required by Electrical Inspection Department prior to making changes.
- E8.1.3 Pay fees such as for permits, licences, temporary utility service, or any other requirements to perform the Work herein.
- E8.1.4 The Contractor shall examine all plans and specifications. Ensure all required Work to be carried out by other trades to suit electrical (e.g. placement of housekeeping pads), is shown on the appropriate drawings. Ensure all Work of an electrical nature indicated in other than electrical documents is included. Ensure that all electrical Work noted throughout plans and specifications is included in the bid price. Any discrepancy between drawings shall be identified to the Contract Administrator prior to close of bidding, in as timely a fashion as possible.
- E8.1.5 Plans do not indicate all construction details. Any installation involving accurate measurements of the building shall be co-ordinated with construction plans and/or actual on site measurements.
- E8.1.6 Plans and specifications are intended to supplement each other, and any information indicated on one and omitted on the other shall be assumed as included on both.
- E8.1.7 In order to provide sufficient detail and clarity, the symbols used for various electrical devices, occupy more space on the plans, than the device actually occupies when installed. The Contractor shall use common sense when placing devices, ensuring that devices are grouped wherever possible. Do not space devices along walls to coincide with the scale location of the electrical device symbol.
- E8.1.8 Any discrepancies in the plans and/or specifications shall be brought to the attention of the Contract Administrator no later than (7) days prior to the closing date of the tender.

- E8.1.9 The terms "Approved Manufacturer" and "Approved Product" and their respective type or catalogue number as the basis of design, is to establish the construction features, sizes, quality, and accessories of an item of equipment in addition to the characteristics specified. Requests for Equivalents may be granted on the basis described herein.
- E8.1.10 Where a product catalogue number and specified features, sizes, quality or accessories are not in agreement, the Contractor shall contact the Contract Administrator for clarification of the requirements.
- E8.1.11 Acceptance of equivalent products will be granted on the basis of the manufacturer and general design only. It shall be conclusively assumed that the individual, or firm, requesting the acceptance of the substitute product, certifies that the substitute will adequately perform the functions called for by the general design plans and associated specifications, be similar and of equal 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 Schedule of Work and Completion Date(s). Furthermore, in the event that the substitute product is accepted, any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the requested substitute, as well as any cost or time impacts that may be associated with the substitute, shall be the responsibility of the individual or firm requesting approval of the substitute product.
- E8.1.12 Where equipment manufacturer has been identified in the bid, substitutions will be subsequently permitted only where it can be shown that unusual or unforeseen circumstances will cause unacceptable delays in completion of the work. The onus will be on the Contractor to ensure that no delays are caused through the use of substitutes. No substitutions shall be made without review and acceptance by the Contract Administrator.
- E8.1.13 Materials and equipment to be purchased from a Canadian supplier (sales representative) whose sales region includes the project's location.
- E8.1.14 Equipment and materials shall be CSA certified and conform to EEMAC standards. Where there is no alternative to supplying equipment, which is not CSA certified, obtain special approval from Electrical Inspection Department.
- E8.1.15 Submit shop drawings, product data and samples. Indicate details of construction, dimensions, capacities, weights and electrical performance characteristics of equipment or material. Where applicable, include wiring, single line and schematic diagrams. Include diagrams or plans, showing interconnection with other sections. Provide supplier contact information, including firm and individual name and telephone number, relevant to any equipment to be supplied.
- E8.1.16 During construction, the Contractor shall make any equipment or wiring accessible for review purposes, as requested by the Contract Administrator.
- E8.1.17 Operate all manual devices, whether mounted on a control panel or separately mounted. With device in "off" position (or stop button depressed), check that no other device can cause that equipment to run. Check all automatic sequences including alternators, safety lock out circuits and interlocks between equipment. Operate all pressure switches, level switches, thermal switches, limit switches and similar devices to prove sequence of complete circuit.
- E8.1.18 When the Contractor is satisfied that the Work is completed, and after making his own inspection of Work to verify completion, the Contractor shall submit a written request to the Contract Administrator requesting a review of Work. Any deficiencies noted by the Contract Administrator during the review of Work, will be listed by the Contract

Administrator, and issued to the Contractor. Such deficiencies shall be corrected within three (3) weeks of the issuance of the deficiency list, or by a mutually agreed upon date. Once complete, the Contractor shall submit a written request to the Contract Administrator requesting a final deficiency review. If subsequent site visits are required by the Contract Administrator because the deficiencies listed were not complete, all time and expense costs incurred by the Contract Administrator will be the responsibility of the Contractor.

- E8.1.19 Submit record plans detailing all Work as built. Obtain one set of solid white prints to be used for record Work as actually installed. Record on this set, all changes associated with the Work.
- E8.1.20 Furnish Certificates of Acceptance from authorities having jurisdiction, to Contract Administrator on completion of Work.
- E8.1.21 Furnish manufacturer's certificate or letter confirming that entire installation as it pertains to each system has been installed to manufacturer's instructions.
- E8.1.22 Instruct Contract Administrator and City operating and maintenance personnel in the operation, care, and maintenance of equipment.
- E8.1.23 Submit a written guarantee stating that all materials and workmanship will be free from defects for a period of two (2) years from date of acceptance by the City.

MATERIALS

E8.2 General

- E8.2.1 Provide contactors c/w enclosures as indicated, acceptable manufacturers Cutler Hammer, Square D, Siemens, GE, Allen-Bradley.
- E8.2.2 Provide wiring as indicated. Wiring shall be copper, minimum size #12AWG or as noted for power circuits.
- E8.2.3 Provide conduit as indicated. Minimum size shall be 21mm. Provide expansion fittings for PVC conduits to accommodate earth and structure movements. Provide short lengths of liquid tight flexible metal conduit rated 75C in EMT and RGS conduit runs to accommodate movements or vibration. AC90 cable may be used where indicated or in short lengths for final equipment connections where the cable will be entirely accessible. Use as short a length of AC90 as reasonably practicable.
- E8.2.4 Wood planking used in trenches shall be 38mm X 140mm (2"X6") treated wood. Sand bed shall be nominal 6mm screened sand. Backfill shall be suitable for the area. Meet contract specifications for constructed areas, backfill with original material in suitable locations. Restore disturbed surfaces as required.
- E8.2.5 Identification labels shall be Lamacoid 3mm engraving sheet with black face, white core.

Nameplate Sizes

Size 1	10 x 50 mm - 1 line	3 mm high letters
Size 2	12 x 62 mm - 1 line	6 mm high letters
Size 3	12 x 62 mm - 2 lines	3 mm high letters
Size 4	20 x 75 mm - 1 line	8 mm high letters

Nameplate Sizes

Size 5	20 x 75 mm - 2 lines	6 mm high letters
Size 6	25 x 100 mm - 1 line	12 mm high letters
Size 7	25 x 100 mm - 2 lines	8 mm high letters

- E8.2.6 In Category 1&2 areas all rod, bolts, nuts, washers, screws and miscellaneous hardware for electrical item support shall be 304/316 stainless steel unless otherwise specified. The standard of acceptance shall be Unistrut or equivalent. In Category 1&2 areas all Unistrut channels, angles, brackets, etc shall be 304/316 stainless steel. The Contractor may utilize hot-dipped galvanized after fabrication, for special supports in dry plant areas as approved by the Contract Administrator if suitable manufactured supports are not available.
- E8.2.7 Metal enclosure surfaces shall be factory finished by application of rust resistant primer inside and outside, and at least two coats of finish enamel.
- E8.2.8 Lugs, terminals, screws used for termination of wiring shall be suitable for either copper or aluminum conductors.

CONSTRUCTION METHODS

E8.3 General

- E8.3.1 The minimum standard of installation shall be to the Winnipeg Electric Bylaw No. 36/2003, Canadian Electrical Code 2002, National Building Code 1995, Manitoba Building Code, National and Provincial Codes and Bulletins, and specifications herein.
- E8.3.2 Underground systems shall be in accordance with CSA C22.3 No.7-M94 except where noted otherwise.
- E8.3.3 Area classifications shall be as defined by the WEB and the WEB/MEC "Variations to the Diagrams Section of the Code". Areas shall have the greater of the above requirements, or those indicated in the Contract Documents.
- E8.3.4 Maintain wiring phase sequence and colour coding throughout. Colour code to WEB.
- E8.3.5 Manufacturer nameplates and CSA labels shall be visible and legible after installation of equipment.
- E8.3.6 Equipment that is normally mounted at a reachable location in common practice shall be so mounted unless otherwise noted or approved by Contract Administrator.
- E8.3.7 Installation is to be supervised by a journeyman electrician for entire duration of the project.
- E8.3.8 Conceal equipment in finished areas as practicable. Equipment may remain exposed in finished areas where indicated or where approved by Contract Administrator and City. Equipment that shall remain visible in finished areas shall be finished to match or as required for desired appearance. Paint conduit, couplings, fasteners, boxes, etc. prior to installation.
- E8.3.9 Clean and prime exposed non-galvanized hangers, racks and fastenings to prevent rusting.

- E8.3.10 Clean and touch up surfaces of shop-painted equipment scratched or marred during shipment or installation, to match original paint.
- E8.3.11 Identify electrical equipment with nameplates mechanically attached with self-tapping screws. Wording on nameplates to be approved by Contract Administrator prior to manufacture. Allow for average of twenty-five (25) letters per nameplate. Identification to be English. Nameplates for terminal cabinets and junction boxes to indicate system, i.e. "power", "controls", "instrumentation", "lighting", etc. For lighting circuits and small power 120 Volt circuits, list panel and circuit numbers on the name plate. On disconnects, starters and contactors, indicate equipment being controlled and voltage source. On control cabinets indicate system and voltage. On transformers indicate capacity, primary and secondary voltages, and source by panel/circuit number. On receptacles indicate panel and circuit number (eg. AB-24, for circuit 24 in panel AB). Where voltage is other than 120 Volts, include voltage and phases on label (eg. 600V/3 ϕ). On toggle switches for lighting and small loads indicate panel and circuit number as for receptacles. Indicate the load being switched where it is not immediately obvious (eg. roof mounted fan). On junction / pull boxes indicate the load, circuit number (if applicable) or tag number, as required. For all components not required to be labelled by division 14, or 15, provide lamacoid labels as above. Identify tag name complete with loop number. Nameplate shall be sized for adequate legibility or according to size table where size is indicated.
- E8.3.12 Identify wiring with permanent indelible identifying markings, either numbered or coloured plastic tapes, on both ends of phase conductors of feeders and branch circuit wiring and in junction/pull boxes. Label all wires securely with circuit number or tag numbers in the control panel, junction boxes, and pull boxes.
- E8.3.13 Install conduit and sleeves prior to pouring of concrete. Where plastic sleeves are used in fire rated walls or floors, remove before conduit installation and firestop wall or floor with approved firestopping. Installation of PVC conduit in the hot air flow from heating units shall be avoided.
- E8.3.14 Buried conduit shall be centered horizontally and vertically in sand bed. Wood planking shall be used to cover buried conduit. Marking tape buried to a depth equal to half the trench depth shall be used to indicate the location of the buried conduit. Provide painted lath stakes or other suitable temporary markers to delineate trench during construction to prevent inadvertent damage to conduit. Coordinate trenching and backfill. Provide dimensioned trench layouts on as-built drawings that reference locations of at least two permanent stable visible structures.
- E8.3.15 Firestopping shall be installed where a conduit, wire, cable, cable tray, recessing opening or other penetration is made in a smoke separation, fire separation, firewall, ceiling or floor. The firestop must be ULC approved, installed as part of a ULC approved system, and meet CAN4-5115-M. The use of concrete, mortar, grout, gyprock etc. is not approved. Firestopping shall not shrink or crack or be made of such materials which cannot be easily disposed of. In addition, it shall not burn, melt or release toxic fumes when exposed to heat. The firestop shall be suitable for the ambient temperature and humidity that it will be normally exposed to. The firestop shall be ULC approved for site conditions (e.g. identical wall construction and conduit/cable/cable tray type). All firestopping shall be water resistant when located in damp or wet areas, in Category 1 or 2 areas, below mechanical pipes, in sprinklered areas, where condensation may occur, or where other sources of dripping, splashing or spraying water may be present. Firestop for single conductor cable penetrations shall have low conductivity after curing to minimize sheath currents. Fire stop shall be installed to manufacturers recommendations. Firestopping must be of one manufacturer throughout project. Approved manufacturers: Specseal, 3M.

- E8.3.16 Assist other divisions of this Contract by operating control devices and checking performance of the related electrical systems, as required for commissioning of that division's equipment.
- E8.3.17 Ensure circuit protective devices such as over current trips, relays and fuses are installed to required values and settings.
- E8.3.18 Megger test circuits, feeders and equipment up to 350 V utilizing a 500 V instrument. Megger test 350-600 V circuits, feeders and equipment with a 1000 V instrument. Check resistance to ground before energizing. Provide instruments, meters, equipment and personnel required to conduct tests during and at conclusion of project. Submit test results for Contract Administrator's review.
- E8.3.19 At time of final cleaning (after all construction is complete and floors have been swept), clean lighting reflectors, lenses, and other surfaces that have been exposed to construction and dirt. Clean inside and out, panelboards, splitters, and switchboards, exposed to construction.

MEASUREMENT AND PAYMENT

E8.4 Electrical Work

- E8.4.1 Electrical Work will not be measured but will be paid for at the Contract Unit Price per single (1) lump sum item for "Electrical Work", installed in accordance with this specification, and accepted by the Contract Administrator.

APPENDIX 'A'
GEO TECHNICAL REPORT

ST. JAMES CIVIC CENTRE

**GEOTECHNICAL REPORT FOR
ASPHALT PAVEMENT RESURFACING**

2055 NESS AVENUE, WINNIPEG

Prepared for:

**City of Winnipeg
Public Works Department
Winnipeg, Manitoba**

**City Project No.: 40993
CEL Project No.: WE 05 047 00 WE**

June 2005



COCHRANE ENGINEERING LTD.

**600 – 5 DONALD STREET
WINNIPEG, MB R3L 2T4**

ENGINEERS, SCIENTISTS & PROJECT MANAGERS

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Appendix A - Site Plan

Appendix B - Testhole Logs

Appendix C – Laboratory Test Results

1.0 SUMMARY

A pavement investigation was conducted for the proposed Asphalt Pavement reconstruction of the south, east and north parking lots of the St. James Civic Centre to assess the general subsurface conditions. It was requested that pavement recommendations designed to heavy-duty and light-duty parking lot standards for the proposed Asphalt Pavement Reconstruction be provided. Fourteen testholes drilled to 3.05m depth revealed a general soil profile consisting of a layer of an average 50mm asphalt over an average of 250mm granular fill consisting of either limestone or granular (A-base) fill followed by 150mm to 1m of clay fill (average is about 300mm) over a 150 to 600mm of grey-black clay. This thin clay layer was followed by an olive-grey silt layer in some testholes that ranged from 150 to 600mm over the lower brown, stiff clay which extended to the depth explored at 3m below grade. The clay fill and the silt layers are sporadic which means, not uniform layer. Moist conditions were observed from the silt layers.

Based upon the subsurface conditions encountered, the pavement recommendations for light duty and heavy-duty traffic at the proposed Asphalt Overlay is discussed in Section 6 of this report.

2.0 INTRODUCTION

2.1 SCOPE OF WORK

As part of our Engineering Services Proposal, a subsurface investigation was conducted for the proposed Asphalt Pavement Reconstruction of the south, east and north parking lots of the St. James Civic Centre, 2055 Ness Avenue, Winnipeg. The purpose of this work was to establish the soil and groundwater conditions at the site and provide pavement recommendations as well as comments on potential problems. Authorization to proceed with the work was provided by Mr. Lou Chubenko of the City of Winnipeg.

2.2 EXISTING PARKING LOTS

The existing parking lots at the south, east and north contain numerous alligator cracks, occasional upheaval and trace of raveling (only at south parking lot). The asphalted west parking lot is in good condition.

3.0 FIELD INVESTIGATION

The field investigation was undertaken on May 13, 2005. A truck-mounted drill rig with a continuous flight auger was used to drill a total of 14 testholes to a depth of 3m below grade. The testhole locations are shown on the site plan (Figure 1) in Appendix A.

The subsoils encountered were visually classified to the full extent in the testhole and representative soil samples were recovered at regular depth intervals. Pocket penetrometer tests were conducted on cohesive soil to determine the approximate unconfined compressive strength and Standard Penetration Testing(SPT) was conducted as well to determine the relative density. In addition, particle size analysis as well as Atterberg limit tests were conducted on representative samples for classification. Any groundwater seepage and sloughing encountered in the testholes were noted.

4.0 FIELD / LABORATORY TESTING

In the field, random pocket penetrometer and SPT testing were conducted in the testhole to determine the strength and relative density of the soil. The average shear strength (C_u) of the subgrade clay is about 50 kPa. In addition, the average SPT(N) blows of the clay fill/grey-black clay (10) followed by silt layer(3) is about 6.5 blows per 0.3m (foot) which translates to at least a CBR number of 1.9 based on a soil strength relationship. Typically, the CBR number obtained at the laboratory for Winnipeg Clay is between 2 and 4. Detailed descriptions of the soil profiles in each testhole are shown on the attached testhole logs, TH1 to TH14 in Appendix B.

Based on particle size analysis, the samples obtained from TH1 at 1m and TH5, 0.8 to 1.2m were classified as clayey silt material, ML and silty clay, CH. Test results are shown in Appendix C.

5.0 SUBSURFACE CONDITIONS

5.1 SOIL PROFILE/GROUNDWATER

The general soil profile revealed an average layer 50mm asphalt over an average of 250mm granular fill consisting of either limestone or granular (A-base) fill followed by 150mm to 1m of clay fill (average is about 300mm) over a 150 to 600mm of grey-black clay. This thin clay layer was followed by an olive-grey silt layer in some testholes that ranged from 150 to 600mm over the lower brown, stiff clay which extended to the depth explored at 3m below grade. The clay fill and the silt layers are sporadic or not in uniform layers. Moist conditions were observed from the silt layers.

6.0 DISCUSSION AND PAVEMENT RECOMMENDATIONS

Under a light duty traffic, an assumption was made that the pavement will be subjected to a much lesser load in terms of average daily traffic (ADT) of 500 car/van traffic at 12-hour usage with 2% light truck traffic, truck factor of 0.39 and a 15 year design. The light duty traffic translates to wheel loads of 3000 kg each for a maximum of 15,000 kg. Hence, the Equivalent Single Axle Load (ESAL) for light duty traffic is approximately 26,910.

Based on the SPT test and approximate C_u , the considered value of a Resilient Modulus with an approximate CBR of 1.9 is 10.4 MPa (1520 psi). A CBR of 1.9 was selected since the subgrade (grey-black clay or clay fill) was closely followed by a soft silt layer.

Corresponding calculations for the heavy duty ESAL considering 25 trucks per day, 80% heavy vehicle usage and a truck factor of about 2.39(5-axle tractor semi-trailer with a maximum gross load of 36,500 kg) results in a value of about 261,705 for flexible pavement.

The pavement design was checked with the same subgrade support value and ESALs using AASHTO method. The required structural number (SN) for light duty and heavy duty traffic is 3.19 and 4.58, respectively using a reliability of 85%, overall deviation of 0.5, initial serviceability of 4.2, terminal service of 2.0 and layer coefficients of 0.42 for HMA, 0.14 for granular base and 0.12 for granular subbase preferably limestone.

The recommended pavement construction at this site should be as follows:

Pavement Structure

	Light Duty Traffic Thicknesses	Heavy Duty Traffic Thicknesses	% Compaction
Asphalt	50 mm	75 mm	97% Marshall
Base Course	150 mm	175 mm	100% STD Proctor
Subbase	300 mm	400 mm	100% STD Proctor

The granular base course and subbase materials should include organic-free, non-frozen, aggregate conforming to the City of Winnipeg gradation limits (CW 3110). The subbase material is preferably 150 mm crushed max. limestone aggregate. The subgrade (clay fill/clay) should be compacted to 95% STD Proctor Density.

Where soft silt/clay but dry spots are encountered at the subgrade level, construction traffic should be restricted. Soft spots should be covered with geotextile followed by geogrid and the recommended pavement structure. Any saturated subgrade conditions should be dried off quickly by excavation of sump pit or installation of permanent subdrains (600mm below the subgrade level) connected to positive outlet (catch basin) prior to placing the granular fill structure. Otherwise, the procedure of subcutting and replacing with 150mm down crush limestone over a non-woven geotextile with geogrid will be attempted. The depth of the subcut would entirely depend on the saturation of the subgrade. At these locations, the placing of granular fill should follow the geotextile specifications for soft grounds spot.

Sieve analysis and compaction testing of the granular base and subgrade materials should be conducted by qualified geotechnical personnel to ensure that the materials supplied and percent compactions are in accordance with design specifications. For the hot mix asphaltic concrete, gradation analysis of the aggregates (i.e. stone, fines and additive), compaction testing and sampling of at least one representative hot mix asphalt mixture (during

construction) for laboratory Marshall testing should be undertaken. This would provide data to confirm that the asphaltic concrete pavement complies with the project specification. Hot mix asphaltic concrete should not be placed at ambient temperatures lower than +4°C. During placement, the temperature of the paving mix should be in the range of +120°C to +150°C and compaction should not take place at paving mix temperatures lower than +85°C.

7.0 ADDITIONAL CONSIDERATIONS

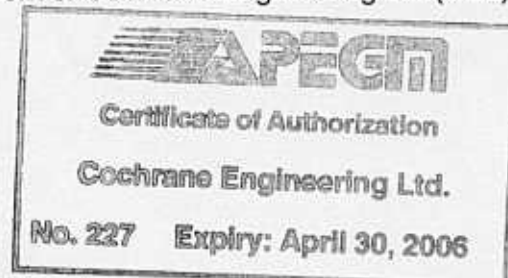
Adequate site drainage should be provided for the proposed Asphalt Reconstruction. For maintenance purposes, it may be necessary to reseal any cracks prior to winter season to minimize the entrance of water to the pavement structure.

8.0 CLOSURE

The findings and recommendations provided in this report were prepared in accordance with generally accepted professional engineering principles and practices. The recommendations are based on the results of field and laboratory investigations. If conditions encountered during construction appear to be different than those shown by the testholes at this site, this office should be notified immediately in order that the recommendations can be reviewed.

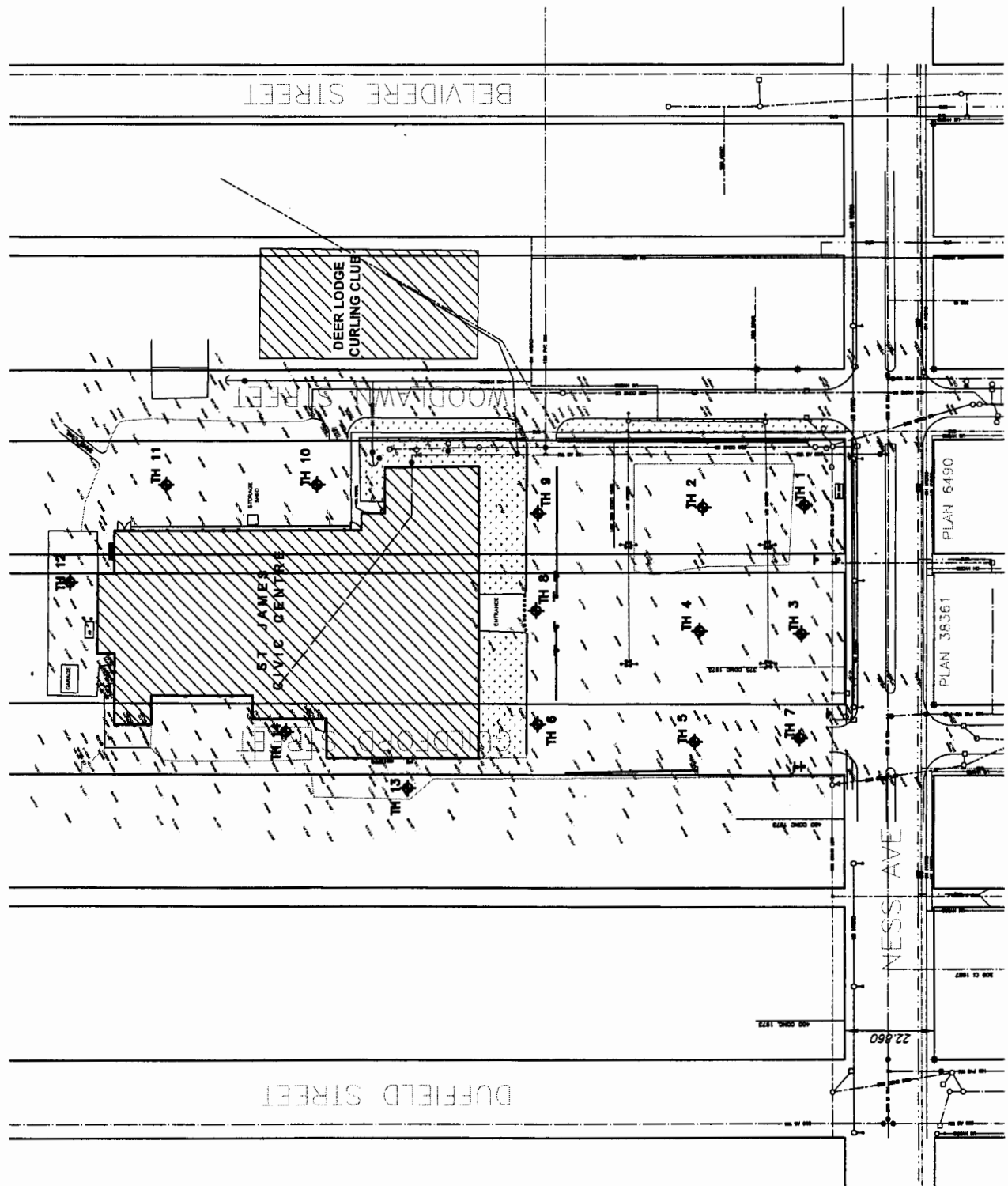
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Prepared by:  Silvestre S. Urbano Jr., P.Eng.



APPENDIX A

Site Plan



COCHRANE ENGINEERING LTD.
 1000 BROADVIEW AVE. SUITE 100
 MISSISSAUGA, ONTARIO L4X 1L3
 TEL: (905) 276-2222
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APENGI
 Ontario Professional Engineer
 Certificate of Authorization
 1000 BROADVIEW AVE. SUITE 100
 MISSISSAUGA, ONTARIO L4X 1L3
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 FAX: (905) 276-2223

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DATE: 05/05/02

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DATE	05/05/02
ISSUED	05/05/02
REVISED	
DATE	
DESCRIPTION	

DATE	05/05/02
ISSUED	05/05/02
REVISED	
DATE	
DESCRIPTION	

ST JAMES CIVIC CENTRE
 PARKING LOT

PROJECT NO: WED05047
 SHEET NO: C101

DATE: 05/05/02

APPENDIX B

Testhole Logs

Project No: WE-05-047-00-WE

Testhole No.: TH1

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE			
Depth ft m	Symbol	Description	Depth/Elev., m	PP(kPa)		SPT, N-VALUE (BLOWS/0.3M)	Water Content % ● Wp 0 Wl ● 20 60 100 140 180 220
				50	150 250 350		
0		Ground Surface	100				
0		GRANULAR FILL					
1		20mm down limestone mixed with some clay				6	
2		CLAY FILL	99.4			8	
2		mixed grey and black clay, trace of fine gravel					
3		CLAY				8	
3		stiff, grey-black, trace of organic					
4		SILT					
4		olive-grey, moist to wet, trace of clay					
6		CLAY					
6		stiff, brown, fissured; silty at 1.8 to 2m.					
7		TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.					
10			97				
10		End of Testhole					
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH1

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE		
Depth ft m	Symbol	Description	Depth/Elev.,m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	Water Content %
				50 150 250 350		Wp 0 Wl 20 60 100 140 180 220
0		Ground Surface	100			
0		GRANULAR FILL				
1		20mm down limestone mixed with some clay			6	
2		CLAY FILL	99.4		8	
2		mixed grey and black clay, trace of fine gravel				
3		CLAY			8	
3		stiff, grey-black, trace of organic				
4		SILT				
4		olive-grey, moist to wet, trace of clay				
8		CLAY				
8		stiff, brown, fissured; silty at 1.8 to 2m. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.				
15		End of Testhole	95.4			

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH2

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE		Water Content % ● Wp ---0--- Wl ● 20 60 100 140 180 220
Depth	Symbol	Description	Depth/Elev., m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	
0		Ground Surface	100			
0		GRANULAR FILL 20mm down limestone(100mm) followed by 150mm granular base course material	99.7			
1		CLAY FILL mixed grey and black clay, silty				
2						
3						
4			98.8			
5				150		
6		CLAY stiff, olive-grey, fissured; brown below 1.5m; silty at 1.8 to 2m. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.				
7				175		
8						
9						
10			97	125		
11		End of Testhole				
12						
13						
14						
15						
16						
17						
18						
19						
20						

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH3

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE		Water Content %
Depth	Symbol	Description	Depth/Elev.,m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	
0		Ground Surface	100			
0		ASPHALT(50mm)	99.7			
1		GRANULAR FILL 20mm down granular base course material				
3		CLAY grey-black, stiff, trace of organic, fissured	99.1			
5		SILT olive-grey, moist to wet, soft; frost from 1.2 to 1.5m	98.5			
7		CLAY frost down to 2.3m, brown; stiff below 2.3m, fissured. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.		150		
10		End of Testhole	97	150		
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH4

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE		Water Content % ● Wp -----0----- Wl ● 20 60 100 140 180 220
Depth	Symbol	Description	Depth/Elev., m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	
0		Ground Surface	100			
0		ASPHALT(44mm)	99.7			
1		GRANULAR FILL 20mm down granular base course material	99.4			
2		CLAY FILL grey-black and brown, mixed, trace of fine gravel				
3		CLAY grey-black, trace of organic, stiff; frost from 1 to 2.3m, brown; stiff below 2.3m, fissured. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.				
4						
5						
6						
7				125		
8						
9						
10		End of Testhole	97	75		
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH5

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE			
Depth ft m	Symbol	Description	Depth/Elev.,m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	Water Content % ● Wp ----- WI ● 20 60 100 140 180 220	
				50 150 250 350			
0		Ground Surface	100				
0		ASPHALT(100mm)	99.7				
1		GRANULAR FILL			10		
2		20mm down granular base course material					
3					6		
4		CLAY grey-black, trace of organic, stiff; olive-grey at 0.8m; frost from 1 to 2.1m; brown at 1.8m; stiff below 2.1m, fissured. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.					
5							
6							
7					150		
8							
9							
10			97	75			
11		End of Testhole					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH6

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE		
Depth ft m	Symbol	Description	Depth/Elev.,m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	Water Content % ● Wp 0 Wl ● 20 60 100 140 180 220
				50 150 250 350		
0		Ground Surface	100			
0		ASPHALT(50mm)	99.7			
1		GRANULAR FILL				
2		20mm down limestone base course material	99.2		4	
3		CLAY FILL				
4		grey-black and brown, mixed, trace of fine gravel	98.9		3	
5		SILT				
6		olive-grey, moist to wet, soft, trace of clay				
7		CLAY				
8		olive grey, frost down to 2.1m; brown at 1.5m;				
9		stiff below 2.1m, fissured. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.				
10			97			
11		End of Testhole				
12						
13						
14						
15						
16						
17						
18						
19						
20						

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH7

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE			
Depth	Symbol	Description	Depth/Elev., m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	Water Content %	
0		Ground Surface	100				
0		ASPHALT(125mm)	99.7				
1		GRANULAR FILL 20mm down limestone(75mm) base course material followed by a mixture(150mm) of clay and granular material					
2							
3		CLAY grey-black, stiff, trace of organic; olive grey at 0.6m, silty, soft; frost from 1.1m to 2.1m; brown at 1.2m; stiff below 2.1m, fissured. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.					
4							
5							
6							
7					125		
8							
9							
10			97	75			
11		End of Testhole					
12							
13							
14							
15							
16							
17							
18							
19							
20							

Drill Method: S/S Auger

Cochrane Eng. Ltd.
 #600-5 Donald Street
 Winnipeg, MB.
 R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH8

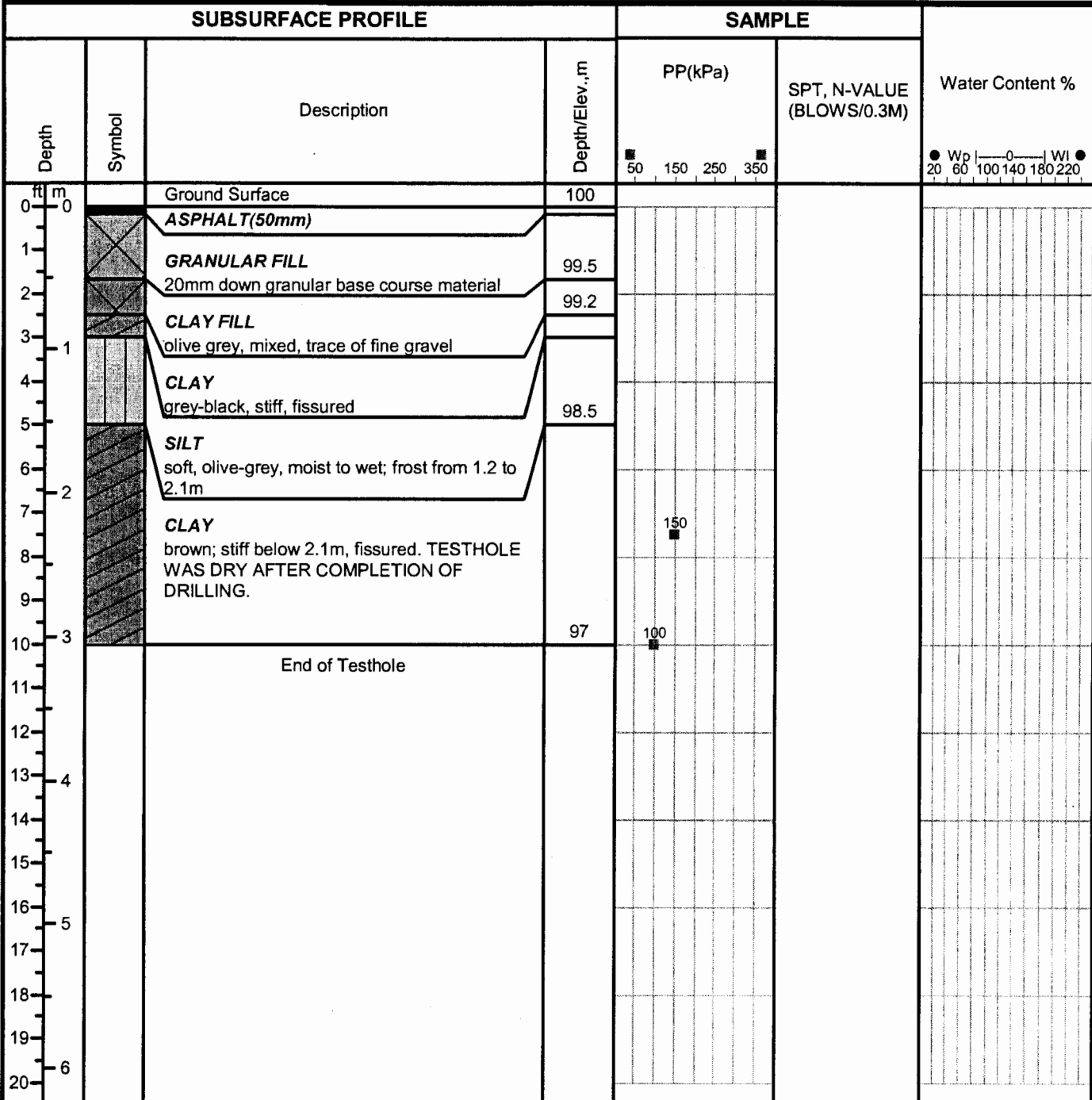
Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU



Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH9

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE		Water Content % ● Wp 0 WI ● 20 60 100 140 180 220
Depth	Symbol	Description	Depth/Elev., m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	
0		Ground Surface	100			
		ASPHALT(50mm)	99.7			
1		GRANULAR FILL 20mm down granular base course material				
2		CLAY FILL olive grey and grey-black, mixed, trace of fine gravel and silt material	99.1			
3		CLAY 50mm of grey-black clay, stiff; olive grey at 1m, silty, firm; frost from 1.2 to 2.1m; brown at 1.5m; stiff below 2.1m, fissured. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.				
4						
5						
6						
7					125	
8						
9						
10		End of Testhole	97	100		
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH10

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE		
Depth	Symbol	Description	Depth/Elev.,m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	Water Content %
				■ 50 150 250 350		● Wp 0 WI ● 20 60 100 140 180 220
0		Ground Surface	100			
0		ASPHALT(75mm)				
1		GRANULAR FILL				
2		20mm down limestone base course material	99.2			
3		CLAY FILL				
4		olive grey and grey-black, mixed, trace of fine gravel and silt material				
5		CLAY				
6		grey-black, trace of organic, stiff				
7		SILT	98.2			
8		olive grey, soft, wet		150		
9		CLAY				
10		frost down to 2.1m, olive grey, silty; brown at 1.8m; stiff below 2.1m, fissured. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.				
11			97	100		
12		End of Testhole				
13						
14						
15						
16						
17						
18						
19						
20						

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH11

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE		
Depth	Symbol	Description	Depth/Elev., m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	Water Content %
0		Ground Surface	100			
0		ASPHALT(50mm)				
1		GRANULAR FILL	99.6			
2		20mm down limestone base course material	99.4			
3		CLAY FILL				
4		olive grey and grey-black, mixed, trace of fine gravel and silt material				
5		CLAY				
6		grey-black, trace of organic, stiff	98.3			
7		SILT				
8		olive grey, soft, wet; frost at 1.1m; clayey at 1.2 to 1.4m		100		
9		CLAY				
10		frost down to 2.1m, olive grey; brown at 1.8m; stiff below 2.1m, fissured. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.	97	75		
11		End of Testhole				
12						
13						
14						
15						
16						
17						
18						
19						
20						

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH12

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE		Water Content %
Depth	Symbol	Description	Depth/Elev.,m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	
0		Ground Surface	100			
0		ASPHALT(37.5mm)				
1		GRANULAR FILL	99.5			
2		20mm down limestone base course material; slight seepage at layer's base	99.2			
3		CLAY FILL				
4		olive grey and grey-black, mixed, trace of fine gravel and silt material				
5		CLAY	98.3			
6		grey-black, trace of organic, stiff				
7		SILT		100		
8		olive grey, soft, wet; frost at 1m; tan-brown at 1m				
9		CLAY				
10		frost down to 2.1m, olive grey; brown at 1.8m; stiff below 2.1m, fissured. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.	97	75		
11		End of Testhole				
12						
13						
14						
15						
16						
17						
18						
19						
20						

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH13

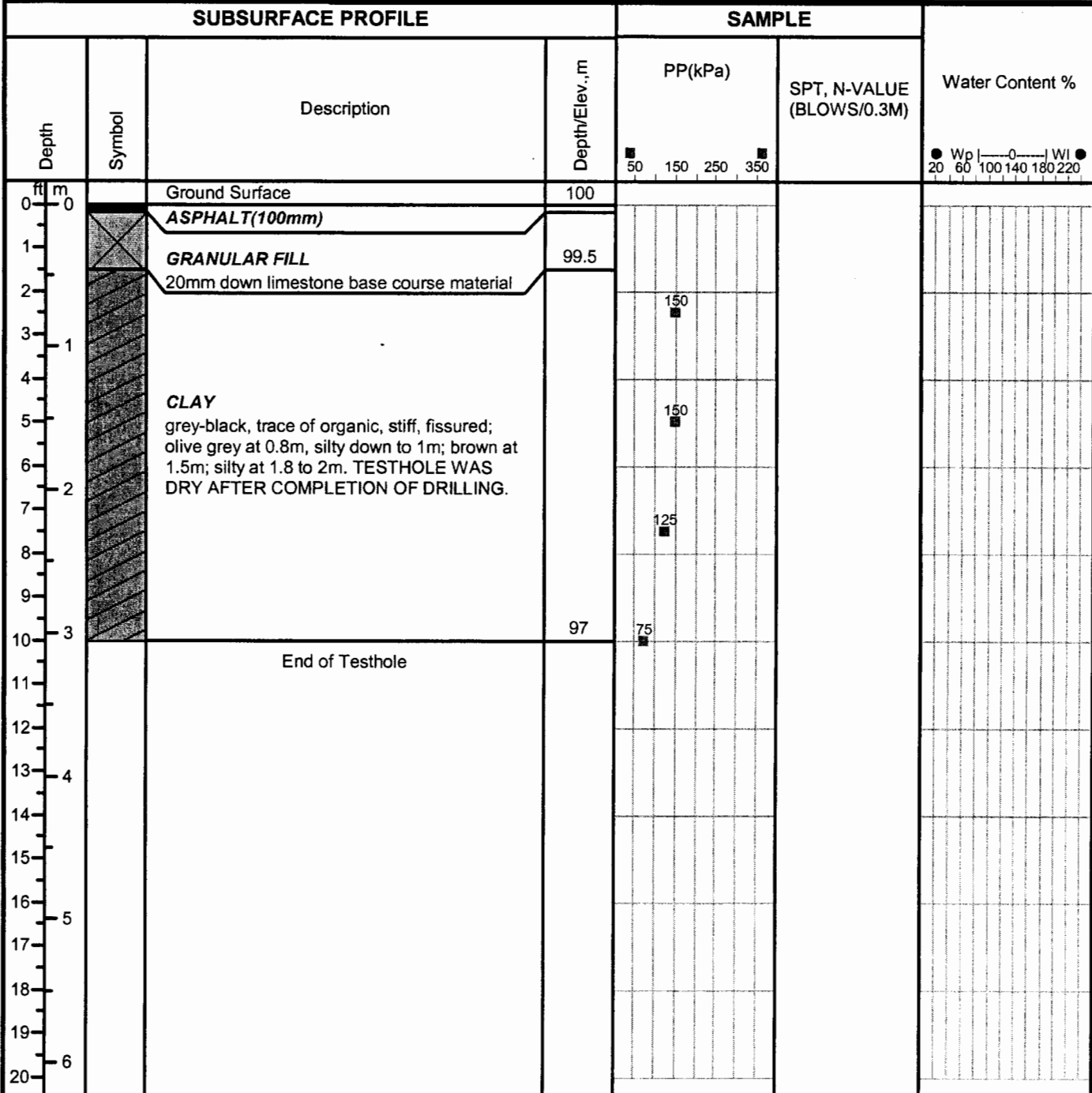
Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU



Drill Method: S/S Auger

Cochrane Eng. Ltd.
 #600-5 Donald Street
 Winnipeg, MB.
 R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

Project No: WE-05-047-00-WE

Testhole No.: TH14

Project: St. James Civic Centre

Client: City of Winnipeg

Enclosure:

Location: 2055 Ness Avenue, Winnipeg

Engineer: SSU

SUBSURFACE PROFILE				SAMPLE		Water Content %
Depth	Symbol	Description	Depth/Elev., m	PP(kPa)	SPT, N-VALUE (BLOWS/0.3M)	
0		Ground Surface	100			
0		GRANULAR FILL 20mm down limestone base course material	99.7			
1		CLAY grey-black, trace of organic, stiff, fissured; olive grey at 0.8m, silty down to 1m; frost from 1.2 to 2.1m; brown at 1.8m; stiff below 2.1m. TESTHOLE WAS DRY AFTER COMPLETION OF DRILLING.				
2						
3						
4						
5						
6						
7					150	
8						
9						
10				97	100	
11		End of Testhole				
12						
13						
14						
15						
16						
17						
18						
19						
20						

Drill Method: S/S Auger

Cochrane Eng. Ltd.
#600-5 Donald Street
Winnipeg, MB.
R3L 2T4

Elevation: 100.0 (Assumed)

Drill Date: 05/13/05

Checked by: SSU

Hole Size: 125mm

Sheet: 1 of 1

APPENDIX C

Laboratory Test Results



199 Henlow Bay
Winnipeg, MB R3Y 1G4
Phone (204) 488-6999
Fax (204) 488-6947
Email info@nationaltestlabs.com
www.nationaltestlabs.com

Cochrane Engineering Ltd.
600-5 Donald Street
Winnipeg, Manitoba
R3L 2T4

May 30, 2005

Project: St. James Civic Centre
(COC-506)

Attention: Silvestre Urbano

Soil samples were submitted to our laboratory on May 24, 2005. The following tests were conducted on selected soil samples as requested by the client:

- water content (ASTM D2216)
- particle size analysis (ASTM D422)

The test results are provided in the attached tables.

Please call if you have any questions regarding this report.

Prepared by:

Robert Brown,
Environmental and Geotechnical
Engineering Services

Reviewed by:

Rob Hochkovich, C. Tech.,
Project Manager,
Environmental and Geotechnical
Engineering Services



**TABLE 1
ST. JAMES CIVIC CENTRE
WATER CONTENT TEST DATA**

Sample Identification	Water Content, %
TH1, 2.5'	31.4
TH1, 3'	19.0
TH1, 5'	31.8
TH1, 10'	55.3
TH2, 2.5'	23.1
TH3, 2.5'	37.1
TH5, 1'-2.5'	14.7
TH5, 2.5'-4'	28.7
TH5, 10'	41.5

Note:

1. Tests conducted in accordance with ASTM D2216.

**TABLE 2
ST. JAMES CIVIC CENTRE
PARTICLE SIZE ANALYSIS TEST DATA**

Sample Identification	Gravel, % 75 to 4.75 mm	Sand, %			Silt, % <0.075 to 0.005 mm	Clay, % < 0.005 mm	Colloids, % < 0.001 mm
		Coarse <4.75 to 2.0 mm	Medium <2.0 to 0.425 mm	Fine <0.425 to 0.075 mm			
TH1, 3'	11.2	2.6	3.7	12.4	43.5	26.6	20.0
TH5, 2.5'-4'	0.0	0.5	1.3	3.1	18.2	76.9	68.1

Notes

1. Test conducted in accordance with ASTM D422.
2. A high speed stirring device was used for 1 minute to disperse the test sample.
3. The percentage of colloids is also included in the clay size fraction.