



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 132-2006

ALEXANDER/BANNATYNE COMBINED SEWER RELIEF CONTRACT 2A

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PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

B1.1 ALEXANDER/BANNATYNE COMBINED SEWER RELIEF CONTRACT 2A

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, March 29, 2006.

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

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

B3. SITE INVESTIGATION

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

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

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

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

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

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

B5. ADDENDA

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

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

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

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

B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

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

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

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

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

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

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

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

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

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

B6.8 If the Contract Administrator approves a substitute as an "approved alternative", any Bidder bidding that approved alternative 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 12 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
 - (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B8.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.
- B8.4.2 All signatures shall be original and shall be witnessed except where a corporate seal has been affixed.
- B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid Submission and the Contract, when awarded, shall be both joint and several.

B9. PRICES

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

B10. QUALIFICATION

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

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

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

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

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

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

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

B11. BID SECURITY

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

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

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

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

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

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

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

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

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

B12.1.1 Bidders or their representatives may attend.

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

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

B12.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

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

B13. IRREVOCABLE BID

B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.

B13.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

B14. WITHDRAWAL OF BIDS

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

B14.1.1 Notwithstanding 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 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials shall:

- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
- (b) open the Bid Submission to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
- (c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Bid withdrawn.

B14.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B13.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

B15. EVALUATION OF BIDS

B15.1 Award of the Contract shall be based on the following bid evaluation criteria:

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

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

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

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

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

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.

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of the construction of storm relief sewers, combined sewers, overflow manholes and a pre-cast aqueduct undercrossing in the Alexander/Bannatyne Combined Sewer Districts in accordance with the applicable Specifications and Drawings.
- D2.2 The major components of the Work are as follows:
- (a) Construction staging to accommodate traffic flows.
 - (b) Construction of approximately 1200m of storm relief sewers ranging in size from 375mm to 1050mm diameter by trenchless methods.
 - (c) Construction of several overflow/weir manholes.
 - (d) Construction of a storm relief sewer under the Branch 1 Aqueduct.
 - (e) Abandonment of existing catchbasin connections to the combined sewers.
 - (f) Rehabilitation of existing catchbasins and installation of new catchbasins and connections to the storm relief sewers and/or combined sewers.
 - (g) Surface restorations and related works.

D3. DEFINITIONS

- D3.1 Notwithstanding GC:1.1, when used in this Bid Opportunity:
- (a) "NSF" means National Sanitation Foundation
 - (b) "ANSI" means American National Standards Institute.

D4. CONTRACT ADMINISTRATOR

- D4.1 The Contract Administrator is Engineering Ltd., represented by:
- Andy Nagy
Senior Project Engineer
1479 Buffalo Place, Winnipeg, Manitoba R3T 1L7

Telephone No. (204) 284-0580
Facsimile No. (204) 475-3646

- D4.2 At the pre-construction meeting, Mr. Nagy will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D5. CONTRACTOR'S SUPERVISOR

- D5.1 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.

D6. NOTICES

- D6.1 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.
- D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3, D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D4.1.
- D6.3 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

- D6.4 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

D7. FURNISHING OF DOCUMENTS

- D7.1 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

D8. SAFE WORK PLAN

- D8.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.
- D8.2 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>.

D9. INSURANCE

- D9.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) all inclusive, with The City of Winnipeg and UMA Engineering Ltd. 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;
- D9.2 Deductibles shall be borne by the Contractor.
- D9.3 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.
- D9.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator.

D10. PERFORMANCE SECURITY

- D10.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:
- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or
 - (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
 - (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.
- D10.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D10.2 If the bid security provided in his Bid 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.

D11. SUBCONTRACTOR LIST

D11.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.

D12. SECURITY CLEARANCE

D12.1 Each individual proposed to perform Work under the Contract shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his place of residence.

D12.2 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.

D12.3 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.

D12.4 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.

D12.5 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.

D13. DETAILED WORK SCHEDULE

D13.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.

D13.2 The detailed work schedule shall consist of the following:

- (a) a critical path method (C.P.M.) schedule for the Work;
- (b) a Gantt chart for the Work based on the C.P.M. schedule; all acceptable to the Contract Administrator.

D13.3 Further to D13.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:

- (a) Commencement Date;

- (b) Storm relief sewers and appurtenances on:
 - (i) Sherbrook St. – Stage I – 11 Weeks.
 - (ii) Sherbrook St. – Stage II – 5 Weeks.
 - (iii) Sherbrook St. and Logan Ave. – Stage III – 4 Weeks.
 - (iv) Ross Ave. – Sherbrook St. to 285m W. of Isabel St.
 - (v) Pacific Ave. – Sherbrook St. to 460m W. of Isabel St.
 - (vi) Reitta St. – Logan Ave. to Henry Ave.
 - (vii) Owena St. – Logan Ave. to 35m S. of Henry Ave.
 - (viii) Gunnell St. – Alexander Ave. to 60m S. of Logan Ave.
 - (ix) Gunnell St. – Logan Ave. to Henry Ave.
 - (x) Alexander Ave. – Bushnell St. to 165m W. of Isabel St.
- (c) Aqueduct Undercrossing – Sherbrook St. at Pacific Ave. (not prior to May 4, 2006)
 - (i) All Critical Stages specified in D16
 - (ii) Shop Drawing Submission for critical, specialized components (e.g. Aqueduct Support Structure, pre-cast pipe)
 - (iii) Delivery to site of specialized components
 - (iv) Commencement of Phase 1 Excavation (not prior to April 27, 2006)
 - (v) Commencement of Phase 2 Excavation (not prior to May 4, 2006)
 - (vi) Installation of 1050mm pre-cast pipe components and appurtenances
 - (vii) Installation of CretexWrap
 - (viii) Sub-Drain Inspection
 - (ix) Incidental restorations
- (d) Surface restorations:
 - (i) Pavement
 - (ii) Sodding
- (e) Substantial Performance;
- (f) Total Performance.

D13.4 Further to D13.2(b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

SCHEDULE OF WORK

D14. COMMENCEMENT

D14.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.

D14.2 The Contractor shall not commence any Work on the Site until:

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

- (iv) evidence of the insurance specified in D9;
 - (v) the performance security specified in D10;
 - (vi) the Subcontractor list specified in D11; and
 - (vii) the security clearances specified in D12.
 - (viii) the detailed work schedule specified in D13
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D14.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.

D15. SCHEDULE RESTRICTIONS

D15.1 Aqueduct Shutdowns

- (a) Aqueduct shutdown periods are scheduled based on a number of factors including routine maintenance and repair work along the Aqueduct, water demand, weather, reservoir operation and other factors. The City shall endeavour to make the specified time periods available to the Contractor to schedule his work requiring removal of the Aqueduct from service, without limiting the City's control over the operation of the Aqueduct to complete other work, maintain adequate water supply and storage of water and maintain the integrity of the infrastructure. The City shall reserve the right to cancel and/or delay these schedule dates at any time, due to any circumstances that could adversely affect the Aqueduct or water supply, including but not limited to high water demand, abnormal weather, failures of related water system components and/or security concerns.
- (b) The Bidder shall note that it is intended that the Branch I Aqueduct be taken out of service and drained from the commencement of Phase 2 excavation, as defined in E7.2.2. However, the Aqueduct pipe must remain in a serviceable condition, ready to receive full Aqueduct flow within 24 hours of receiving written notice.
- (c) The Bidder shall note that portions of the Work underneath the Aqueduct can only be carried out during the time periods of May 4, 2006 to May 16, 2006, unless amended as specified in D15.1(a). The Contractor shall note the following restrictions applicable during this period:
- (i) The Branch I Aqueduct will not be taken out of service unless all precast pipe, precast manholes, fittings and miscellaneous components required to complete the Aqueduct Undercrossing are on site, tested, and pre-fitted, to ensure that the Aqueduct Undercrossing can be completed and the Branch I pipe can be restored to service within the timeframe noted in D16.
 - (ii) The Contractor shall employ 24 hour per day, 7 days per week scheduling during this period, if required to meet Critical Stages specified in D16.

D15.2 Construction Staging

- (a) Stage I – Commence Stage I Construction and any optional construction locations as noted on the drawings.
- (b) Stage II – Stage II construction may not commence prior to full restorations of mandatory Stage I construction; or as approved by the Contract Administrator.
- (c) Stage III – All additional works intersecting Logan Avenue and mandatory Stage II construction must be fully restored prior to Stage III commencement; or as approved by the Contract Administrator. The Contractor shall employ sufficient resources to complete these works in a timely manner and within the approximate duration indicated on the Stage III Construction Staging Drawing (LD-3315).

D16. CRITICAL STAGES

- D16.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) Phase 1 excavation by May 4, 2006.
 - (b) Complete Aqueduct Undercrossing by May 16, 2006.
- D16.2 The dates specified for Critical Stages will be amended accordingly if Aqueduct Shutdown schedule is altered as indicated in D15.1.

D17. WORKING DAYS

- D17.1 Further to GC:1.1(gg), the Contract Administrator's determination of whether or not atmospheric and Site conditions are such that a Working Day is deemed to have elapsed may be based at one time on one type of work while at another time a Working Day may be based on another type of work. When more than one type of major work is involved, the quantity of equipment that must be able to work in order to meet the requirements of a Working Day may vary considerably from that specified in the General Conditions.
- D17.2 In the event that incidental work is behind schedule which, in the opinion of the Contract Administrator, should have been or could have been carried out by the Contractor in conjunction with or immediately following work of a major type, the City hereby reserves the right to charge Working Days on the incidental work until such time as it is up to schedule.
- D17.3 When the major type of work involves restoration of the site to the condition it was prior to rainfall, Working Days shall not be charged.
- D17.4 The Contract Administrator will furnish the Contractor with a daily record for each major type of work showing various information concerning the equipment, the time it worked, could have worked and Working Days charged. This report is to be signed each day by an authorized representative of the Contractor.

D18. WORK BY OTHERS

- D18.1 Further to Clauses GC:6.25 and GC:8.
- D18.2 Work by others on or near the Site will include but not necessarily be limited to:
- (a) Manitoba Telecom Service (MTS) – Relocation of existing services on Logan Avenue at Sherbrook Street. MTS tentative completion date is prior to June 30, 2006.

D19. SUBSTANTIAL PERFORMANCE

- D19.1 The Contractor shall achieve Substantial Performance within one hundred and five (105) consecutive Working Days of the commencement of the Work as specified in D14.
- D19.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.
- D19.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D20. TOTAL PERFORMANCE

- D20.1 The Contractor shall achieve Total Performance within one hundred and twenty (120) consecutive Working Days of the commencement of the Work as specified in D14.
- D20.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.
- D20.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D21. LIQUIDATED DAMAGES

- D21.1 If the Contractor fails to achieve Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the day fixed herein for same during which such failure continues:
- (a) Substantial Performance – one thousand five hundred dollars (\$1,500.00);
 - (b) Total Performance – five hundred dollars (\$500.00)
- D21.2 If the Contractor fails to achieve Critical Stage D16.1(b) in accordance with the Contract within the specified number of working days fixed herein for Critical Stage D16.1(b), the Contractor shall pay the City five thousand dollars (\$5,000.00) per Working Day for each and every Working Day following the day fixed herein for Critical Stage D16.1(b) during which such failure continues.
- D21.3 The amounts specified for liquidated damages in D21.1, D21.2 and D20.3 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance, Total Performance or the Critical Stages by the day and/or date fixed herein for same.
- D21.4 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D22. JOB MEETINGS

- D22.1 Regular bi-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.
- D22.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D23. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D23.1 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).

D24. TRAFFIC CONTROL AND MANAGEMENT

D24.1 Further to Section 3.7 of CW 1130 of the General Requirements the Contractor shall be responsible to redirect and maintain traffic with appropriate signing in accordance with The City of Winnipeg, "Manual of Temporary Traffic Control in Work Areas on City Streets at all times during construction as follows:

- (a) Construction Staging; Stage I (LD-3313) – Maintain traffic signage and routes as indicated on the drawings.
- (b) Construction Staging; Stage II (LD-3314) – Maintain traffic signage and routes as indicated on the drawings.
- (c) Construction Staging; Stage III (LD-3315) – Maintain traffic signage and routes as indicated on the drawings.
- (d) Residential Streets – maintain one lane of traffic at all times.
- (e) Intersecting street and private approach access shall be maintained at all times.

D24.2 Further to Section 3.6 of CW 1130 of the General Requirements, the Contractor shall maintain safe pedestrian crossing at intersections at all times. If possible, only one pedestrian crossing at an intersection is to be blocked by construction at any one time. If more than one pedestrian crossing is blocked by construction at an intersection at the same time the Contractor shall provide flag persons to safely escort pedestrians across the intersection. The Contractor shall leave pedestrian crossing locations safe and free of equipment that may hamper pedestrians when no construction activities are being performed at a particular crossing location.

D24.3 The Contractor shall not park company or private vehicles inside the barricaded Work zone in a manner that will block sightlines for vehicles and pedestrians approaching and crossing intersections.

D25. SITE SECURITY

D25.1 Further to GC 6.27, the Contractor shall provide full time site security, at all times when work crews are not present on the Site, during periods specified in E4.1.1(a). Security personnel provided must be acceptable to the Contract Administrator.

D26. WATER USED ON CITY OF WINNIPEG PROJECTS

D26.1 Further to Section 3.7 of CW 1120, charges incurred for the permits and water meters shall be paid for by the Contractor when taken out. The Contractor shall forward the invoice to the Contract Administrator for reimbursement. The billing for water usage sent to the Contractor shall be forwarded to the Contract Administrator for payment. The Bid Opportunity number shall be noted on each permit.

D27. CONFINED SPACE ENTRY

D27.1 The Contractor's attention is drawn to the Province of Manitoba Workplace Safety and Health Act ("the Act"), and the Regulations and Guidelines there-under pertaining to Confined Entry Work, and in particular the requirements for conducting hazard/risk assessments and providing personal protective equipment (PPE).

D27.2 The Contractor shall provide Supplied Air Breathing Apparatus conforming to the requirements of the Act, Regulations and Guidelines for the use of the Contract Administrator where confined entry is required to allow for inspection of the Work.

WARRANTY

D28. WARRANTY

D28.1 Notwithstanding GC:13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter unless extended pursuant to GC:13.2.1 or GC:13.2.2, in which case it shall expire when provided for thereunder.

D28.2 Notwithstanding GC:13.2 or D28.1, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if:

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

D28.2.1 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 D10)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

_____ day of _____, 20____, for:

BID OPPORTUNITY NO. 132-2006

ALEXANDER/BANNATYNE COMBINED SEWER RELIEF CONTRACT 2A

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 D10)

(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. 132-2006

ALEXANDER/BANNATYNE COMBINED SEWER RELIEF CONTRACT 2A

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
	Cover Sheet
LD-3295	Sherbrook Street – William Avenue to 18m South of Elgin Avenue
LD-3296	Sherbrook Street – 70m North of William Avenue to 25m South of Ross Avenue
LD-3297	Sherbrook Street – 75 North of Elgin Avenue to 20m South of Pacific Avenue
LD-3298	Sherbrook Street – 55m North of Ross Avenue to 85m South of Logan Avenue
LD-3299	Sherbrook Street – 15m North of Alexander Avenue to Logan Avenue
LD-3300	Ross Avenue – Sherbrook Street to 400m West of Isabel Street
LD-3301	Ross Avenue – 80m East of Sherbrook Street to 285m West of Isabel Street
LD-3302	Pacific Avenue – Sherbrook Street to 460m West of Isabel Street
LD-3303	Alexander Avenue – Sherbrook Street to Gwendoline Street
LD-3304	Reitta Street – Logan Avenue to Henry Avenue
LD-3305	Owena Street – Logan Avenue to 35m South of Henry Avenue
LD-3306	Gunnell Street – Alexander Avenue to 60m South of Logan Avenue
LD-3307	Gunnell Street – Logan Avenue to 35m South of Henry Avenue
LD-3308	Gunnell Street – 80m North of Logan Avenue to Henry Avenue
LD-3309	Henry Avenue – Gunnell Street to 90m West of Henry Avenue North
LD-3310	Alexander Avenue – Bushnell Street to 165m West of Isabel Street
LD-3311	Branch I Aqueduct Undercrossing – Pacific Avenue at Sherbrook Street
LD-3312	Manhole 12 Details – Sherbrook at Logan Avenue
LD-3313	Construction Staging – Stage I – 11 Weeks
LD-3314	Construction Staging – Stage II – 5 Weeks
LD-3315	Construction Staging – Stage III – 4 Weeks

E2. SOILS INVESTIGATION REPORT

- E2.1 Further to GC:3.1, Test Hole logs compiled during the design process are attached. The Test Hole logs are provided to supplement the Contractors evaluation of the Site conditions within the Work area. The information is considered accurate at the locations indicated and at the time of the investigation. However, considerable variations in the soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally.

GENERAL REQUIREMENTS

E3. OFFICE FACILITIES

- E3.1 The Contractor shall supply office facilities meeting the following requirements:
- (a) The field office shall be conveniently located near the Site of the Work;
 - (b) The building shall have a minimum floor area of 20 square metres, with window area of 3 square metres and a door entrance with suitable lock satisfactory to the Contract Administrator.
 - (c) The building shall be suitable for all-weather use. It shall be capable of maintaining a temperature range between 16°C and 25°C;
 - (d) The building shall be supplied with adequate lighting and 120 Volt power supply;
 - (e) The building shall be supplied with a local telephone line;
 - (f) The building shall be furnished with one desk, one meeting table, one drafting table, one filing cabinet and six chairs, all satisfactory to the Contract Administrator;
 - (g) A separate toilet with door lock shall be supplied for the Contract Administrator;
 - (h) The field office shall be cleaned weekly immediately prior to the Job Site Meetings to the satisfaction of the Contract Administrator;
 - (i) The provision of the field office with the aforementioned furnishings and equipment shall also include maintenance and removal of the field office, operating costs and any service installation costs.

E4. SITE SECURITY AND SAFETY

E4.1 Security

- E4.1.1 The Contractor shall be responsible for site security and safety, as stated below:
- (a) Provide 24 hour site security personnel during all periods when the Aqueduct is exposed and the Contractor's staff members are not present on Site.
 - (b) Report all Site trespassing or suspicious activity immediately to McPhillips Control Centre at 986-4781.
 - (c) Refrain from providing statements with respect to water supply, Site security or emergency situations to the media. All media inquiries in this regard shall be directed to the City of Winnipeg Customer Services.

E4.2 Safety

- E4.2.1 Be fully responsible for all aspects of Site and public safety, in compliance with D23.
- E4.2.2 Arrange for all required safety watches in the vicinity of buried and overhead hydro utilities, and pay all required safety watch fees.

E5. CONDITION, PROTECTION OF AND ACCESS TO THE AQUEDUCT

E5.1 Condition of the Aqueduct

- E5.1.1 The Branch I Aqueduct is constructed of pre-cast concrete cylinder pipe circa 1919. All Work procedures conducted by the Contractor on and/or near the Aqueduct shall be well planned and executed to ensure that the Aqueduct is not subjected to construction related loads, including excessive vibrations and concentrated or asymmetrical lateral loads during backfill placement.

E5.2 Protection of the Aqueduct

- E5.2.1 Contractors carrying out repair work on the Aqueduct or working in the vicinity of it shall ensure that:
- (a) Equipment shall only be permitted to cross the Aqueduct at designated locations.
 - (b) Granular material, construction material, soil or other material shall not be stockpiled on the Aqueduct or within 5 metres of the Aqueduct centerline.
 - (c) Construction practices shall not subject the Aqueduct to asymmetrical loading at any time.
 - (d) Construction practices or procedures at or near the Aqueduct shall not impart excessive vibration loads on the Aqueduct and/or cause settlement of the subgrade below the Aqueduct.
 - (e) Further to CW 2030, only smooth edged excavation buckets, soft excavation or hand excavation shall be used for excavation adjacent to and over the Aqueduct.
- E5.2.2 It is the Contractors' responsibility to ensure that all work crew members understand and observe the requirements of E5.1 and E5.2. Prior to commencement of on-site work, the Contractor's superintendent, foreman and heavy equipment operators shall attend an orientation meeting that will outline restrictions for working on and around the Aqueduct. Failure to comply with these restrictions will be grounds for removing the offending personnel from the Site.

E6. ENVIRONMENTAL PROTECTION

- E6.1 The Contractor shall be aware that the Branch 1 Aqueduct is for potable water supply and no contamination by fuel, chemicals, etc. shall be permitted at any time. Fuels or chemicals shall not be stored within 30 metres of the Aqueduct.
- E6.2 The Contractor shall plan and implement the Work of this Contract strictly in accordance with the requirements of the environmental protection measures as herein specified.
- E6.3 The Contractor is advised that at least the following Acts, Regulations, and By-laws apply to the Work:
- E6.3.1 Federal
- (a) Canadian Environmental Protection Act (CEPA) c.16
 - (b) Transportation of Dangerous Goods Act and Regulations c.34
- E6.3.2 Provincial
- (a) The Dangerous Goods Handling and Transportation Act D12
 - (b) The Environment Act c.E125
 - (c) The Fire Prevention Act F80
 - (d) The Manitoba Nuisance Act N120
 - (e) The Public Health Act c.P210
 - (f) The Workplace Safety and Health Act W120
 - (g) And current applicable associated regulations.
- E6.4 The Contractor is advised that the following environmental protection measures apply to the Work.

E6.4.1 Materials Handling and Storage

- (a) Construction materials shall not be stored within five (5) metres of the Aqueduct centerline.

E6.4.2 Fuel Handling and Storage

- (a) The Contractor shall abide by the requirements of Manitoba Environment for handling and storage of fuel products.
- (b) All fuel handling and storage facilities shall comply with The Dangerous Goods and Transportation Act Storage and Handling of Petroleum Products Regulation and any local land use permits.
- (c) Fuels, lubricants, and other potentially hazardous materials as defined in The Dangerous Goods and Transportation Act shall be stored and handled within the approved storage areas.
- (d) The Contractor shall ensure that all fuel storage containers are inspected daily for leaks and spillage.
- (e) Products transferred from the fuel storage area(s) to specific work sites shall not exceed the daily usage requirement.
- (f) When servicing requires the drainage or pumping of fuels, lubricating oils or other fluids from equipment, a groundsheet of suitable material (such as HDPE) and size shall be spread on the ground to catch the fluid in the event of a leak or spill.
- (g) Refuelling of mobile equipment and vehicles shall take place at least 100 metres from a watercourse.
- (h) The area around storage sites and fuel lines shall be distinctly marked and kept clear of snow and debris to allow for routine inspection and leak detection.
- (i) A sufficient supply of materials, such as absorbent material and plastic oil booms, to clean up minor spills shall be stored nearby on-site. The Contractor shall ensure that additional material can be made available on short notice.

E6.4.3 Waste Handling and Disposal

- (a) The construction area shall be kept clean and orderly at all times during and at completion of construction.
- (b) At no time during construction shall personal or construction waste be permitted to accumulate for more than one day at any location on the construction site, other than at a dedicated storage area as may be approved by the Contract Administrator.
- (c) Indiscriminate dumping, littering, or abandonment shall not take place.
- (d) No on-site burning of waste is permitted.
- (e) Equipment shall not be cleaned near watercourses; contaminated water from onshore cleaning operations shall not be permitted to enter watercourses.

E6.4.4 Dangerous Goods/Hazardous Waste Handling and Disposal

- (a) Dangerous goods/hazardous waste are identified by, and shall be handled according to, The Dangerous Goods Handling and Transportation Act and Regulations.
- (b) The Contractor shall be familiar with The Dangerous Goods Handling and Transportation Act and Regulations.

E6.4.5 Emergency Spill Response

- (a) The Contractor shall ensure that due care and caution is taken to prevent spills.
- (b) The Contractor shall report all major spills of petroleum products or other hazardous substances with the potential for impacting the environment and threat to human

health and safety to the Contract Administrator and Manitoba Environment, immediately after occurrence of the environmental accident, by calling the 24-hour emergency telephone number (204) 945-4888.

- (c) The Contractor shall designate a qualified supervisor as the on-site emergency response coordinator for the project. The emergency response coordinator shall have the authority to redirect manpower in order to respond in the event of a spill.
- (d) The following actions shall be taken by the person in charge of the spilled material or the first person(s) arriving at the scene of a hazardous material accident or the on-site emergency response coordinator:
 - (i) Notify emergency-response coordinator of the accident:
 - ◆ identify exact location and time of accident
 - ◆ indicate injuries, if any
 - ◆ request assistance as required by magnitude of accident (Manitoba Environment 24-hour Spill Response Line (204) 945-4888, Police, Fire Department, Ambulance, company backup)
 - (ii) Assess situation and gather information on the status of the situation, noting:
 - ◆ personnel on Site
 - ◆ cause and effect of spill
 - ◆ estimated extent of damage
 - ◆ amount and type of material involved
 - ◆ proximity to waterways and the Aqueduct
 - (iii) If safe to do so, try to stop the dispersion or flow of spill material:
 - ◆ approach from upwind
 - ◆ stop or reduce leak if safe to do so
 - ◆ dyke spill material with dry, inert sorbent material or dry clay soil or sand
 - ◆ prevent spill material from entering waterways and utilities by dyking
 - ◆ prevent spill material from entering Aqueduct manholes and other openings by covering with rubber spill mats or dyking
 - (iv) Resume any effective action to contain, clean up, or stop the flow of the spilled product.
- (e) The emergency response coordinator shall ensure that all environmental accidents involving contaminants shall be documented and reported to the Manitoba Environment according to The Dangerous Goods Handling and Transportation Act Environmental Accident Report Regulation 439/87.

E6.4.6 Controlled Products

- (a) Materials classified as "Controlled Products" under Regulation 52/88, "Workplace Hazardous Materials Information System", including amendments, are prohibited inside the Aqueduct, unless the material will be directly employed in the Work.
- (b) Notwithstanding the aforementioned requirement, materials have been tested by an ANSI accredited laboratory and meet the requirements of ANSI/NSF 60, "Standard for Drinking Water Treatment and Chemicals – Health Effects", and ANSI/NSF 61, "Standard for Drinking Water System Components – Health Effects", as specified in the Specifications, shall be permitted inside the Aqueduct.

E7. CONSTRUCTION SEQUENCING AND AQUEDUCT OPERATION

E7.1 Description

E7.1.1 This specification shall generally outline construction sequencing, Aqueduct operation, Aqueduct shutdown and regional water supply criteria.

E7.2 Construction Sequencing for the Aqueduct Undercrossing Construction

E7.2.1 Phase 1 Excavation

- (a) Installation of shoring piles and/or sheet piling at perimeter of the undercrossing excavation.
- (b) Excavation and installation of shoring, walers and bracing to the base of the Branch 1 Aqueduct support cradle (elevation 227.450m, 90 degree bedding angle). Excavation within 0.3 metres of the Aqueduct in any direction shall be completed by hand and/or soft excavation methods. Localized excavation to the proposed bottom of the 1050mm SRS pipe for installation of temporary support footings and columns. Local excavations shall be tight shored and braced.
- (c) Hand tunnelling under the Branch I Aqueduct locally for the installation of temporary support beams, and connection to temporary support columns.
- (d) Uniformly support the 1200mm Aqueduct pipe and existing cradle by placing it in a bed of concrete grout as indicated on the drawings.
- (e) Excavation for purposes of installation of lower excavation shoring, restricted as follows:
 - (i) Maintaining elevation of 227.450m to a point 1.0 metres beyond the outside of the Branch I pipe wall.
 - (ii) Sloped excavation at a maximum slope of 1H:1V to the invert of the proposed pipe bedding.

E7.2.2 Phase 2 Excavation

- (a) Excavation of remaining undercrossing, and installation of remaining shoring and bracing to the bottom of the 1050mm SRS pipe bedding (Elevation 225.735 m). Excavation within 0.6 metres horizontally of the Aqueduct shall be completed by hand or soft excavation methods.

E7.2.3 Installation of 1050mm pre-cast concrete pipe components and appurtenances.

E7.2.4 Installation of CretexWrap at all joints on the 1050mm SRS pipe.

E7.2.5 Backfill with stab fill (CW2030) to the base of the existing concrete Aqueduct cradle (elevation 227.450 m) allowing 24 hours for the stab fill to set.

E7.2.6 Repair/replace any damaged sections of the existing Aqueduct cradle.

E7.2.7 Expose Aqueduct sub-drain to the limits of the excavation.

E7.2.8 Repair any damaged sections of the Aqueduct sub-drain.

E7.2.9 Cut the steel beams of the temporary support structure at each connection point to remove the support load on the Aqueduct.

E7.2.10 Internal video inspection of the Aqueduct sub-drain.

E7.2.11 Complete backfilling and surface restorations.

E7.3 Regional Water Supply

E7.3.1 The Branch I Aqueduct will be taken out of service as indicated in D15.

E8. EXCAVATION, BEDDING AND BACKFILL

E8.1 Aqueduct Shoring

E8.1.1 Excavation shoring shall be designed to accommodate phased excavation, as explained in E7.2. Shoring components, bracing and walers shall be designed to accommodate installation of all pipe and fittings and temporary pipe support structure.

E8.2 Aqueduct Temporary Pipe Support Structure

E8.2.1 The temporary pipe support structure shall be designed by a Professional Engineer, registered in the Province of Manitoba. The support structure design shall be submitted in accordance to Clause 1.5 of CW 1110. The structure shall be designed to the general intent laid out on the drawings, and the minimum design criteria:

- (a) Supports shall be designed to support the weight of the existing pipe and water (service load of 120 KN).
- (b) Beams shall be designed to allow a maximum deflection of not more than 4 mm
- (c) Pipe supports beam shall be a minimum of 300 mm in width, and uniformly support the pipe invert for an included angle of 90 degrees. The pipe shall be uniformly supported by setting the pipe in a bed of grout.
- (d) The existing Aqueduct pipe cradle must be kept in place by field welding metal angles as indicated on the drawings.
- (e) Area of footing pads shall be a minimum of 0.64 m². Footing pads may be square or round.
- (f) Excavation below the invert of the existing pipe for installation of the footing pads shall proceed in a careful manner. The excavation shall be tight shored to prevent undermining of the Aqueduct, and be designed in accordance with specification CW 2030.

E8.2.2 Temporary pipe support structure shall be installed and inspected by the design engineer, prior to proceeding with Phase 2 excavation.

E8.3 Disposal of Unsuitable or Surplus Excavated Material

- (a) If the Contractor has not arranged for an approved disposal site, the City shall provide an optional disposal site for all surplus clean clay from the construction site. The material is not to include any refuse, concrete, metals, wood, organics, construction waste or any other deleterious materials. Any surplus soil material not meeting these requirements shall not be considered clean clay and shall not be permitted.
- (b) The disposal location provided by the City will be at the Summit Road Landfill Site. The Contract Administrator will make arrangements with Colin Potter (986-4463) at the landfill site for the disposal of the surplus soil material.
- (c) There will be no tipping fees charged at the landfill sites to the Contractor for the disposal of surplus soil material meeting the requirements of clean clay as specified.
- (d) Surplus material not meeting the requirements of clean clay may be disposed of at the Brady Road Landfill Site although tipping fees will be charged.
- (e) There shall be no measurement of surplus soil material disposed of at any disposal site. No additional payment will be made for disposal of surplus soil materials. It shall be considered incidental to the cost of the Work.

E8.4 Foundation, Bedding and Backfill

- (a) Type 3 foundations shall be used in all shafts.
- (b) Type 3 bedding and initial backfill shall be used in place of sand in all shafts.

- (c) Shafts located within paved areas of Sherbrook Street, Logan Avenue and William Avenue shall be backfilled with Class 1 backfill as per SD-002.
- (d) Shafts to accommodate a tunnelling or jacking machine shall be constructed with a concrete foundation of sufficient cross section and trueness to adequately support and align the machine during tunnelling operations

E9. CONSTRUCTION OF AQUEDUCT UNDERCROSSING

E9.1 Materials

E9.1.1 Pre-cast Concrete Pipe

- (a) As per City of Winnipeg CW 2130.

E9.1.2 Concrete Mix Design

- (a) Concrete Mix Design as per Table CW 2160, Type A mix.

E9.1.3 Stab Fill

- (a) As per City of Winnipeg CW 2030.

E9.1.4 Backfill

- (a) Class 3 backfill as per City of Winnipeg CW-2030.

E9.1.5 Joint Sealer

- (a) CretexWrap
- (b) Supplied by Deblo Industries Ltd., contact Kurtis Robson (204-334-4477) or approved equal.

E9.2 Construction Methods and sequencing

E9.2.1 As indicated in E7.

E9.3 Method of Measurement and Basis of Payment

E9.3.1 Construction of the Aqueduct undercrossing shall be measured on a lump sum basis. The lump sum price shall include excavation, backfill, temporary support structure as per E8.2, supply and installation of pre-cast pipe from new MH.6 to new MH.7, supply and installation of CretexWrap on all pipe joints, repair and/or replacement of the existing Aqueduct cradle and sub-drain, stab fill as indicated on the drawings, cutting the temporary support structure beams at the connection points and all items incidental to the Work.

E10. GRAVITY SEWERS

E10.1 Construction Methods

E10.1.1 Manhole adjustments shall be either by the:

- (a) Installation of cast iron ring inserts or
- (b) Installation of concrete riser sections.

E10.2 Method of Measurement and Basis of Payment

E10.2.1 Connection to Existing 1250mm Plug: The unit payment for the connection shall include 1250mm cast-in-place pipe between new MH.1 and the 1250mm plug, jack hammering the opening of the plug as required, and performing all operations necessary to complete the Works as specified including all items incidental to the Works.

- E10.2.2 MH.3, MH.13, MH.17, MH.18, MH.19, MH.20, and MH.27 (weir overflow manholes): Measurement and payment will be on a unit basis performing all operations necessary to complete the Works as specified including any items incidental to the Works. The unit to be paid shall consist of the frames, covers, rungs, risers, reducers, adjusting rings, base, overflow pipe, chamfered weir walls, benching and connection to existing sewers.
- E10.2.3 MH.12 (weir overflow manhole): Measurement and payment will be on a unit basis performing all operations necessary to complete the Works as specified including any items incidental to the Works. The unit to be paid shall consist of the frames, covers, rungs, risers, reducers, adjusting rings, base, overflow pipe, chamfered weir walls, benching, required lengths and sizes of egg shaped pipe and connection to existing sewers (#1400, #1422 and #1496) to the limits of the excavation or as indicated on the drawings.
- E10.2.4 Manhole Risers
- (a) Measurement and payment for replacing existing manhole risers shall be on a vertical metre basis. Separate payment shall be made for each diameter:
- E10.2.5 Manhole Adjustments
- (a) Manhole adjustments by installation of precast concrete ring sections up to a maximum height of 300mm will be measured for payment on a unit basis. Adjustments in excess of 300mm will be paid on a vertical metre basis as manhole risers.
- E10.2.6 Maintaining Existing Sewer Flows, Flow Control, Diversions and Bypass Pumping
- (a) Maintaining Existing Sewer Flows, Flow Control, Diversions and Bypass Pumping required to complete the Works in the Contract shall be incidental to the Contract.

E11. TRENCHLESS EXCAVATION

- E11.1 Further to Clause 3.4.1 of CW 2130, all sewers shall be installed by trenchless methods.
- E11.2 Selection of excavation equipment for installation of sewers by trenchless methods shall be the responsibility of the Contractor and shall be made based on the basis of expected soil conditions outlined in the geotechnical report and as detailed on the soil logs. The Contractor shall make allowances in the choice of equipment to account for reasonable and minor deviations in ground conditions and shall have contingency plans for the removal of boulders and other minor changes in ground conditions.
- E11.3 In the event that there is a substantial change in the character or nature of the subsurface conditions or that obstructions are encountered, which adversely impact the Contractor's production or construction procedure, the Contractor shall immediately notify the Contract Administrator.

The notice shall provide details of the change in subsurface soil conditions or obstructions encountered, any proposed construction procedure revision that the Contractor intends to undertake, as well as any other relevant supporting information.

The Contract Administrator shall review the notice as expeditiously as possible to assess whether the change in conditions and revised construction procedures amount to a Change in Work. In the case of obstructions due to boulders in the silt/till or hardpan strata where that stratum is evident in the soils logs, no consideration will be made for a Change in Work as boulder obstructions can be reasonably anticipated when working in this stratum. Obstructions such as "random boulders" in the clay strata well above the till interface may be considered as a Change in Work dependent on the level of effort required to facilitate their removal.

Where the Contract Administration deems that a Change in Work is necessary, it shall be valued in accordance with the provisions of GC: 7 and the supplementary requirements of E12.

E12. TRENCHLESS EXCAVATION OBSTRUCTIONS

E12.1 Contingency plans for removal of the obstructions encountered in trenchless excavations must be approved by the Contract Administrator and may consist of but not limited to one of the following.

- (a) Drill or excavate a shaft at the location of the obstruction and remove the obstruction.
- (b) Remove the obstruction through the jacking head or core hole following drilling, splitting or breaking the obstruction into smaller components as required.
- (c) Other removal methods.

E12.2 Where the Contract Administrator deems that the obstruction encountered represents a Change in Work, it shall be valued in accordance with GC: 7.4 (c) and the following supplemental requirements:

- (a) The first four (4) hours of handling obstructions for each occurrence shall be the responsibility of the Contractor.
- (b) Equipment rates for equipment required in support of the obstruction removal shall be compensated at the MHCA rental rates. Equipment not listed in the MHCA rate schedule shall have their rates established by the Contractor prior to the commencement of Work in accordance with the procedure documented in the MHCA rental guide for establishing equipment rental rates and shall be subject to the approval of the Contract Administrator.
- (c) Standby equipment that cannot reasonably be deployed elsewhere during the duration of the obstruction removal shall be compensated at 50% of its established rate as noted in E12.2(b) above.
- (d) Labour rates and material costs associated with obstruction removal shall be compensated as per GC: 7.4 (c) and 7.4.1 with the provision that any removal and replacement of pavements shall be compensated at the Contract Unit Price for such Work.

E13. TEMPORARY CONCRETE SURFACE RESTORATIONS

E13.1 If the weather will not permit final road pavement restorations to be completed in a timely manner after the underground work, temporary surface restorations for shafts or excavations within the pavement shall be made by installing temporary concrete surface restorations until such a time as final restorations are complete.

E13.2 Concrete Surface Restorations shall conform to CW 2130 with the following exception:

- (a) No tie bars, dowels or reinforcing steel shall be required.

E13.3 All shafts and excavations shall be flooded and jetted prior to installing temporary surface restorations.

E13.4 If the weather will permit, road pavement restorations shall be final restorations and shall commence immediately after underground construction.

E13.5 Construction of temporary concrete pavement shall be measured on a square metre basis. The amount paid for shall be the total number of square metres of specified thickness acceptably placed. Payment shall be compensation in full for preparation of the base, supplying forms, insulating blankets, as well as supply and placement of Portland cement concrete pavement complete. Payment shall also include removal and disposal of the temporary pavement when permanent restorations commence.

E13.6 Temporary surface restorations must be completed and maintained to the satisfaction of the Contract Administrator. All additional materials required for temporary surface restorations shall be considered pay items.

- (a) Any temporary concrete, cement stabilized fill, limestone and/or cold mix placed during winter construction shall be completely removed and the remaining backfill shall be flooded, tamped and topped up prior to performing permanent pavement or boulevard restorations.

E14. EXISTING ABANDONED GAS MAINS

E14.1 Should it become necessary for an existing abandoned gas main to be removed to facilitate construction of the sewer, it shall be the responsibility of the Contractor to notify the Gas Company prior to removing the main. After obtaining an acknowledgement from the Gas Company that the main is abandoned, the necessary length may be removed and the open ends of the abandoned gas main plugged and sealed in accordance with CW2130. No separate payment shall be made for this Work. It shall be incidental to the price bid for installation of the sewers.

E15. PROTECTION OF EXISTING TREES

E15.1 The Contractor shall take the following precautionary steps to avoid damage from his construction activities to existing boulevard trees within and adjacent to the limits of construction:

- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of any tree.
- (b) Mature tree trunks shall be strapped with 25 x 150 x 2400 (1" x 6" x 8') wood planks. Smaller trees shall be similarly protected using appropriately sized wood planks.
 - (i) Excavations shall be carried out in such a manner so as to minimize damage to existing root systems. Roots over 50mm in diameter which must be cut to facilitate an excavation shall be neatly pruned with a saw prior to excavation and coated with an appropriate wound dressing to prevent infection.
 - (ii) Work on Site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to tree branches does occur, the Contractor shall neatly prune the damaged branch.
- (c) American elm trees are not to be pruned between April 1st and August 1st and Siberian elm trees between April 1st and July 1st of any year under provisions of The Dutch Elm Disease Act.

E15.2 All damages to existing trees caused by the Contractor's construction activities shall be repaired to the requirements and satisfaction of the City of Winnipeg, Parks and Recreation Department, Forestry Branch.

E15.3 No separate measurement or payment will be made for protection of trees. It shall be considered incidental to the Contract Work.