



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 70-2005

**WINNIPEG WATER TREATMENT PROGRAM – BULK EXCAVATION FOR
CLEARWELL AND WATER TREATMENT PLANT SITES**

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	4
Form G1: Bid Bond and Agreement to Bond	5
Form G2: Irrevocable Standby Letter of Credit and Undertaking	7

PART B - BIDDING PROCEDURES

B1. Project Title	1
B2. Submission Deadline	1
B3. Site Investigation	1
B4. Enquiries	1
B5. Addenda	1
B6. Substitutes	2
B7. Bid Submission	3
B8. Bid	3
B9. Prices	4
B10. Qualification	4
B11. Bid Security	5
B12. Opening of Bids and Release of Information	6
B13. Irrevocable Bid	6
B14. Withdrawal of Bids	6
B15. Evaluation of Bids	7
B16. Award of Contract	7

PART C - GENERAL CONDITIONS

C1. General Conditions	1
------------------------	---

PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Definitions	1
D4. Contract Administrator	2
D5. Contractor's Supervisor	2
D6. Notices	2
D7. Furnishing of Documents	3

Submissions

D8. Safe Work Plan	3
D9. Insurance	3
D10. Performance Security	4
D11. Subcontractor List	4

Schedule of Work

D12. Commencement	4
D13. Scheduling	5
D14. Suspension of Work	5
D15. Critical Stages	6
D16. Substantial Performance	6
D17. Total Performance	6
D18. Liquidated Damages	6
D19. Scheduled Maintenance	7
D20. Job Meetings	7
D21. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	7

D22. Emergencies	7
Form H1: Performance Bond	8
Form H2: Irrevocable Standby Letter of Credit	10
Form J: Subcontractor List	12

PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

- B1.1 WINNIPEG WATER TREATMENT PROGRAM – BULK EXCAVATION FOR CLEARWELL AND WATER TREATMENT PLANT SITES

B2. SUBMISSION DEADLINE

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, April 15, 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 a.m. to 12:00 noon on April 7, 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.

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 in Adobe Acrobat (pdf) format on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division 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 Division 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 at his sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- 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; and
 - (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 Division
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 Division internet site at <http://www.winnipeg.ca/matmgt>); and
 - (ii) have successfully carried out work similar in nature, scope and value to the portion of the Work proposed to be subcontracted to them, and are fully capable of performing the Work required to be done in accordance with the terms of the Contract;
 - (g) have a written workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba).
- 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 Division 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 Manitoba, in the form included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
 - (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.
- 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.

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

B11.4 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

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

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 page at The City of Winnipeg, Corporate Finance, Materials Management Division 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, or by other authorities having jurisdiction.

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 Award Authority considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

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;
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10;
 - (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 Award Authority will give notice of the award of the Contract by way of a letter of intent, or will give notice that no award will be made.
- 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 in Adobe Acrobat (.pdf) format on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt>.

PART D - SUPPLEMENTAL CONDITIONS

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 bulk excavation at the Clearwell and Water Treatment Plant sites including sub-base and base construction in the Clearwell and temporary aqueduct bridging structures
- D2.2 The major components of the Work are as follows:
- (a) Excavation and hauling to designated disposal sites of approximately 160,000 cubic metres of earth.
 - (b) Construction of a 200 millimetre thick sub-base structure on geotextile fabric in the Clearwell excavation.
 - (c) Placement of polyethylene covering over excavation sideslopes.
 - (d) Construction, maintenance and removal of two (2) temporary bridging structures to permit crossing of the aqueducts.
 - (e) Gravel surfacing of existing haul roads as directed by the Contract Administrator.

D3. DEFINITIONS

- D3.1 When used in this Bid Opportunity:
- (a) "**HDPE**" means high density polyethylene;
 - (b) "**GWWD**" means Greater Winnipeg Water District; and
 - (c) "**DBPS**" means Deacon Booster Pumping Station.

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is UMA Projects (CM) Ltd., represented by:

Mr. Larry Smith, C.E.T.
Assistant Construction Manager
1479 Buffalo Place
Winnipeg, MB. R3T 1L7
Telephone No. (204) 284-0580
Facsimile No. (204) 453-5172

D4.2 At the pre-construction meeting, Larry Smith 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 shall be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt>.

D9. INSURANCE

- D9.1 The City shall provide and maintain the following Project Insurance Coverages:
- (a) Builder's Risk Insurance in the amount of one hundred percent (100%) of the total project cost.
 - (i) The Contractor shall be responsible for deductibles; amount as yet to be determined.
 - (b) Wrap-Up Liability Insurance in an amount of no less than 10 million dollars (\$10,000,000.00)
 - (i) The Contractor shall be responsible for deductibles; amount as yet to be determined.
 - (c) The City of Winnipeg will carry such insurance to cover all parties engaged in the Work in this Contract. Provision of this insurance by the City of Winnipeg is not intended in any way to relieve the Contractor from his obligations under the terms of the Contract. Specifically, losses relating to deductibles for insurance, as well as losses in excess of limits of coverage and any risk of loss that is not covered under the terms of the insurance provided by the City of Winnipeg remains with the Contractor.
- D9.2 The Contractor shall provide and maintain the following insurance coverage at all times during the performance of the Work:
- (a) 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).
 - (i) Deductibles shall be borne by the Contractor;
 - (ii) The Contractor shall not cancel, materially alter, or cause the policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator;
 - (iii) The Contractor shall provide the Contract Administrator with evidence of insurance of the policy at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than seven (7) Calendar Days from notification of the award of Contract.
 - (b) 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 Manitoba, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
 - (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.
- 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 GC:4.1 for the return of the executed Contract.

SCHEDULE OF WORK

D12. COMMENCEMENT

- D12.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.
- D12.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence that the Contractor is in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
 - (ii) evidence of the workers compensation coverage specified in GC:6.14;
 - (iii) the Safe Work Plan specified in D8;
 - (iv) evidence of the insurance specified in D9;
 - (v) the performance security specified in D10; and
 - (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.
- D12.3 The Contractor shall commence the Work on the Site within five (5) Working Days of receipt of the letter of intent.

D13. SCHEDULING

- D13.1 The Contract Administrator has developed a Project Master Schedule for the project. This schedule will be available in the offices of the Contract Administrator and will be updated as required as the work progresses.
- D13.2 The Contractor shall, within 5 days of award of contract, prepare a detailed Contract Work Schedule for his work based on a critical path method (CPM) approach.
- D13.3 The schedule shall conform to the Project Master Schedule and show, in a clear graphical manner, through the use of Gantt charts, in a maximum of weekly stages, the proposed progress of the main items, structures and subtrades of the contract and indicate the labour, construction crews, plant and equipment to be employed. Indicate the delivery date of major pieces of equipment to be supplied. The schedule shall be predicated on the completion of all work on or before the date of Substantial Performance.
- D13.4 Upon acceptance by the Contract Administrator, distribute copies of the revised schedule to Subcontractors and other concerned parties.
- D13.5 The Contract Work Schedule shall be updated as the work requires and submitted to the Contract Administrator.
- D13.6 The Contractor shall instruct recipients to report to the Contractor immediately any problems anticipated by the timetable shown in the Contract Work Schedule.
- D13.7 While it is intended that the Contractor shall be allowed, in general, to carry on the Contract in accordance with such general plans as may appear to him to be most desirable, the Contract Administrator, at his discretion, may direct the order in which, and points at which, the work shall be undertaken.
- D13.8 This control shall be exercised in the interests of the Owner so that the work of other Contractors who may be working on the site may be coordinated with the work on this Contract. A program of work will be drawn up and agreed to before the commencement of the Contract.
- D13.9 The Contract Administrator shall be notified immediately when the work under the Contract Work Schedule will adversely affect the work of other Contractors and the critical path of the Project Master Schedule as the work under the Contractor's Contract Work Schedule is an integral part of the Project Master Schedule.
- D13.10 The Contractor shall be familiar with all other Contract Work Schedules as contracted by the Owner with other Contractors and the critical path of the Project Master Schedule.

D14. SUSPENSION OF WORK

- D14.1 The Contractor is advised that operation of the Red River Floodway may cause high groundwater pressures in the till layer underlying the area of Work activities. In order to preclude the possibility of base heave within excavations, the Contract Administrator may activate groundwater dewatering wells to decrease these pressures and/or may order excavation activities to be suspended or to not proceed below a prescribed elevation until water levels within the Floodway channel subside.
- D14.2 The judgment and direction of the Contract Administrator in this matter shall be final and the Contractor will not be compensated for any costs resulting from the suspension of work.

D14.3 Critical Dates specified in D16 Substantial Performance, as specified in D17 Total Performance, and dates specified in D18 Liquidated Damages will be extended by the number of working days equal to the period that Work was suspended.

D15. CRITICAL STAGES

D15.1 The Contractor shall achieve critical stages of the work in accordance with the following requirements:

- (a) Excavation to final grade and placement of geotextile and limestone sub-base for the south half of the Clearwell shall be completed by May 27, 2005. The piling contractor will then be granted access to this area for commencement of his work.

D16. SUBSTANTIAL PERFORMANCE

D16.1 The Contractor shall achieve Substantial Performance by July 8, 2005.

D16.2 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.

D16.3 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.

D17. TOTAL PERFORMANCE

D17.1 The Contractor shall achieve Total Performance by July 29, 2005.

D17.2 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.

D17.3 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.

D18. LIQUIDATED DAMAGES

D18.1 If the Contractor fails to achieve Critical Stages in accordance with the Contract by the day fixed herein for Critical Stages, the Contractor shall pay the City two thousand dollars (\$2,000) per Calendar Day for each and every Calendar Day following the day fixed herein for Critical Stages during which such failure continues.

D18.2 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City two thousand dollars (\$2,000) per Calendar Day for each and every Calendar Day following the day fixed herein or for Substantial Performance during which such failure continues.

D18.3 If the Contractor fails to achieve Total Performance in accordance with the Contract by the day fixed herein for Total Performance, the Contractor shall pay the City six hundred dollars (\$600) per Calendar Day for each and every Calendar Day following the day fixed herein for Total Performance during which such failure continues.

D18.4 The amounts specified for liquidated damages in D18.1, D18.2 and D18.3 are based on genuine pre-estimates of the City's losses in the event that the Contractor does not achieve these stages by the day fixed herein for same.

D18.5 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D19. SCHEDULED MAINTENANCE

D19.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

(a) Removal of the Temporary Aqueduct Bridging Structure as specified in E9.4.2(c).

D19.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

D20. JOB MEETINGS

D20.1 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.

D20.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D21. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D21.1 Further to GC:6.26, UMA Projects (CM) Ltd. 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).

D21.2 As Prime Contractor, UMA Projects (CM) Ltd. will administer a Safety and Health Management Plan. Compliance with this Plan will be mandatory for all personnel on the construction site and training and certification of all staff by the Prime Contractor's Safety Officer will be required.

D22. EMERGENCIES

D22.1 In case of an emergency, the Contractor shall immediately call the McPhillips Control Centre at 204-986-4781.

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. 70-2005

WINNIPEG WATER TREATMENT PROGRAM – BULK EXCAVATION FOR CLEARWELL AND WATER TREATMENT PLANT SITES

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

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

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

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

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

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

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

- E1.1 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.
- E1.1.1 *The City of Winnipeg Standard Construction Specifications* is available in Adobe Acrobat (.pdf) format on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt>.
- E1.1.2 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:

<i>Drawing Title</i>	<i>City Drawing No.</i>
Cover Page	
Site Works Location Plan – Haul Routes, Excavation and Disposal Areas	1-0601-M-B-G0001-001-01-D
Site Works Excavation Plan	1-0601-M-B-G0002-001-01-D
Site Works Sections	1-0601-M-B-G0003-001-01-D
Site Works Disposal Area 1 & 2	1-0601-M-B-G0004-001-01-D
Site Works Disposal Area 3	1-0601-M-B-G0005-001-01-D

E2. GEOTECHNICAL INFORMATION

- E2.1 Test Hole Logs
- E2.1.1 Geotechnical information has been compiled from various sources to summarize subsurface conditions within the work area. Appendix A of these Specifications contains the following testhole logs.
- (a) By UMA Engineering
 - (i) TH's 04-01 to 04-10, 04-12 to 04-24, 04-31, and 04-33 to 04-50 (2004)
 - (ii) TH's 1 to 3 (1996)
 - (b) By Others
 - (i) TH's 3 to 6, and R-5 by RM Hardy & Associates Ltd. (1977)
 - (ii) TH's 1 and 2 by Dyregrov Consultants (1993)
 - (iii) TH A13 by KGS Group (1991)
 - (c) The figure attached with the testhole logs in Appendix A of these Specifications illustrates the test hole locations in relation to the work area.

- (d) Within the City of Winnipeg Water Treatment Plant Preliminary Design Report – Section 14 Geotechnical Investigation (2005), UMA testhole information is considered accurate at the locations drilled and at the time of the investigations. The inclusion of testhole data recorded by others does not represent any guarantees to the accuracy of this data.
- (e) Testhole information is provided to assist in the Bidder's evaluation of subsurface conditions and the Bidder shall solely be responsible for any interpretation that they make from this information. Variations in soil conditions may exist between testholes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities or operation of the Floodway.

E2.2 Reports

E2.2.1 Additional reports and geotechnical information listed as follows are available for viewing at the offices of UMA Engineering Ltd., 1479 Buffalo Place, Winnipeg, Manitoba.

- (a) The City of Winnipeg Water Treatment Plant Preliminary Design Report – Section 14 Geotechnical Investigation (2005)
- (b) Water Impounding Reservoir - Cell #2 and Booster Pumping Station Deacon Manitoba by RM Hardy & Associates Ltd. (1977)
- (c) Proposed Venturi Chambers Deacon Reservoir by Dyregrov Consultants (1993)
- (d) Deacon Reservoir Expansion Proposed Groundwater Monitoring Program by KGS Group (1993)
- (e) Shoal Lake Aqueduct Program 5 – Deacon Drainage Improvements by UMA Engineering Ltd. (1996)
- (f) Pile Driving records from Deacon Booster Pumping Station by RM Hardy and Associates Ltd. (1979).

E2.2.2 Information in these reports has been provided to assist in the Bidder's evaluation of subsurface conditions and the Bidder shall solely be responsible for any interpretation that they make from this information.

E3. OFFICE FACILITIES

E3.1 The City will not provide the Contractor with power or water.

E4. SANITATION FACILITY

E4.1 A portable toilet shall be located at a reasonable distance away from any waterworks facility. The portable toilet shall be cleaned on a weekly basis. The provision of a portable toilet, cleaning and regular maintenance shall be considered a subsidiary obligation of the Contractor. No payment shall be made for this item as it will be considered incidental to the Work.

E5. WASTE CONTAINER

E5.1 A waste container to dispose of garbage produced from the site shall be provided by the Contractor. It shall be located in a safe, convenient location, and be emptied as necessary by the Contractor. The provision, maintenance and removal of a waste container shall be considered a subsidiary obligation of the Contractor. No payment shall be made for this item as it will be considered incidental to the Work.

E6. TRAFFIC CONTROL

- E6.1 Further to clause 3.7 of CW 1130-R1, the Contractor shall supply, erect, maintain and remove applicable traffic control devices, provide flagpersons and follow traffic control procedures in accordance with the Manitoba Transportation and Government Services (MTGS) Work Zone Traffic Control Manual. MTGS' Specifications for Traffic Control within the workzone shall also be followed. The Contractor shall contact the MTGS Regional Sub-Office at (204) 945 - 8955 to receive approval of the work zone control plan before placing signs on Provincial Road No. 207. The supplying, erecting, assembling, maintaining and removing of all traffic control devices shall be considered incidental to the Work and no payment will be made.
- E6.2 Stop signs shall be erected on both approaches of the designated aqueduct protection bridges.
- E6.3 The Contractor shall provide flagpersons that have received up-to-date certification from a recognized flag training program. One flagperson shall be provided for each direction of traffic on Provincial Road No. 207. The flagpersons shall utilize radio communication and be equipped with recognized flagperson equipment. The Contractor shall regulate traffic speed and patterns on Provincial Road No. 207 within the work zone. All costs associated with the provision of flag people shall be considered incidental to the contract. No payment shall be made for this item and will be considered incidental to the Work.

E7. TRAFFIC MANAGEMENT

- E7.1 Further to clause 3.7 of CW 1130-R1:
- E7.1.1 The Contractor shall schedule construction activities to meet the following:
- (a) Construction equipment shall cross Provincial Road No. 207 during daylight hours only, unless given approval by the Contract Administrator.
 - (b) Do not delay traffic for periods longer than five minutes.
 - (c) If the Contractor chooses to utilize equipment other than trucks, licensed to travel on public highways, to haul earth across Provincial Road No. 207, an earth bridge must be constructed in accordance with MTGS' Standard Construction Specification 500.2.7.4 – Grading. The earth bridge will be permitted only during daylight hours. It shall be removed, and the highway surface cleaned, before sunset. No direct payment will be made for placing and removing material or controlling traffic for the earth bridges, as this work will be considered incidental to the Work.
- E7.1.2 The Contractor shall ensure that all equipment operators stop before crossing Provincial Road No. 207 and proceed only when the flagpersons have stopped traffic at both ends of the workzone. In addition, all construction traffic shall come to a complete stop before crossing the aqueduct protection bridges.

E8. HAUL ROADS

- E8.1 Description
- E8.1.1 Gravel Surfacing shall be in accordance with Specification CW 3170-R3, "Gravel Surfacing" except where noted, revised, or supplemented in this Specification.
- E8.2 Construction Methods
- E8.2.1 The Contractor is advised of the haul routes as outlined on the Drawings. Both haul routes are composed partly of undeveloped roadways. The Contractor shall be responsible for keeping these undeveloped roadways maintained throughout the duration of the Contract.

- E8.2.2 The Contractor shall participate in an inspection of haul routes proposed for use for this contract, with representatives of the Contract Administrator and the City of Winnipeg prior to the commencement and after the completion of the Works.
- E8.2.3 The Contractor shall maintain the haul roads throughout the period of construction.
- E8.2.4 At the post-haul inspection the Contract Administrator will determine if it is necessary to re-gravel the haul routes. The Contract Administrator will determine the rate of application.
- E8.3 Method of Measurement and Payment
- E8.3.1 Gravel Surfacing will be measured on a weight basis and paid for at the Contract Unit Price per tonne for "Surfacing Material". The amount measured shall be the total number of tonnes applied and acceptably completed in accordance to this Specification, as determined by measurements made by the Contract Administrator.
- E9. CONDITION, PROTECTION OF, AND ACCESS TO THE AQUEDUCT**
- E9.1 Condition of the Aqueduct
- E9.1.1 The Aqueduct is constructed of reinforced concrete and in some areas, contains numerous cracks. The Aqueduct, therefore, shall be considered as a fragile structure. 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.
- E9.2 Protection of the Aqueduct
- E9.2.1 Contractors working in the vicinity of the Aqueduct shall ensure that:
- (a) Equipment shall only be permitted to cross the Aqueduct at designated bridge crossing locations and shall come to a complete stop before crossing.
 - (b) Granular material, construction material, soil or other material shall not be stockpiled on the Aqueduct or within 10 metres of the Aqueduct centreline.
 - (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.
- E9.2.2 It is the Contractors' responsibility to ensure that all work crew members understand, observe, and work to the requirements of Specifications E9.1 and E9.2.
- E9.3 Equipment Restrictions
- E9.3.1 Equipment must cross the Aqueduct in a responsible and careful manner (i.e. slowly).
- E9.3.2 Loads for Provincial Road No. 207 shall be limited to the weight restrictions in place for the road.
- E9.4 Temporary Aqueduct Bridging Structure
- E9.4.1 Description
- (a) This specification covers the design, installation, maintenance and removal of temporary Aqueduct bridging structures.
- E9.4.2 Construction Methods
- (a) Temporary Aqueduct bridging structures shall be constructed at appropriate locations as designated on the Drawings or as approved by the Contract Administrator. The

Contractor shall submit shop drawings for review of the temporary Aqueduct bridging structure in accordance with the conditions outlined in Specification E9.2. Shop drawings shall bear the seal of a professional engineer registered to practice in the Province of Manitoba.

- (b) The temporary Aqueduct bridging structure shall be designed and constructed in such a manner so as to prevent any additional loads (live or dead loads) being transmitted to the Aqueduct during construction, launching or operation. In this regard, structures less than 11 metres in total length may require specialized (deep) foundations at the end supports to prevent the imposition of loads to the Aqueduct structure. The Contractor shall allow others, including but not limited to other contractors, to cross the bridging structures. All temporary bridging superstructures shall be removed when they are no longer required to facilitate construction and any substructures shall be removed to 1metre below grade.
- (c) The temporary Aqueduct bridging structure located west of Provincial Road No. 207 shall remain in-place until September 30, 2005. The Contractor shall allow usage of this structure by other contractors until September 30, 2005.

E9.4.3 Method of Measurement and Payment

- (a) Temporary Aqueduct Bridging Structures will be measured on a per unit basis and paid for at the Contract Unit Price per unit for "Temporary Aqueduct Bridging Structure". The amount measured shall be the total number of units acceptably installed, maintained and removed in accordance to this Specification, as determined by measurements made by the Contract Administrator.

E10. ENVIRONMENTAL PROTECTION

- E10.1 The Contractor shall be aware that the 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.
- E10.2 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.
- E10.3 The Contractor is advised that at least the following Acts, Regulations, and By-laws apply to the Work:
 - E10.3.1 Federal
 - (a) Canadian Environmental Protection Act (CEPA) c.16
 - (b) Transportation of Dangerous Goods Act and Regulations c.34
 - E10.3.2 Provincial
 - (a) The Dangerous Goods Handling and Transportation Act D12
 - (b) The Endangered Species Act E111
 - (c) The Environment Act c.E125
 - (d) The Fire Prevention Act F80
 - (e) The Manitoba Nuisance Act N120
 - (f) The Public Health Act c.P210
 - (g) The Workplace Safety and Health Act W120
 - (h) The Fisheries Act
 - (i) The Migratory Birds Act
 - (j) The Historic Resources Act

- (k) Drinking Water Safety Act
 - (l) Current applicable associated regulations.
- E10.3.3 The Contractor is advised that the following environmental protection measures apply to the Work.
- E10.3.4 Materials Handling and Storage
- (a) Construction materials shall not be stored within ten (10) metres of the Aqueduct centerline.
- E10.3.5 Fuel Handling and Storage
- (a) The Contractor shall abide by the requirements of Manitoba Conservation storage and handling of Petroleum Products and Allied Products Regulations 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. No repairs within 30 metres of the Aqueduct or watercourse will be permitted.
 - (g) Refuelling of mobile equipment and vehicles shall take place at least 30 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. All refuelling vehicles shall be equipped with a spill response kit.
- E10.3.6 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 within 30 metres of watercourses; contaminated water from onshore cleaning operations shall not be permitted to enter watercourses.
- E10.3.7 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 and meet training requirements for these Regulations.

E10.3.8 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 the Industrial Waste Branch of the Laboratory Services Division.
- (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 Conservation 24-hour Spill Response Line (204) 945-4888, RCMP (Oakbank Detachment) (911), City of Winnipeg Fire Paramedic Service (911), Springfield Ambulance (911), company backup, contact Contract Administrator.
 - (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.

E11. SITE PREPARATION, DEWATERING, MOBILIZATION AND DEMOBILIZATION

E11.1 Description

- E11.1.1 This specification covers site preparation including mobilization, equipment and fuel compounds and storage areas, site drainage, demobilization, final site clean up, and other Contractor related tasks required as a portion of the works for this Contract.
- E11.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials and all things necessary for and incidental to the satisfactory performance and completion of all work as hereinafter specified.
- E11.2 GWWD Railway
- E11.2.1 The Contractor shall advise the Greater Winnipeg Water District (GWWD) railway dispatcher at (204) 986-4175 before any equipment crosses the railway. If it is required to cross the railway during the Contract, the Contractor shall supply and install timber planks that will protect the track. Also, stop signs on each side of the spur lines shall be installed by the Contractor. The Contractor shall contact Dave Carr of the GWWD at (204) 986-4884 prior to installing these signs and timbers. The timber installation shall be installed under the inspection of the GWWD Railway personnel.
- E11.3 Site Drainage
- E11.3.1 Provision of adequate site drainage during the entire construction phase shall be the Contractor's responsibility. The Contractor shall regrade the site as necessary to provide for proper drainage away from the excavated areas. This water is to be redirected into ditches outside of the site. Silt fences shall be properly erected and keyed into the primary ditches to prevent eroded materials from leaving the site. No extra payment or time extension will be granted as a result of difficulties associated with site access resulting from poor site drainage during any part of the construction phase.
- E11.3.2 Drainage ditches shall be left operational during the Work of this Contract. Culverts of adequate diameter (450 millimetres minimum) shall be installed where access across a ditch is required and left in-place at the completion of this Contract.
- E11.4 Dewatering
- E11.4.1 The Contractor shall be responsible for keeping the excavated areas dewatered at all times. The Contractor shall prepare and submit a plan to dewater the excavation at the preconstruction meeting. The plan will be reviewed and approved by the Contract Administrator prior to commencement of construction. If at any time the Contract Administrator deems the dewatering efforts to be insufficient, the Contract Administrator may order the Contractor to modify and/or increase efforts at the sole discretion of the Contract Administrator with no additional time or compensation. The Contractor shall maintain dewatering until final completion of the contract, except the Clearwell which shall be dewatered until May 31, 2005.
- E11.5 Final Site Cleanup
- E11.5.1 The Contractor shall clean up and remove work-related surplus materials, tools, equipment, waste, and debris at the completion of the Contract.
- E11.6 Method of Measurement and Basis of Payment
- E11.6.1 No measurement will be made for site preparation, mobilization, site drainage, dewatering and demobilization. No payment shall be made for site preparation, mobilization, site drainage, dewatering and demobilization as this item will be considered incidental to the Work.

E12. CLEARING

E12.1 Description

E12.1.1 Clearing shall be in accordance with Specification CW 3010-R4, "Clearing and Grubbing", except where revised or supplemented in this Specification.

E12.2 Construction Methods

E12.2.1 Disposal Area 3 requires some clearing as shown on the Drawings. The cleared trees shall be spread at the base of the pile before starting any hauling into this disposal area.

E12.2.2 Grubbing will not be required in this Contract.

E12.2.3 Burning materials from clearing and grubbing operations will not be allowed.

E12.3 Method of Measurement and Basis of Payment

E12.3.1 Method of Measurement

(a) Further to Specification CW 3010-R4, "Clearing and Grubbing", Clearing shall not be measured and will not be considered as an item for payment.

E12.3.2 Basis of Payment

(a) No payment shall be made for Clearing and Grubbing as this item will be considered incidental to the Work.

E13. PROTECTION OF INSTRUMENTATION

E13.1 The Contractor is advised that abandoned and operational instrumentation (both existing and to be installed at the commencement of construction) is located within the work area. Operational instrumentation shall be protected during construction. No direct payment will be made for instrumentation protection, as this work will be considered incidental to the Contract.

E13.2 Operational instrumentation damaged by the Contractor shall be repaired or replaced to the satisfaction of the Contract Administrator by the Contractor at his expense.

E14. EXCAVATION

E14.1 Description

E14.1.1 Excavation shall be in accordance with Specification CW 3170-R3, "Earthwork and Grading" except where noted, revised, or supplemented in this Specification.

E14.1.2 Excavated material shall include the excavation and disposal of earth, peat and construction debris which may be encountered.

E14.2 Materials

E14.2.1 Excavated Material

(a) All excavated material shall be disposed of within the disposal areas as identified on the Drawings.

E14.3 Construction Methods

E14.3.1 The Contractor shall ensure that all excavation equipment operators and truck drivers understand and strictly follow the requirements of Specification E9: Condition, Protection of, And Access to the Aqueducts at all times.

- E14.3.2 Excavation shall begin at the south side of the Clearwell (adjacent to Deacon Booster Pumping Station) and proceed in a northerly direction. The Clearwell shall be backfilled with subbase material as soon as practicable after the bottom of the excavation is reached.
- E14.3.3 Throughout the excavation process, the Contractor shall haul material to the disposal sites as directed by the Contract Administrator.
- E14.3.4 The Contractor shall abide by all excavation slopes and elevations as indicated on the Drawings. At no time shall the Contractor alter the slopes or elevations indicated without prior approval from the Contract Administrator. If the Contractor over-excavates, the soils shall be replaced to the proper elevations and compacted to 100% of the density of the in-situ material. The Contract Administrator will take the average of three tests of surrounding in-situ material to determine the benchmark proctor. The Contractor shall correct this over-excavation at his own expense.
- E14.3.5 Any vertical face shall not exceed 1 metre in height.
- E14.3.6 Access roads leading down into the excavated area shall be approved by the Contract Administrator. Depths of buried pipes shall be taken into consideration when constructing these access points. Any cost to repair damaged pipes shall be borne by the Contractor. Access roads shall have a maximum 1 metre horizontal to 1 metre vertical (1H:1V) sideslope. If the access road cut exceeds 2 metre, the sideslope shall be decreased to 2H:1V. The minimum width of access roadway shall be 4 metre. The maximum access road gradient shall not exceed 16%. The Contractor shall place railroad ties at the point in which the access roads cross the outlet pipes.
- E14.3.7 The Contractor shall access the work area from the Main Access Road and Disposal Site 3 via temporary bridging structures crossing the Aqueduct.
- E14.3.8 The Contractor shall travel only on the haul routes as designated on the Drawings.
- E14.3.9 The disposal piles shall be built within the areas as outlined on the drawings. The slopes on the pile at Disposal Site 3 shall not exceed 5 metre horizontal to 1 metre vertical (5H:1V). The Contractor shall also be responsible for reshaping the existing earth pile at Disposal Site 3 to be not greater than 5H:1V slopes, as directed by the Contract Administrator. The Contractor shall level and trim the disposal sites to the satisfaction of the Contract Administrator.
- E14.3.10 The Contractor shall not allow construction equipment to be operated or parked on any benches along the north, west, or south sides of the excavated areas.
- E14.3.11 Within the excavation limits, laminate clay-silts exist. Laminate clay-silts shall be disposed of only at Disposal Site 3, unless otherwise approved of by the Contract Administrator.
- E14.4 Method of Measurement
- E14.4.1 Excavation will be measured on a volume basis. The amount measured shall be the total number of cubic metres of soils removed, acceptably completed in accordance to this Specification, as determined by measurements made by the Contract Administrator.
- E14.4.2 The volume of earth hauled to the respective disposal areas will be determined by measuring the volume of earth at each disposal area. Each disposal area will then be assigned a percentage of the total material excavated. Finally, the percentage of each individual disposal area will be applied to the volume of cut measured at the excavation site.
- E14.4.3 No measurement will be made for areas excavated outside the limits specified for removal by the Contract Administrator. All measurements will be performed using prismatic volume models instead of average end areas.

E14.5 Basis of Payment

E14.5.1 Excavation shall be paid at the Contract Unit Price for “Common Excavation – Disposal Area 1”, “Common Excavation – Disposal Area 2”, or “Common Excavation – Disposal Area 3”, measured as specified herein, which payment shall be compensation in full for performing operations herein described, and all items incidental to the Work included in this Specification.

E15. SEPARATION / REINFORCEMENT GEOTEXTILE FABRIC

E15.1 Description

E15.1.1 Supplying, installing and maintaining Separation / Reinforcement Geotextile Fabric shall be in accordance with Specification CW 3130-R1, “Supply and Installation of Geotextile Fabrics” except where noted, revised, or supplemented in this Specification.

E15.1.2 Separation / Reinforcement Geotextile Fabric shall be placed in the bottom of the Clearwell excavation only. Polyethylene sheeting shall be placed on all excavation slopes.

E15.2 Materials

E15.2.1 Geotextile fabric shall be supplied in accordance with the City of Winnipeg approved products list.

E15.3 Construction Methods

E15.3.1 After the bottom of the excavation has been reached and a level surface achieved in the Clearwell area, a Separation / Reinforcement Geotextile Fabric shall be placed at the bottom of the excavation.

E15.4 Method of Measurement

E15.4.1 Supplying and installing Geotextile Fabric will be measured on an area basis. The amount measured shall be the total number of square metres of Geotextile Fabric placed, acceptably completed in accordance with Specification CW 3130-R1, “Supply and Installation of Geotextile Fabrics”, as determined by measurements made by the Contract Administrator.

E15.5 Basis of Payment

E15.5.1 Supplying and installing Geotextile Fabric shall be paid at the Contract Unit Price for “Separation/Reinforced Geotextile Fabrics”, measured as specified herein, which payment shall be compensation in full for performing operations herein described, and all items incidental to the Work included in this Specification.

E16. POLYETHYLENE SHEETING

E16.1 Description

E16.1.1 Supplying, installing and maintaining Polyethylene Sheeting shall be in accordance with Specification CW 3130-R1, “Supply and Installation of Geotextile Fabrics” except where noted, revised, or supplemented in this Specification.

E16.2 Materials

E15.2.1 6-Mil polyethylene plastic sheeting shall be provided by the Contractor to cover the slopes within the excavated area.

E16.3 Construction Methods

E16.3.1 Upon completion of the sloped areas of the excavation, 6 Mil polyethylene plastic sheeting shall be placed upon the slopes in the same manner as the placement of the geotextile fabric. The joints shall be overlapped to prevent water contacting the slopes. It shall be anchored to withstand wear and tear from construction and weather. The Contractor shall submit a plan outlining the method of polyethylene installation. The plan will be reviewed and approved by the Contract Administrator prior to commencement of construction. The Contractor shall be responsible for maintaining and repairing the polyethylene sheeting throughout the duration of the Contract.

E16.4 Method of Measurement

E16.4.1 Supplying and installing Polyethylene Sheeting will be measured on an area basis. The amount measured shall be the total number of square metres of and Polyethylene Sheeting placed, acceptably completed in accordance with Specification CW 3130-R1, "Supply and Installation of Geotextile Fabrics", as determined by measurements made by the Contract Administrator.

E16.5 Basis of Payment

E16.5.1 Supplying and installing Polyethylene Sheeting shall be paid at the Contract Unit Price for "Separation/Reinforced Geotextile Fabrics", measured as specified herein, which payment shall be compensation in full for performing operations herein described, and all items incidental to the Work included in this Specification.

E17. SUBBASE CONSTRUCTION

E17.1 Description

E17.1.1 Sub-Base construction shall be in accordance with Specification CW 3110-R7, "Sub-Grade, Sub-Base and Base Course Construction" except where noted, revised, or supplemented in this Specification.

E17.1.2 Sub-Base material shall be placed in the bottom of the excavations as outlined on the Drawings.

E17.2 Materials

E17.2.1 Sub-Base Course Material

- (a) Sub-base shall consist of crushed limestone material, maximum particle size of 100 millimetres, conforming to the following gradation:

Canadian Metric Sieve Sizes	Percent of Total Dry Weight Passing Each Sieve
100 000	95-100
25 000	0-5
80	0-3

- (b) minimum bulk specific gravity of 2.6 (ASTM C127),
- (c) minimum Los Angeles abrasion loss of 35% (ASTM C131)
- (d) maximum soundness loss of 13% (ASTM C88)
- (e) maximum moisture content of 3 percent by weight (ASTM D2216-98)

E17.2.2 The Contractor shall submit a sample, and name the aggregate source of the granular backfill material to the Contract Administrator prior to the pre-construction meeting. The

sample shall be submitted to the testing laboratory designated by the Contract Administrator.

E17.3 Construction Methods

E17.3.1 As soon as practicable after excavation and placement of the geotextile fabric the bottom of the excavated areas shall be backfilled with 300 millimetres of sub-base material.

E17.3.2 The sub-base shall be spread uniformly throughout the bottom of the excavation and compacted to a minimum of 95 percent of maximum standard proctor dry density (ASTM D698) using vibratory compaction methods. The costs of failed tests are to be borne by the Contractor.

E17.3.3 Sub-base material shall be applied to the excavation access roads, as directed by the Contract Administrator.

E17.4 Method of Measurement

E17.4.1 Sub-Base material will be measured as outlined in CW 3110-R7 clause 4.5.3.

E17.5 Basis of Payment

E17.5.1 Sub-Base Material will be paid as outlined in CW 3110-R7 clause 4.5.3.