



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 90-2009

**REPLACEMENT OF VALVE LRV1 AT MACLEAN PUMPING STATION AND
RESERVOIR**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 REPLACEMENT OF VALVE LRV1 AT MACLEAN PUMPING STATION AND RESERVOIR

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, February 18, 2009.

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

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

B3. SITE INVESTIGATION

B3.1 Further to C3.1, the Contract Administrator or an authorized representative will be available at the Site from, located at 875 Lagimodiere Boulevard, from 9:00 a.m. to 10:00 a.m. on February 10, 2009 to provide Bidders access to the Site.

B3.2 The Bidder is advised that the valve chamber is a Confined Entry location. Persons wishing to enter the chamber will be required to supply all necessary personal protective safety equipment, including body harness, hard hats, and safety boots. The City of Winnipeg will provide a retrieval hoist, lighting, and gas detector. Personnel attending the site shall be properly trained in Confined Space Entry in accordance with Manitoba legislation and their individual company policy.

B3.3 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 on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.

- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.
- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B6.10 Notwithstanding B6.2 to B6.9, and in accordance with B7.6 deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B15.1(a).

B7. BID COMPONENTS

- B7.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;
 - (c) Bid Security
 - (i) Form G1: Bid Bond and Agreement to Bond, or
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
a certified cheque or draft;
- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B7.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B7.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.
- B7.5 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B15.1(a).
- B7.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.8 Bids shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management 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 should be printed below such signatures.

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

B9. PRICES

B9.1 The Bidder shall state the lump sum price in Canadian funds for the Work on Form B: Prices.

B9.2 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. QUALIFICATION

B10.1 The Bidder shall:

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

B10.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>

- B10.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) have successfully carried out work similar in nature, scope and value to the Work; and
 - (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
 - (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);
- B10.4 Further to B10.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
- (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
 - (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>)
- B10.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B10.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B11. BID SECURITY

- B11.1 The Bidder shall provide bid security in the form of:
- (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or
 - (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
 - (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.
- B11.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.
- B11.1.2 All signatures on bid securities shall be original.
- B11.1.3 The Bidder shall sign the Bid Bond.
- B11.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.
- B11.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

- B11.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B11.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.
- B11.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.
- B11.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

- B12.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.
- B12.1.1 Bidders or their representatives may attend.
- B12.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/default.stm>
- 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 Division website at <http://www.winnipeg.ca/matmgt/default.stm>
- B12.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B13. IRREVOCABLE BID

- B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B13.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

B14. WITHDRAWAL OF BIDS

- B14.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B14.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;

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

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

B15. EVALUATION OF BIDS

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

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

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

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

B15.4 Further to B15.1(c), the Total Bid Price shall be the lump sum price shown on Form B: Prices.

B16. AWARD OF CONTRACT

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

B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B16.2.1 Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:

- (a) the prices exceed the available City funds for the Work;
- (b) the prices are materially in excess of the prices received for similar work in the past;
- (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
- (d) only one Bid is received; or
- (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B16.3 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, in accordance with B15.

B16.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Construction* (Revision 2006 12 15) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm
- C0.2 A reference in the Bid Opportunity to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of the installation of a City supplied 1050 millimetre butterfly valve and actuator.

D2.2 The major components of the Work are as follows:

- (a) Construction of temporary Aqueduct crossing and access route
- (b) Removal of roof slab
- (c) Removal and salvage of valve chamber components including existing 1,050 millimetre valve and actuator
- (d) Installation of City supplied 1,050 millimetre butterfly valve
- (e) Modification of existing valve chamber piping to suit new valve
- (f) Reconnection of instrumentation and power supply to new valve
- (g) Replacement and sealing of roof slab
- (h) Restoration

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) "AWWA" means American Waterworks Association
- (b) "CSA" means Canadian standard Association
- (c) "NSF" means National Sanitation Foundation
- (d) "ASTM" means American Society for Testing and Materials; and
- (e) "ASME" means American Society of Mechanical Engineers
- (f) "ANSI" means American National Standards Institute
- (g) "NACE" means National Association of Corrosion Engineers
- (h) "SSPC" means Society for Protective Coatings
- (i) "NEMA" means National Electrical Manufacturer's Association
- (j) "IP" means International Protection Rating

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is AECOM, represented by:

Marv McDonald, C.E.T.
Senior Project Coordinator
1479 Buffalo Place, Winnipeg, MB R3T 1L7

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

D4.2 At the pre-construction meeting, Mr. McDonald 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 C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.
- 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 Notwithstanding C21., 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 Financial Officer
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
Internal Services Department
Legal Services Division
Attn: City Solicitor
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. AUTHORITY TO CARRY ON BUSINESS

- D8.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

D9. SAFE WORK PLAN

- D9.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D9.2 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 Division website at <http://www.winnipeg.ca/matmgt/Safety/default.stm>

D10. INSURANCE

- D10.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg and AECOM Canada Ltd. added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
 - (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- D10.2 Deductibles shall be borne by the Contractor.
- D10.3 The Contractor shall provide the City Solicitor with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D10.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D11. PERFORMANCE SECURITY

- D11.1 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.
- D11.1.1 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.
- D11.2 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 C4.1 for the return of the executed Contract.

D12. SUBCONTRACTOR LIST

D12.1 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 C4.1 for the return of the executed Contract.

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 C4.1 for the return of the executed Contract.

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

(a) a Gantt chart for the Work acceptable to the Contract Administrator.

D13.3 Further to D13.2(a), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

SCHEDULE OF WORK

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 of authority to carry on business specified in D8;
- (ii) evidence of the workers compensation coverage specified in C6.15;
- (iii) the Safe Work Plan specified in D9;
- (iv) evidence of the insurance specified in D10;
- (v) the performance security specified in D11;
- (vi) the Subcontractor list specified in D12, and
- (vii) 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.

(c) The Contractor shall commence the Work on the Site prior to April 1, 2009.

D15. SCHEDULE RESTRICTIONS

D15.1 Shutdown of a portion of the Interconnecting Branch Aqueduct and draining of the MacLean Reservoir (North Cell) will be scheduled based on a number of factors including routine maintenance and repair work, 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 a portion of the Interconnecting Branch Aqueduct and the MacLean Reservoir (North Cell) from service, without limiting the City's control over the operation of the Branch Aqueduct to complete other work, maintain adequate system service 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 water supply system operation, including but not limited to high water demand, abnormal weather, failures of related water system components and/or security concerns.

- D15.2 The Contractor shall provide a minimum of five (5) Working Days notice to the Contract Administrator, in writing, of requiring a shutdown. The City will endeavour to schedule the shutdown as requested, pursuant to D15.1.
- D15.3 Further to D15.1, shutdown of the Interconnecting Branch Aqueduct and MacLean Reservoir (North Cell) is limited to a maximum of five (5) days, measured from the completion of draining the Interconnecting Branch Aqueduct and MacLean Reservoir (North Cell) by City forces to turn over of system back to the City of Winnipeg for the restoration of Branch Aqueduct and Reservoir operation.
- D15.4 The Interconnecting Branch Aqueduct and MacLean Reservoir (North Cell) will not be taken out of service unless all piping, valves, connectors, fittings and miscellaneous components required to complete the installation are on site, tested, and pre-fitted, to ensure that the Aqueduct and Reservoir can be restored to service with the timeframe noted in D15.3.
- D15.5 In the event that the City of Winnipeg is unable to provide a shutdown window to allow the Interconnector Reconnection critical stage to be met as per D17, the next opportunity for a shutdown window will likely be no earlier than September 15, 2009.

D16. WORKING DAYS

- D16.1 Further to C1.1(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.
- D16.2 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.
- D16.3 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.
- D16.4 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.

D17. CRITICAL STAGES

- D17.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) The Interconnector Reconnection, which consists of completing the Works associated with the Interconnecting Branch Aqueduct and MacLean Reservoir shutdown, shall be completed within a period of five (5) days as described in D15.3 and before April 24, 2009.

D18. SUBSTANTIAL PERFORMANCE

- D18.1 The Contractor shall achieve Substantial Performance within ten (10) consecutive Working Days of the commencement of the Work as specified in D14.
- D18.2 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.

D18.3 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.

D19. TOTAL PERFORMANCE

D19.1 The Contractor shall achieve Total Performance within fifteen (15) consecutive Working Days of the commencement of the Work as specified in D14.

D19.2 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.

D19.3 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.

D20. LIQUIDATED DAMAGES

D20.1 If the Contractor fails to achieve Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:

- (a) The Interconnector Reconnection Critical Stage - Two Thousand Dollars (\$2,000.00) per day;
- (b) Substantial Performance – One Thousand Five Hundred dollars (\$1,500.00);
- (c) Total Performance – Five Hundred dollars (\$500.00).

D20.2 The amounts specified for liquidated damages in D20.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve critical stages, Substantial Performance or Total Performance by the days fixed herein for same.

D20.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D21. JOB MEETINGS

D21.1 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.

D21.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D22. COORDINATION WITH OTHERS

D22.1 The Contractor shall accommodate work by City Forces or third party Contractors related to ongoing operation and maintenance of the MacLean Pumping Station and Reservoir. Vehicular access to MacLean Pumping Station and Reservoir must be maintained at all times.

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

D23.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

MEASUREMENT AND PAYMENT

D24. PAYMENT

D24.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D25. WARRANTY

D25.1 Warranty is as stated in C13.

FORM H1: PERFORMANCE BOND
(See D11)

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 for

BID OPPORTUNITY NO. 90-2009

REPLACEMENT OF VALVE LRV1 AT MACLEAN PUMPING STATION AND RESERVOIR

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 as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT
(PERFORMANCE SECURITY)**
(See D11)

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 90-2009

REPLACEMENT OF VALVE LRV1 AT MACLEAN PUMPING STATION AND RESERVOIR

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 AND DRAWINGS

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

<u>Appendix No.</u>	<u>Title</u>
A	Forms
B	Photos of Valve Chamber LRV1
C	Shop Drawings of City Supplied Valve

<u>Consultant Drawing Number</u>	<u>City Drawing Number</u>	<u>Drawing Title</u>
D265-234-00_01-C-0000_RX	D-11657	Cover Sheet
D265-234-00_01-C-1001_RX	D-11658	Site Access Plan
D265-234-00_01-C-4001_RX	D-11659	Details and Sections
D265-234-00_01-E-4001_RX	D-11660	Electrical Modifications

GENERAL REQUIREMENTS

E2. CONDITION, PROTECTION OF AND ACCESS TO RESERVOIR COMPOUNDS AND AQUEDUCTS

- E2.1 Description
- E2.1.1 This Section details operating constraints for all work to be carried out in close proximity to the MacLean reservoir facility and surrounding piping.
- E2.1.2 The MacLean Reservoir and Pumping Station is a critical component of the City of Winnipeg Regional Water Supply System and work in close proximity to the Reservoir and surrounding yard piping shall be undertaken with an abundance of caution.
- E2.2 Security
- E2.2.1 The Contractor is required to take measures necessary to secure the work areas when the work areas are vacated. The Contractor shall ensure that all openings to valve chambers are properly secured when off site. Valve chamber hatches shall be locked. Removable concrete cover openings shall be secured with timber framing or other approved temporary cover, properly secured to prevent easy removal. The City shall be permitted to include a "double lock" mechanism whereby the City can add a City of Winnipeg lock, to permit access to City personnel in off hours.

E2.3 General Considerations for Work within the MacLean Compound

E2.3.1 Work around the MacLean Reservoir structure shall be limited as follows;

- (a) Light duty trucks, and service vehicles will be permitted on the embankment slope adjacent to the valve chamber.
- (b) Heavy equipment and cranes will not be permitted on the reservoir embankments. Crane staging areas shall be developed at the base of the embankment slopes.
- (c) Under no circumstances will traffic or equipment be permitted on the buried MacLean Reservoir structure or adjacent valve chambers.

E2.3.2 It is the Contractors' responsibility to ensure that all work crew members understand and observe the requirements of E2.2, E2.3 and E2.5. 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.

E2.4 Submittals

E2.4.1 Submit proposed construction equipment specifications to the Contract Administrator for review seven (7) days prior to construction. The submissions need to include sufficient data on operational weights, dimensions, and payloads to facilitate assessment that the proposed construction equipment is not in excess of the typical construction loading that this assessment was based on. Submittal shall include:

- (a) Equipment operating weight and dimensions including wheel or track base, track length or axle spacing, track widths or wheel configurations
- (b) Payload weights
- (c) Load distributions in the intended operating configuration

E2.5 Aqueduct Crossings

E2.5.1 Work around the Aqueduct Interconnector pipe, as shown on the Drawings, shall be limited to a single designated crossing location. The Aqueduct Interconnector is constructed of Prestressed Concrete Cylinder Pipe conforming to AWWA Standard C301, and has limited ability to withstand increased earth and live loading. Therefore, every precaution must be undertaken to ensure that applied loading during all phases of construction is within accepted loading parameters. Generally, legal traffic loads, equivalent to an AASHTO HS20 design vehicle, or other City of Winnipeg regional roadway restrictions in place at the time of the Works, will be permitted to cross at the designated crossing location as shown on the Drawings. The Designated crossing location shall be constructed of a minimum of 300 millimetres of granular materials in such a manner to properly support the proposed load, without rutting. Larger loads may be permitted upon approval of the Contract Administrator. The Contractor must submit details of the equipment proposed for the crossing as per E2.4. Equipment must cross the Aqueduct in a responsible, careful manner (i.e. slowly).

E3. ENVIRONMENTAL PROTECTION

E3.1 The Contractor shall be aware that the MacLean Reservoir compound and piping 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 Reservoir or piping.

E3.2 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.

- E3.3 The Contractor is advised that at least the following Acts, Regulations, and By-laws apply to the Work:
- E3.3.1 Federal
- (a) Canadian Environmental Protection Act (CEPA) c.16
 - (b) Transportation of Dangerous Goods Act and Regulations c.34
- E3.3.2 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) And current applicable associated regulations.
- E3.4 The Contractor is advised that the following environmental protection measures apply to the Work.
- E3.4.1 Materials Handling and Storage
- (a) Construction materials shall not be stored within five (5) metres of the Aqueduct or piping centerline.
- E3.4.2 Fuel Handling and Storage
- (a) Fuelling will not be permitted on site.
- E3.4.3 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.
- E3.4.4 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.
- E3.4.5 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 phone 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.

E3.5 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”, including the patching repair material, and epoxy resin adhesive, as specified in the Specifications, shall be permitted inside the Aqueduct.

E4. BUTTERFLY VALVE, ELECTRIC ACTUATOR, MISCELLANEOUS VALVES AND FITTINGS

E4.1 Supply and Field Testing of 1050 Butterfly Valve

- E4.1.1 The 1050 mm butterfly valve and electric actuator are being supplied under a separate Bid Opportunity, City of Winnipeg Bid Opportunity No. 212-2008. The valve and actuator supplied under Bid Opportunity 212-2008 have been delivered to the City of Winnipeg MacLean Pumping Station at 875 Lagimodiere Boulevard. Contact for the Valve Supply Contract is:

Flo-Crest Equipment

(204) 633-0682

- E4.1.2 The Contractor shall attend a delivery inspection, with the Valve Supply Contractor, and Contract Administrator. The Supply Contractor, prior to turning valves over to the Installation Contractor, shall rectify any damage noted during the delivery inspection. Written acceptance of the valves and actuators by a duly completed "Certificate of Equipment Delivery (Form 200)" (Appendix A) shall constitute acceptance for installation from the Installation Contractor.
- E4.1.3 The City shall perform hydrostatic leakage testing of the valves, after delivery. Any leakage or defects noted during field testing shall be repaired by the Supply Contractor, prior to the Installation Contractor taking possession.
- E4.1.4 The Installation Contractor may leave the valve and actuator in storage at the City facility at 875 Lagimodiere Boulevard, until required on-site for pre-assembly and installation.
- E4.1.5 Once removed from storage at the City facility, the Contractor shall provide 24 hour secure storage for the valve. Once delivered to the Site for pre-assembly and installation, the valve shall remain stored in a secure, on-site storage compound.
- E4.1.6 For the purposes of transportation of the valve from the storage facility to the job site, the Contractor shall ensure the following:
- (a) Valve flange faces are protected from damage by installation of a minimum of 20 mm plywood cover on both faces of each valve.
 - (b) Valve shall be handled only by methods approved by the manufacturer and properly secured to preclude any damage during transport.
- E4.2 Materials
- E4.2.1 Bolts
- (a) Bolts for installation of the 1050 mm butterfly valve will be supplied by the City.
 - (b) Anti-seize compound shall be used on all bolts.
- E4.2.2 Flange Gaskets
- (a) 3mm, full faced, SBR rubber gaskets or neoprene in accordance with AWWA C207. Gaskets shall be one piece construction where possible. Segmented gaskets shall be constructed of a minimum number of segments and joints shall be of dovetailed construction, or other jointing methods approved by the Contract Administrator.
 - (b) Gaskets for the 1050 mm butterfly valve shall be supplied by the City.
- E4.2.3 Chamber Fitting
- (a) Fitting shall be manufactured to AWWA C200
 - (i) Minimum wall thicknesses of 12.7 millimetres.
 - (ii) Minimum steel yield strength of 307 MPa (30,000 psi)
 - (iii) Paint for exposed steel surfaces shall be in accordance with AWWA C210.
 - (iv) Coating and lining shall be two (2) or more layers (5 mils dry film thickness minimum each coat) Polyamide Epoxy, Amerlock 400, Tnemec Series 140F Pota-Pox Plus or approved equal in accordance with B6.
 - (b) Flange for fitting shall be AWWA C207 minimum Class D Flange.
 - (c) Shouldered end shall be to AWWA C606 and shall accommodate dimensions of existing Victaulic Style 44 1,050 millimetre (42") coupling.
- E4.2.4 Pipe couplers for Victaulic Style 44 (Shouldered) End Connections to be to the latest revision of AWWA C606 for Grooved and Shouldered Joints. Minimum requirements are:
- (a) Bolts and nuts to be 316 stainless steel
- E4.2.5 Blind Flanges
- (a) Steel Blind Flanges shall be AWWA C207-01 Class B.

E4.2.6 Threaded Valves

- (a) Small diameter threaded ball valves (75 mm diameter and less) shall be all cast bronze two-piece type with chromium plated ball complete with lever handle rated for minimum 1.0 MPa non-shock cold water service. Bronze material shall conform to ASTM B62. Acceptable product: Apollo, Red-White or approved equal in accordance with B6.

E4.2.7 Threaded Piping, Fittings and Flanges

- (a) Small diameter brass threaded piping, fittings and flanges (75mm diameter and less) shall be cast red brass conforming to ASTM B43 or cast bronze conforming to ASTM B62. Flange dimension and drilling shall be in accordance with ANSI B16.24 - 150#.
- (b) Small Diameter steel threaded fittings and flanges (75mm diameter and less) shall be in accordance with ANSI B16.5 - Class 150.
- (c) Small diameter steel pipe nipples shall be Schedule 40 steel.
- (d) Flange insulator kits shall be Advance Products and Systems including full faced gasket, hole sleeves and washers, or approved equal in accordance with B6

E4.2.8 Paint

- (a) Paint for exposed metal surfaces shall be in accordance to AWWA C210.
- (b) Coating shall be two (2) or more layers (5 mils dry film thickness minimum each coat) Polyamide Epoxy, Amerlock 400, Tnemec Series 140F Pota-Pox Plus or approved equal in accordance with B6.

E4.2.9 Joint Sealant

- (a) Joint sealant for concrete slab shall be self-leveling, polyurethane sealant, Vulkem 45 by Tremco, Sikaflex 1C SL or approved equal in accordance with B6.

E4.3 Construction Methods

E4.3.1 Removal of Existing Valve and Piping

- (a) Remove roof slab.
- (b) Temporarily remove existing 200 millimetre footing drain located underneath 1050 millimetre piping along east wall of chamber. Provide pumping as required to accommodate incoming flow from footing drain.
- (c) Disconnect power and control cabling from existing actuator.
- (d) Remove existing butterfly valve, actuator and spool piece.
- (e) Remove existing chlorination piping.

E4.3.2 Installation of Butterfly Valve

- (a) Modify concrete base to accommodate installation of new valve.
- (b) Install butterfly valve as shown on the Drawings. Valve shall be installed with the valve shaft in the horizontal position. The Supply Contractor is obligated to provide installation supervision, and will completed Form 202 (Appendix A) upon successful installation.
- (c) Install new spool piece between valve and existing shouldered (Vic 44) joint.

E4.3.3 Commissioning of Butterfly Valve

- (a) The Contractor shall assist in operation of the butterfly valve for the purpose of commissioning. The Supply Contractor is required to complete Form 203 (Appendix A), indicating a qualified representative has checked the installed equipment, and has found the equipment to be installed and operating in accordance to the specifications.

E4.3.4 Threaded Valves, Fittings, and Blind Flanges

- (a) Install threaded nipples and flanges where indicated. Wrap all threads with a minimum of two wraps of Teflon tape or "pipe dope" containing Teflon. Isolate dissimilar metal flanges with gaskets, insulating bolt sleeves and non metallic washers.
- (b) Install blind flanges on chlorination and drain piping as indicated on the Drawings.
- (c) Re-install 200 mm footing drain piping underneath 1050 millimetre piping along east wall of chamber.

E4.3.5 Installation of Roof Slab

- (a) Clean joint surfaces as per sealant manufacturer's instructions.
- (b) Re-install roof slab.
- (c) Apply sealant as per manufacturer's instructions.

E4.3.6 Electrical and Instrumentation

- (a) As indicated on the Drawings.

E4.3.7 Surface Restoration

- (a) A temporary access may be constructed along the route shown on the Drawings. Removal of the temporary access will not be required.
- (b) The Contractor shall be responsible for any damage caused by his forces on existing roadways or accesses and shall repair damaged areas to prior condition as determined necessary by the Contract Administrator.
- (c) The Contractor shall be responsible for Site restoration of disturbed grassed areas. Restoration shall consist of applying topsoil and seeding to restore damaged areas to prior condition as determined necessary by the Contract Administrator.

E4.4 Method of Measurement and Basis of Payment

E4.4.1 Replacement of Valve LRV1 at MacLean Pumping Station and Reservoir

- (a) Replacement of Valve LRV1 at MacLean Pumping Station and Reservoir shall be measured on a lump sum basis. The lump sum price shall include construction of the Aqueduct crossing, construction of temporary access as required, removal, replacement and re-sealing of removable concrete slab, removal of butterfly valve and chamber piping, valves and appurtenances, installation of the City-supplied butterfly valve, supply and installation of chamber piping, miscellaneous valves, fittings, appurtenances, and new Victaulic 44 coupling, electrical modifications and surface restoration.