



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 102-2005

WINNIPEG WATER TREATMENT PROGRAM – SUPPLY OF SLUICE GATES

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PART B - BIDDING PROCEDURES

B1. PROJECT TITLE

B1.1 WINNIPEG WATER TREATMENT PROGRAM – SUPPLY OF SLUICE GATES

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, April 5, 2005.

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

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

B3. ENQUIRIES

B3.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

B3.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B3.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B3.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B4. ADDENDA

B4.1 The Contract Administrator may, at any time prior to the Submission deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

B4.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B4.2.1 Addenda will be available in Adobe Acrobat (pdf) format on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division internet site at <http://www.winnipeg.ca/matmgt>.

B4.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division internet site for addenda shortly before submitting his Bid.

B4.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 11 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B5. SUBSTITUTES

- B5.1 The Work is based on the materials, equipment, methods and products specified in the Bid Opportunity.
- B5.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B5.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least seven (7) Business Days prior to the Submission Deadline.
- B5.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the material, equipment, method or product 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 Contract;
 - (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 Contract.
- B5.5 The Contract Administrator, after assessing the request for approval of a substitute, may at his sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B5.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B5.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B5.7 If the Contract Administrator approves a substitute as an "approved equal", any Bidder may use the approved equal in place of the specified item.
- B5.8 If the Contract Administrator approves a substitute as an "approved alternative", any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.
- B5.9 No later claim by the Contractor for an addition to the price(s) because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B6. BID SUBMISSION

- B6.1 The Bid Submission consists of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;
 - (c) Form F: Work Schedule; and
 - (d) Form G1: Bid Bond and Agreement to Bond, or
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
a certified cheque or draft.
- B6.2 All components of the Bid Submission shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely in ink, to constitute a responsive Bid.
- B6.3 The Bid Submission shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B6.3.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.
- B6.4 Bid Submissions submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B6.5 Bid Submissions shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B7. BID

- B7.1 The Bidder shall complete Form A: Bid, making all required entries.
- B7.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B7.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B7.2.
- B7.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B7.4 Paragraph 13 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.

B7.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.

B7.4.2 All signatures shall be original and shall be witnessed except where a corporate seal has been affixed.

B7.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid Submission and the Contract, when awarded, shall be both joint and several.

B8. PRICES

B8.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B8.1.1 Prices on Form B: Prices shall include:

- (a) duty;
- (b) freight and cartage;
- (c) Provincial and Federal taxes [except the Goods and Services Tax (GST) and Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable] and all charges governmental or otherwise paid;
- (d) profit and all compensation which shall be due to the Contractor for the Work and all risks and contingencies connected therewith.

B8.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B8.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B9. QUALIFICATION

B9.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Bidder does not carry on business in Manitoba, in the jurisdiction where the Bidder does carry on business;
- (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;
- B9.2 The Bidder shall be prepared to submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B9.3 The Bidder shall be prepared to submit, within three (3) Business Days of a request by the Contract Administrator, the following technical data for determination that all equipment offered complies with the Specifications outlined in Part E. The Bidder shall also provide the following specific information:
- (a) A list of references demonstrating that the equipment to be supplied under this contract will be designed and manufactured by a company having at least five (5) years prior experience in manufacturing these types of products in the sizes and to the pressure ratings as those specified in the Specifications in Part E.
 - (b) Evidence of compliance with the latest revision of AWWA Standard C560-00 and AWWA C561-04 for sluice gates outlined in the Specifications in Part E.
 - (c) The model name and model number for all gates and ancillary items and combinations thereof.
 - (d) The total net assembled weight of each gate and separately the weight of the slide for each gate.
 - (e) Drawings sufficiently detailed to show that the equipment offered meets the Specifications. The drawings shall include plans, sections, dimensional data, material list for components and mounting details.
- B9.4 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B10. WORK SCHEDULE

- B10.1 The Bidder shall complete Form F: Work Schedule indicating the time frame within which the Bidder proposes to perform each item or category of Work identified thereon.
- B10.2 The Bidder shall, for the purpose of completing Form F: Work Schedule only, assume that, if an award of Contract is made, the letter of intent will be issued twenty five (25) Calendar Days following the Submission Deadline.
- B10.3 The Bidder shall ensure that the proposed time frames are consistent with the requirements to:
- (a) commence the Work as specified in D8;
 - (b) achieve completion of critical stages of the Work as specified in D9;
 - (c) achieve Substantial Performance as specified in D10;
 - (d) achieve Total Performance as specified in D11.
- B10.4 Upon award of the Contract, the Contractor shall be bound to this Work Schedule.

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 not be opened publicly.
- B12.2 Within two (2) Business Days 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 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 12 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 for the time period specified in Paragraph 12 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.7.05(2), 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 13 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 13 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 B9;
- (c) Evaluated Bid Price as determined by method described in B15.4;
- (d) economic analysis of any approved alternative pursuant to B5.

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 Evaluated Bid Price will be determined from the table below.

Supply of Sluice Gates included in this Contract are essential for the timely completion of concurrent and subsequent contracts and the overall schedule for construction of the Water Treatment Plant. The City has determined that delays in the construction schedule resulting partially or wholly from delivery of listed items later than the target dates will be in the order of \$3,500 per calendar day. Bids will be evaluated therefore on the basis of the most cost-effective submission in accordance with the criteria below.

The estimated cost of component deliveries beyond the target dates (\$3,500 per calendar day) is added to the Total Bid Price (from Form B) to determine the Evaluated Bid Price. The lowest Evaluated Bid Price of a qualified bidder will be recommended for award.

Tag No.s	Target Delivery Date	Bidder's Delivery Date – Form J – Schedule	No. of Days Difference (if negative, enter "0") (B) – (A)
	(A)	(B)	
SG-009 and SG-010 wall thimbles (2)	August 15, 2005		(1)
SG-003, SG-004, SG-008 wall thimbles (3)	August 29, 2005		(2)
SG- 001, SG- 002, SG-005, SG-006, SG-007 wall thimbles (5)	October 7, 2005		(3)
Total days difference (1) + (2) +(3)			(4)

Total Bid Price (from Form B) **(5)**

Total Days (4) above x \$3500 =**(6)**

EVALUATED BID PRICE (5) + (6) =

- B15.5 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.
- B15.5.1 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.
- B15.6 This Contract will be awarded as a whole.

B16. AWARD OF CONTRACT

- B16.1 The Award Authority 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.

PART C - GENERAL CONDITIONS

C1. GENERAL CONDITIONS

C1.1 The *General Conditions for the Supply and Delivery of Goods* (Form 21: 88 03) are applicable to the Work of the Contract.

C1.1.1 The *General Conditions for the Supply and Delivery of Goods* 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 the Supply and Delivery of Goods*, 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 "Board of Commissioners" or "Commissioner" wherever it appears in the General Conditions and substituting the "Chief Administrative Officer".
- D1.4 The General Conditions are amended by striking out "Tender Package" wherever it appears in the General Conditions and substituting "Bid Opportunity".
- D1.5 The General Conditions are amended by striking out "Tender Submission" wherever it appears in the General Conditions and substituting "Bid Submission".
- D1.6 The General Conditions are amended by striking out "Bidding Instructions" wherever it appears in the General Conditions and substituting "Bidding Procedures".

D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of the supply and delivery of ten (10) sluice gates and ancillary equipment and including supervision of installations and functional testing of the gates.
- D2.2 The major components of the Work are as follows:
- (a) Supply and delivery of nine (9) 2743mm x 2743mm sluice gates with wall thimbles, stems, and gear operators.
 - (b) Supply and delivery of one (1) 1830mm x 1830mm sluice gate with wall thimble, stem, and gear operator.
 - (c) Supervision of the installation and the functional testing of the gates and ancillary equipment as outlined in Section E.
 - (d) Provision of shop drawings and record drawings as outlined in Section E.
 - (e) Provision of six (6) sets of Operation and Maintenance Manuals as outlined in Section E.
 - (f) Training of City of Winnipeg Operations and Maintenance personnel as outlined in Section E.
 - (g) Supply and delivery of one (1) portable electric drill suitable for operation of gates supplied under this Contract.
 - (h) Other goods and services as specified in Section E.

D3. DEFINITIONS

- D3.1 When used in this Bid Opportunity:
- (a) "**Business Day**" means any Calendar Day, other than a Saturday, Sunday, or a Statutory or Civic Holiday;

- (b) "**Submission Deadline**" and "**Time and Date Set for the Final Receipt of Bids**" mean the time and date set out in the Bidding Procedures for final receipt of Bids;
- (c) "**Installation Contractor**" means the General Contractor retained by the City, under a separate contract, to install the sluice gates and related equipment supplied under this contract;
- (d) "**Substantial Performance**" shall have the meaning attributed to it in the Builders' Lien Act (Manitoba), or any successor legislation thereto.
- (e) **ANSI** means American National Standards Institute
- (f) **ASME** means American Society of Mechanical Engineers
- (g) **ASTM** means American Society for Testing and Materials
- (h) **AWWA** means American Water Works Association
- (i) **CSA** means Canadian Standards Association
- (j) **IEC** means International Electrotechnical Commission
- (k) **ISO** means International Organization for Standardization
- (l) **NACE** means National Association of Corrosion Engineers
- (m) **NEMA** means National Electrical Manufacturers Association
- (n) **NSF** means National Sanitation Foundation
- (o) **SAE** means Society of Automotive Engineers

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

D5. NOTICES

- D5.1 GC.7.05 is hereby amended to delete reference to "registered mail" and to replace same with "ordinary mail".
- D5.2 GC.7.05 is further amended hereby to include delivery by facsimile transmission (fax) as an acceptable means of delivering notices, consents, approvals, statements, authorizations, documents or other communications required or permitted to be given under this Contract. Deliveries by fax will be deemed to have been received on the day of delivery, if a business day, or if not a business day, on the business day next following the day of delivery.
- D5.3 Further to GC.7.05, all notices, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.4, D5.5 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.

- D5.4 All notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:

The City of Winnipeg
Chief Administrative Officer Secretariat
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: (204) 949-1174

- D5.5 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

SUBMISSIONS

D6. AUTHORITY TO CARRY ON BUSINESS

- D6.1 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.

D7. PERFORMANCE SECURITY

- D7.1 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.
- D7.2 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.3.01 for the return of the executed Contract.

SCHEDULE OF WORK

D8. COMMENCEMENT

D8.1 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.

D9. CRITICAL STAGES

D9.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

- (a) The critical stages shall be the **delivery dates for wall thimbles** as submitted by the Bidder on Form F: Work Schedule. These critical stage are :
- (i) Delivery of wall thimbles for SG-009 and SG-010
 - (ii) Delivery of wall thimbles for SG-003, SG-004, and SG-008
 - (iii) Delivery of wall thimbles for SG-001, SG-002, SG-005, SG-006, and SG-007

D10. SUBSTANTIAL PERFORMANCE

D10.1 The Contractor shall achieve Substantial Performance by April 28, 2006.

D10.2 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.

D10.3 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.

D11. TOTAL PERFORMANCE

D11.1 The Contractor shall achieve Total Performance by May 12, 2006.

D11.2 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.

D11.3 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.

D12. LIQUIDATED DAMAGES

D12.1 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 Calendar Day for each and every Calendar Day following the days fixed herein for same during which such failure continues:

- (a) Delivery of wall thimbles for SG-009 and SG-010 – three thousand, five hundred dollars (\$3,500);

- (b) Delivery of wall thimbles for SG-003, SG-004, and SG-008 – three thousand, five hundred dollars (\$3,500);
 - (c) Delivery of wall thimbles for SG-001, SG-002, SG-005, SG-006, and SG-007 – three thousand, five hundred dollars (\$3,500);
 - (d) Substantial Performance – one thousand, five hundred dollars (\$1,500);
 - (e) Total Performance – five hundred dollars (\$500).
- D12.2 The amounts specified for liquidated damages in D13.1 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.
- D12.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

MEASUREMENT AND PAYMENT

D13. PAYMENT SCHEDULE

- D13.1 Further to GC.9.01 and GC.9.03, payment shall be in accordance with the following payment schedule:
- (a) Measurement and payment for Item 1 "Supply and Delivery of AWWA C560-00 and C561-04 Sluice Gates" will be made at the Contract Unit Price for each size and type of gate listed in Form B: Prices, and shall include gates, thimbles, stems, gear operators and accessories, and delivery and functional testing.
 - (i) For Items No. 1a.), 1b.), and 1c.) eighty (80) per cent of the unit price bid will be paid upon issuance of Form 200: Certificate of Equipment Delivery.
 - (ii) For Items No. 1a.), 1b.), and 1c.) a further ten (10) per cent of the unit price bid will be paid upon issuance of Form 202: Certificate of Satisfactory Installation
 - (iii) For Items No. 1a.), 1b.), and 1c.) the final ten (10) per cent of the unit price bid will be paid upon issuance of Form 203: Certificate of Satisfactory Performance.
 - (b) Measurement and payment for Item 2 "Additional Days for On-site Supervision of Functional Testing" will be made at the Contract Unit Price bid for each day of on-site supervision requested by the Contract Administrator. Payment will be made only for additional days beyond the required days specified in E10 Site Visit for installation instruction, commissioning, initial operation and functional testing of the equipment which will be included in Item 1.
 - (c) Measurement and Payment for Item 3 "Provision of Operation and Maintenance Manuals" will be made at the fixed lump sum amount set out in Form B: Prices.
 - (d) Measurement and Payment for Item 4 "Training of City Operations and Maintenance Staff" will be made at the fixed lump sum amount set out in Form B: Prices.
- D13.2 Further to GC.9.03:
- (a) any payment made by the City to the Contractor on account of a progress estimate shall be less any holdback required to be made by The Builders' Liens Act, and such holdbacks or other amounts which the City is entitled to withhold pursuant to the Contract;
 - (b) payment on account of the final progress estimate, including the holdback made by the City pursuant to The Builders' Liens Act, shall be paid to the Contractor when the time for filing liens or trust claims has elapsed, unless the City is in receipt of a lien or trust claim.

WARRANTY

D14. WARRANTY

- D14.1 Notwithstanding GC.10.01, the warranty period shall begin on the date of Total Performance and shall expire two (2) years thereafter unless extended pursuant to D15.2, in which case it shall expire when provided for thereunder.
- D14.2 If a defect or deficiency prevents the full and normal use or operation of the Work or any portion thereof, for purposes of calculating the warranty period, time shall be deemed to cease to elapse for the defective or deficient portion, and for any portion of the Work whose use or operation is prevented by such defect or deficiency, as of the date on which the defect or deficiency is observed or the use or operation is prevented and shall begin to run again when the defect or deficiency has been corrected or the Work may be used or operated to the satisfaction of the Contract Administrator.
- D14.3 Notwithstanding GC.10.01, GC.10.02, D15.1, and D15.2 if any law of Manitoba or of the jurisdiction in which the Work was manufactured requires, or if the manufacturer provides, a longer warranty period or a warranty which is more extensive in its nature, then the provisions of such law or manufacturer's warranty shall apply.

D15. INDEMNITY

- D15.1 Notwithstanding GC.7.03, the Contractor shall save harmless and indemnify the City for twice the contract price plus two (2) million dollars against all costs, damages or expenses arising from actions, claims, demands and proceedings, by whomsoever brought, made or taken as a result of acts or omissions of the Contractor, his/her Subcontractors, employees or agents in the performance or purported performance of his Work, and more particularly from:
- (a) accidental injury to or death of any person whether retained by or in the employ of the Contractor or not, arising directly or indirectly by reason of the performance of the Work, or by reason of any trespass on or damage to property;
 - (b) damage to any property owned in whole or in part by the City, or which the City by duty or custom is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain;
 - (c) damage to, or trespass or encroachment upon, property owned by persons other than the City;
 - (d) failure to pay and obtain a discharge of a notice of claim for lien served upon the City in accordance with the requirements of The Builder's Lien Act;
 - (e) failure to pay a Workers Compensation assessment, or Federal or Provincial taxes;
 - (f) unauthorized use of any design, device, material or process covered by letters patent, copyright, trademark or trade name in connection with the Work;
 - (g) inaccuracies in any information provided to the City by the Contractor.

D16. RECOMMENDED SPARE PARTS LIST

- (a) The Contractor shall provide a price list for spare parts recommended for those components whose failure would render the supplied equipment inoperative. Any special tools or other ancillary items necessary for commissioning and/or proper maintenance shall be listed. Prices shall be PST and GST extra and shall remain valid until Total Performance is achieved.

FORM H1: PERFORMANCE BOND
(See D7)

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. 102-2005

WINNIPEG WATER TREATMENT PROGRAM – SUPPLY OF SLUICE GATES

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

E1. GENERAL

E1.1 Work Included.

- (a) Supply and supervision of the installation and commissioning of sluice gates to be installed in a concrete, chlorinated potable water storage tank.
- (b) Where no specifications are provided for an item, American Water Works Association (AWWA) C560-00 and AWWA C561-04 applies.
- (c) Provide sluice gates and related equipment information to Contract Administrator during design to facilitate tendering of the construction contract for the construction of the Clearwell.
- (d) Provide Shop Drawings of the equipment to facilitate design of the Clearwell.
- (e) Fabricate and factory test the equipment, shop assemble and inspect sluice gates to ensure that field fitting shall not be required.
- (f) Provide Operation and Maintenance Manuals.
- (g) Produce as-built drawings.
- (h) Provide operator training and maintenance instructions.
- (i) Training of the installation personnel and supervise the installation of the equipment.
- (j) Place into operation and performance test of the equipment.
- (k) Provide technical support and remedy defects during the two year warranty period.
- (l) All deliveries are to be in accordance with the Work Schedule (Form F) specified.

E1.2 Metric Units

While it is intended that this specification be written in consistent metric units, it is recognized that:

- (a) manufacturer's standard equipment may not be available in the units specified

The following Imperial to Metric conversions shall be used where applicable:

1 in. = 25.4 millimetre	1 lb = 0.45350 kilograms
1 ft. = 0.30480 metre	1 gal.Imp. = 4.5461 litre
1 lb = 4.448 Newton	1 gal.US = 3.7854 litre
1 lb.ft. = 1.3558 Newton metre (torque)	1 ft. ³ = 28.317 litre
1 lb.ft. ² = 0.04214 kilograms metre squared (inertia)	1 horsepower = 0.746kilowatt

E2. SUBMITTALS

E2.1 Shop Drawings:

- (a) "Shop Drawings" are defined in GC.1.01. The Contractor shall submit Shop Drawings in accordance with GC.4.04. Submit six (6) copies of all Shop Drawings in a minimum International Organization for Standardization (ISO) A4 size (210 X 297) and one (1) good quality reproducible (sepia, mylar) shall also be submitted. Shop drawing sheet size other than ISO A4 shall be one (1) reproducible transparency and three (3) prints.

- (b) Arrange for the preparation of clearly identified Shop Drawings for all significant items, or as the Contract Administrator may reasonably request. Shop Drawings are to clearly indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes, and other information necessary for the completion of the Work. Where articles or equipment attach or connect to other articles or equipment, clearly indicate that all such attachments and connections have been properly coordinated, regardless of the trade under which the adjacent articles or equipment shall be supplied and installed. Shop Drawings are to indicate their relationship to specifications. Notify the Contract Administrator in writing of any deviations in Shop Drawings from the requirements of the Contract Documents.
- (c) Examine all Shop Drawings prior to submission to the Contract Administrator to ensure that all necessary requirements have been determined and verified and that each Shop Drawing has been checked and coordinated with the requirements of the Work and the Contract Documents. Where Shop Drawings are supplied by Sub-contractors, stamp the drawings to indicate that the drawings have been examined by the Contractor as noted in the previous sentence. Shop Drawings not stamped, signed, and dated by the Contractor shall be returned without being reviewed and stamped "NOT REVIEWED".
- (d) Submit Shop Drawings with reasonable promptness and in an orderly sequence so as to cause no delay in the Work. Failure to submit Shop Drawings in ample time is not to be considered sufficient reason for an Extension of Time and no extension by reason of such default shall be allowed. Further to GC.8.01(1), submit a schedule fixing the dates for submission and return of Shop Drawings within fifteen (15) calendar days after commencement of the Work.
- (e) The Contract Administrator shall review and return Shop Drawings in accordance with the schedule agreed upon or otherwise with reasonable promptness so as to cause no delay to the Work.
- (f) Shop Drawing review by the Contract Administrator is solely to ascertain conformance with the general design concept of the project and with the information given in the specifications. Responsibility for approval of detail design inherent in Shop Drawings rests with the Contractor and review by the Contract Administrator shall not imply such approval.
- (g) Review by the Contract Administrator shall not relieve the Contractor of his responsibility for errors or omissions in Shop Drawings or for proper completion of the Work in accordance with the Contract Documents.
- (h) Shop drawings shall be returned to the Contractor with one of the following notations:
 - (i) When stamped "REVIEWED", distribute additional copies as required for execution of the Work.
 - (ii) When stamped "REVIEWED AS MODIFIED", ensure that all copies for use are modified and distributed, same as specified for "REVIEWED".
 - (iii) When stamped "REVISE AND RESUBMIT", make the necessary revisions, as indicated, consistent with the Contract Documents and submit again for review.
 - (iv) When stamped "NOT REVIEWED", submit other drawings, brochures, etc. for review consistent with the Contract Documents.
 - (v) Only Shop Drawings bearing "REVIEWED" or "REVIEWED AS MODIFIED" shall be used on the Work unless otherwise authorized by the Contract Administrator.
- (i) After submittals are stamped "REVIEWED" or "REVIEWED AS MODIFIED", no further revisions are permitted unless resubmitted to the Contract Administrator for further review.

- (j) All shop drawings shall be identified in the lower right hand corner as follows:
 - (i) The City's bid opportunity number.
 - (ii) Description or model number of the item.
 - (iii) Serial numbers of equipment.
 - (iv) Date (to be revised per resubmission).
- (k) At the time of submission, the Contractor shall inform the Contract Administrator in writing of any deviation in the Shop Drawings from the requirements of the Contract Documents. The Shop Drawings shall include a copy of the technical specifications and marked by the Contractor as either in "compliance" or "deviation" with comment.
- (l) The Contractor shall make any corrections required by the Contract Administrator and shall resubmit corrected copies of each Shop Drawing. The Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections requested by the Contract Administrator on previous submissions.
- (m) By approving and submitting Shop Drawings, the Contractor thereby represents that he had determined and verified all field measurements, field construction criteria, materials, catalogue numbers and similar data, or shall do so, and that he has checked and coordinated each Shop Drawing and sample with the requirements of the Work and of the specifications.
- (n) All costs associated with Shop Drawing preparation and submission shall be included in the unit prices provided for various items of equipment.
- (o) Shop Drawings shall be provided to the Contract Administrator in accordance with the work schedule (Form F) provided.
- (p) The City will not accept responsibility for the cost of changes necessary if any equipment is fabricated without prior review of Shop Drawings as provided for above.
- (q) Final acceptance of equipment shall be given after commissioning and successful completion of leakage testing.
- (r) Drawings shall show Design Material Specifications and Bill of Materials for use in checking deliveries.
- (s) Drawings shall show performance data for equipment. For each gate provide:
 - (i) Frame assembly details.
 - (ii) Concrete embedment and attachment details.
 - (iii) Installation instructions.
 - (iv) Thimble dimensions.
 - (v) Operator details.
 - (vi) Stem details.
 - (vii) Seal details.
- (t) In the event of alterations or changes being authorized by the Contract Administrator, the Contractor shall furnish the revised Drawings indicating these changes.
- (u) The Shop Drawings shall show exactly the location of all anchor bolts, brackets, supports, pipe connections, etc., that must be installed under the Installation Contract.

E2.2 Operation and Maintenance Manuals shall be submitted in accordance with the following.

- (a) For each type of equipment, six (6) sets of Operation and Maintenance Manuals shall be submitted to the Contract Administrator for review. The Contractor shall provide these manuals sixty (60) calendar days in advance before commencement of equipment start-up and commissioning.
- (b) All instructions in these manuals shall be in the English language to guide the City in the proper Operation and Maintenance of the equipment.
- (c) Bind contents in a three-“D-Ring”, hard-covered, plastic-jacketed binder with full cover and spine insert. Organize contents into applicable sections of work, parallel to specifications breakdown.
- (d) In addition to information called for in the other parts of this document, the following shall be included:
 - (i) Title sheet, labelled “Operation and Maintenance Instructions,” containing project name and date.
 - (ii) List of contents.
 - (iii) Reviewed Shop Drawings of all equipment.
 - (iv) Certified factory test results. Design calculations and supporting data for all gates showing stresses, loads, and deflection for critical parts under design head conditions.
 - (v) Full description of entire mechanical system and ITP operation.
 - (vi) Names, addresses, and telephone numbers of all major sub-contractors and suppliers.
 - (vii) Detailed specification and Operation and Maintenance instructions for all items of equipment provided including a preventative maintenance program.
 - (viii) An itemized list of spare parts recommended for five (5) years service, particularly those components failure of which shall render the equipment supplied inoperative. Any special tools or other ancillary items necessary for commissioning and/or proper Operation and Maintenance shall also be listed. These prices shall be available to the City at any time prior to the issuance of the Certificate of Acceptance.
 - (ix) Part books that illustrate and list all assemblies, sub-assemblies, and components.
 - (x) Routine test procedures.
 - (xi) Troubleshooting chart showing description of trouble, probable cause, and the suggested remedy.
- (e) The Contractor shall modify and supplement the manual as required by the Contract Administrator. When accepted, six (6) additional copies shall be provided by the Contractor for distribution purposes.
- (f) The Contract shall not be considered complete, for the purpose of issuing a Certificate of Substantial Performance, until the above manuals have been completed and submitted to the satisfaction of the Contract Administrator.
- (g) The payment for the manuals shall only be made when all manuals are approved and received.

E3. PERFORMANCE

- E3.1 The sluice gates shall be designed to withstand the design head specified in the Sluice Gate Schedule (Item E6).
- E3.2 Sluice gates shall be substantially watertight under the design head conditions. Allowable leakage shall be as per AWWA standard C560-00 for Cast Iron and C561-04 for fabricated Stainless Steel Slide Gates.
- E3.3 All sluice gates shall be suitably designed for a continuous immersion in up to 5 mg/L chlorine concentration. All sluice gates shall also be suitable for non-continuous immersion of 50 mg/L of chlorine.

E4. ACCEPTABLE SLUICE GATE MANUFACTURERS

- E4.1 Cast Iron
- (a) Rodney Hunt Company
 - (b) Waterman Industries Inc.
 - (c) Hydro Gate Company
 - (d) Or approved equal
- E4.2 Stainless Steel
- (a) H. Fontaine Ltd.
 - (b) Waterman Industries Inc.
 - (c) Or approved equal

E5. SLUICE GATES SPECIFICATIONS

- E5.1 General
- (a) Gates shall be non self-contained and of rising stem configuration as indicated on the gate schedule.
 - (b) Wall thimbles shall be stainless steel or cast iron and shall be supplied by the same manufacturer as the gate. The wall thimble material shall match the gate material. All thimbles are to be Type "E". Material thickness should be according to the manufacturer's recommendations and be of sufficient resistance to handle the operating forces.
 - (c) The cast iron gate frame shall be cast in one piece.
 - (d) The stainless steel gate frame shall be constructed of structural members or formed plate welded to form a rigid one-piece frame.
 - (e) The frame shall be flange back and suitable for mounting on a wall thimble.
 - (f) The frame configuration shall allow the replacement of the top and side seals without removing the gate frame from the wall thimble.
 - (g) For the stainless steel gate, the slide shall consist of a flat plate reinforced with formed plates or structural members to limit its deflection to 1/720 of the gate's span under the design head.

- (h) The gate guide liner for a stainless steel gate shall be made of "True" ultra high molecular weight polyethylene (UHMWPE) and shall be of such length as to retain and support at least two thirds (2/3) of the vertical height of the slide in the fully open position.
- (i) Side and top seals for stainless steel gates shall be made of "True" UHMWPE of the self-adjusting type. A continuous compression cord shall ensure contact between the UHMWPE guide and the gate in all positions. The sealing system shall maintain efficient sealing in any position of the slide and allow the water to flow only below the slide plate.
- (j) For the stainless steel gate, the flush bottom seal shall be set and mechanically fastened into the bottom member of the frame.

E5.2 Lift Assemblies

- (a) The operating stem shall be of stainless steel and designed to transmit in compression at least two (2) times the rated output of the operating manual mechanism with a 178 Newton effort on the crank or handwheel.
- (b) The stem shall have a slenderness ratio (L/R) of less than two hundred (200). The threaded portion of the stem shall have machine cut threads of the Acme type.
- (c) For stems in more than one piece and with a diameter of 45 millimetres and larger, the different sections shall be joined together by solid couplings. The couplings shall be threaded and keyed or threaded and bolted and shall be of greater strength than the stem. Stems with a diameter smaller than 45 millimetres shall be pinned to an extension tube.
- (d) Stem guides shall be adjustable and spaced in accordance with the manufacturer's recommendation. The L/R ratio shall not be greater than two hundred (200).
- (e) Rising stem gates shall be provided with a clear stem cover. The stem cover shall have a cap and condensation vents, and a clear mylar position indicating tape. The tape shall be field applied to the stem cover after the gate has been installed and positioned.

E5.3 Lifting Mechanism

- (a) Operators of the types listed under item E6 shall be provided by the Contractor. Each manual operator shall be designed to operate the gate under the maximum specified seating and unseating heads by using a maximum effort of 178 Newton on the crank or handwheel, and shall be able to withstand, without damage, an effort of 356 Newton.
- (b) Gearboxes shall be provided when required to maintain the operating force below 178 Newton. All bearings and gears shall be totally enclosed in a weather tight housing. The pinion shaft of crank-operated mechanisms shall be constructed of stainless steel and supported by roller or needle bearings. The operating shaft shall be fitted with a 50 millimetres square operating nut and removable crank. The crank shall be fitted with a corrosion-resistant rotating handle. The maximum crank radius shall be 380 millimetres and the maximum handwheel diameter shall be 600 millimetres.

E5.4 Materials

(a) Stainless Steel Gates shall be as per the following:

Part	Material
Frame	Stainless steel American Society for Testing and Materials (ASTM) A-240 316L
Slide	Stainless steel ASTM A-240 316L
Guides	Stainless steel ASTM A-240 316L
Stem Guides	Stainless steel ASTM A-240 316L
Threaded stem	Stainless steel ASTM A-276, Type 316
Seats	UHMWPE, ASTM D-4020-96
Stem Guide Bushings	Stainless Steel ASTM A276 316
Anchor Bolts and Fasteners	Stainless Steel ASTM F593 or F594 GR2 316
Wedges and Pressure pads	Stainless Steel ASTM A276 316 or ASTM A743
Gate Operator Lift Nut	Bronze ASTM B584 or ASTM B505
Operator and lift	Enclosed gear lift with pedestal suitable for operating with an electric portable drill and manual opening.
Stem Couplings	Stainless steel ASTM A-276 316
Stem cover	Galvanized steel pipe with acrylic window with graduations
Wall Thimble	Stainless steel ASTM A-240 316L
Thrust Nuts	Stainless Steel ASTM A276, 316
Pedestal	Cast iron - ASTM A48 Class 30; or ASTM A126, Class B; or Steel – ASTM A36
Gears	Steel AISI 8620, 4140, or 1117
Gear Housing	Stainless Steel ASTM A276 316, or ASTM A312, or ASTM A376
Flush Bottom Sill	Extruded or molded neoprene
Flush Bottom Sill Retainer	Stainless Steel ASTM A276 316

(b) Cast iron gates shall be as per the following:

Part	Material
Frame	Cast iron ASTM A48 Class 30 or ASTM A126, Class B - Cast in one piece
Slide	Cast iron ASTM A48 Class 30 or ASTM A126, Class B - Cast in one piece
Threaded stem	Stainless steel ASTM A-276, Type 316
Stem extension and guides	Stainless steel ASTM A-276, Type 316
Stem Couplings	Stainless steel-ASTM A582 303; or ASTM A276 302 or 304
Stem Guide Bushings	Stainless Steel ASTM A276 316
Fasteners	Stainless Steel Type 316
Wedges	Manganese Bronze ASTM B584 Alloy 865
Wedge Blocks	Cast iron ASTM A48 Class 30 or ASTM A126, Class B - Cast in one piece
Operator and lift	Enclosed gear lift with pedestal suitable for operating with an electric portable drill and manual opening.
Stem cover	Galvanized steel pipe with acrylic window with graduations
Wall Thimble	Cast iron ASTM A48 Class 30 or ASTM A126, Class B
Pedestal	Cast iron - ASTM A48 Class 30; or ASTM A126, Class B; or Steel – ASTMA36
Thrust nut, Lift Nut	Stainless Steel ASTM A276, 316
Seat Facings	Bronze-ASTM B 21 Alloy 482
Gears	Steel-AISI 8620, AISI 4140
Gear Housing	Cast iron ASTM A48 Class 30 or ASTM A126, Class B
Bearings	Bronze-ASTM B148

E5.5 Surface Treatment and Finishes

(a) Cast Iron Gate

- (i) Prior to the application of coatings, submerged surfaces shall be prepared to National Association of Corrosion Engineers (NACE) Steel Structure Painting Council (SSPC) -SP10- Near-White Metal Blast Cleaning. Non submerged surfaces shall be prepared to SSPC SP6.
- (ii) Surfaces shall be coated with a protective system in accordance to AWWA Standard C550 – Protective interior coatings of Valves and Hydrants, which can be used in a potable water system.
- (iii) Surfaces shall comply with American National Standards Institute (ANSI) / National Sanitation Foundation (NSF) 61” Drinking Water System Components – Health Effects”.
- (iv) Submerged or surfaces subjected to splashing require two (2) or more layers (5 mils minimum each coat) of Polyamide Epoxy, Amerlock 400, Tnemec Series 140F Pota-Pox Plus or approved equal. Application as per manufacturer’s recommendations.
- (v) Above ground surfaces require one (1) layer (5 mils minimum) of a high solids epoxy coating. Coating is not required to be suitable for potable water. Application as per manufacturer’s recommendations.

- (vi) Coatings shall be holiday free as defined in Section 5.1 of AWWA Standard C550.
 - (vii) After coated surfaces are dry, a protective grease shall be applied to all machined or bearing surfaces and holes to prevent corrosion prior to installation.
- (b) Stainless Steel Gate
- (i) Carbon and alloyed steel surfaces require coatings. Stainless steel does not require coatings.
 - (ii) Stainless steel to be cleaned to such that all surfaces are free of dirt and grease.
 - (iii) All surfaces requiring coatings to be cleaned to NACE SSPC-SP6.
 - (iv) Prior to application of coatings, submerged surfaces shall be prepared to NACE SSPC-SP10- Near-White Metal Blast Cleaning. Non submerged surfaces shall be prepared to SSPC SP.
 - (v) Submerged surfaces shall be coated with a protective system in accordance to AWWA Standard C550 – Protective interior coatings of Valves and Hydrants, which can be used in a potable water system.
 - (vi) Submerged surfaces shall comply with ANSI/NSF 61” Drinking Water System Components – Health Effects”.
 - (vii) Submerged or surfaces subjected to splashing require two (2) or more layers (5 mils minimum each coat) of Polyamide Epoxy, Amerlock 400, Tnemec Series 140F Pota-Pox Plus or approved equal. Application as per manufacturer’s recommendations.
 - (viii) Above ground surfaces require one (1) layer (5 mils minimum) of a high solids epoxy coating. Coating is not required to be suitable for potable water. Application as per manufacturer’s recommendations.
 - (ix) Coatings shall be holiday free as defined in Section 5.1 of AWWA Standard C550.
 - (x) After coated surfaces are dry, a protective grease shall be applied to all machined or bearing surfaces and holes to prevent corrosion prior to installation.

E6. SLUICE GATE SCHEDULE

Specification Standard:	AWWA C560-00 for Cast Iron Slide Gates or AWWA C561-04 for fabricated Stainless Steel Slide Gates				
Tag No.:	To be Confirmed with the Contract Administrator				
Nominal Size:	1830 millimetre x 1830 millimetre (T-SG-001) 2743 millimetre x 2743 millimetre (T-SG-002 to SG-010)				
Type:	Suitable for a Concrete Clearwell Wall, Rising Stem with Gear Operator and Manual Crank/handwheel, Capability for a Portable Drill Operation.				
Thimble Invert to Base of Pedestal (Top of Concrete)	Gate No.	Thimble Invert Elevation (metres)	Base of Pedestal (Top of Concrete Elevation) (metres)	Max. Water Level (metres)	
	T-SG-001	231.25	238.70	237.00	
	T-SG-002	231.25	238.70	237.00	
	T-SG-003	231.25	238.70	237.00	
	T-SG-004	231.25	238.70	237.00	
	T-SG-005	231.25	238.70	237.00	
	T-SG-006	227.50	238.20	237.00	
	T-SG-007	227.50	238.20	237.00	
	T-SG-008	227.50	238.20	237.00	
	T-SG-009	227.50	238.20	237.00	
	T-SG-010	227.50	238.20	237.00	
	Confirm all Elevations Prior to Manufacturing				
	Seating Head:	Refer to Table Above			
Unseating Head:	15 metre maximum				
Wall Thickness:	900 millimetre at the base and 450 at the top				
Wall Thimble: T-SG-001	Thimble Length 450 millimetre (outside face to outside face), Type "E" Cast Iron or SS-316 suitable for connection to the ANSI/AWWA C207 Class B flange (1830 millimetre Inside Diameter), Square to Circular				
T-SG-002, T-SG-009, T-SG-010	Thimble Length 450 millimetre (outside face to outside face), Type "E" Cast Iron or SS-316 suitable for connection to the ANSI/AWWA C207 Class B flange (2743 millimetre Inside Diameter), Square to Circular				
T-SG-003 to T-SG-008	Thimble Length 450 millimetre (outside face to outside face), Type "E" Cast Iron or SS-316, 2743 millimetre x 2743 millimetre, Square to Square				
Operator:	Geared Manual Crank/Handwheel and Portable Electric Drill, Suitable for Easy Floor Level Operation				
Stem Cover:	Galvanized steel pipe with acrylic window with graduations.				
Ancillary Equipment:	Portable Electric Drill				
Leakage Test:	AWWA C560-00 Cast Iron Slide Gates AWWA C561-04 for Fabricated Stainless Steel Slide Gates				

E7. EQUIPMENT DELIVERY

- E7.1 Sluice gates and related equipment shall be delivered adjacent to the Deacon Booster Pumping Station located at Section 23, Township 10, Range 4 EPM. The Installation Contractor shall be responsible for taking delivery of the equipment. The Contractor shall provide a detailed schedule within 15 calendar days after notification of acceptance.
- E7.2 The schedule shall allow for:
- (a) A period for the Contract Administrator [allow three (3) weeks] to review and comment on the Contractor's Shop Drawings for the equipment to be supplied.
- E7.3 The Contractor shall be entitled to an extension of the quoted delivery period on account of:
- (a) Delay attributable to Acts of God or other matters, which were not the fault of the Contractor and over which it had no control, provided that the Contractor took all possible action to reduce delays and notified the City promptly of the occurrence of such delays.
- E7.4 Delivery of parts or materials, which are required in advance of the delivery of the equipment, shall be made when required by the City.
- E7.5 Written acceptance of receipt, at delivery, by the Installation Contractor shall constitute "Delivery to Site" under this contract. A representative from each of the following groups shall be in attendance at the time of delivery: The Installation Contractor, and the Contract Administrator. A duly executed "Certificate of Equipment Delivery" (Form 200) shall be completed. A sample of this certificate is included in the appendix named "Forms". Any damage identified during the inspection shall be repaired as per the manufacturer's recommendations by the Contractor at no cost to the City.
- E7.6 The Contractor shall, ten (10) days before delivery, give notice to the Contract Administrator so that arrangements for receipt and for inspection can be made. The shipping lists of materials shall be carefully checked by the Contractor in the presence of the Contract Administrator and the City.
- E7.7 The Contractor shall deliver the gates to the site as specified in the AWWA C560-00 and AWWA C561-04, using methods, which do not damage castings or protective coatings. The Contractor shall provide off-loading requirements and procedures to the Contract Administrator well in advance of the arrival of the equipment.
- E7.8 Shipments shall be free on board (F.O.B.) destination, freight prepaid. Cost of shipping to the site shall be included.
- E7.9 No delivery to the site of the work shall occur until reviewed Shop Drawings are received by the Contractor.
- E7.10 The Installation Contractor shall be responsible for storing the equipment, appurtenances and materials and for protection against weather, loss, damage, or theft. The Contractor shall be responsible for providing the Installation Contractor with full instructions in writing of all precautions to be observed in connection with the storing and protection of the equipment. A copy of all instructions shall be provided to the Contract Administrator.
- E7.11 All costs associated with delivery, shipping, supervision of installation, commissioning, etc., shall be included in the unit price provided.

E8. TESTING

- E8.1 Operate each gate with and without liquid on both sides to show that each gate can be operated with applied torques within design limits.
- E8.2 Contractor to coordinate with others for the field leakage test of the sluice gates.
- E8.3 In the event any sluice gate field leakage test is not successful, retesting shall be required.
- E8.4 Depending upon the cause of the test failure, the Contract Administrator shall determine the liable party for the re-testing cost.
- E8.5 The field leakage test be performed as follows:
- E8.5.1 For one 1830 millimetre and three 2743 millimetre sluice gates:
- (a) The unseating side i.e. sluice gate thimble side shall be connected to a concrete pipe.
 - (b) The field leakage test shall be completed by installing a temporary flange connection on the unseating side of the sluice gates.
 - (i) Once the flange, complete with a gasket, pressure gauge, and tap connection is installed, the sluice gate shall be pressurized to the design pressure utilizing the temporary tap connection. Pressure shall be measured using the installed pressure gauge.
 - (ii) The pressure gauge shall be monitored for 120 minutes.
 - (iii) After the expiry of the 120 minutes, if it is determined that the leakage rate exceeds the AWWA standards, retesting of the sluice gate shall be required.
 - (iv) Each sluice gate shall be tested with a new gasket at the flange.
 - (c) The field leakage test for the seating side of the sluice gate shall be completed by filling the inlet and the outlet concrete cell to the designed water level. If the leakage exceeds the AWWA standards, retesting of the sluice gates shall be required.
- E8.5.2 For the remaining 2743 millimetre gates, the concrete cells shall be filled with water in a sequential manner. The sluice gates shall be tested at the same time as the water tightness test for the cells.
- E8.6 Contractor shall plan the testing in accordance with the concrete cell fill, saturation, and test period in accordance with the latest American Concrete Institute Standards. As a minimum contractor shall allow for seven (7) working days for testing in at least five (5) separate trips to the site.
- E8.7 The details of the concrete inlet, outlet, Cell 1 and Cell 2 structures are as follows:

Area	Approximate Area	Approximate Volume
Inlet Cell	280 metre squared	1,525 metre cubed
Cell 1	2,005 metre squared	10,900 metre cubed
Cell 2	2,010 metre squared	10,950 metre cubed
Outlet Area	55 metre squared	300 metre cubed

- E8.8 For stainless steel sluice gate, in addition to the filed leakage testing:

- (a) The Contractor must have proof of long term operational testing. The gate shall meet AWWA C-561-04 Standard for allowable leakage after run through 25,000 cycles in testing. Contractor to supply test report to engineer.
- (b) Contractor must shop test each wall mounted slide gate for both operation and leakage prior to shipping. Contractor shall supply a certificate that the testing has been carried out. Engineer reserves the right to witness this shop testing at the factory.

E9. COMMISSIONING

- E9.1 Coordinate with the Installation Contractor such that the Contractor shall be in attendance during commissioning of the sluice gates to ensure that each gate functions as intended.

E10. SITE VISIT

- E10.1 Unless otherwise specifically stated in the specifications, the Contractor shall provide, and shall allow for in his bid, a factory-trained representative who, in conjunction with the Contract Administrator or his agent, shall give instructions regarding the installation of the equipment. The Contractor shall complete Form 201, a sample is included in the appendix named "Forms", when he is satisfied that the Installation Contractor has received adequate instruction in the installation of the manufacturer's equipment. The Contractor shall allow for a minimum of one (1) full day at the site for this instruction. The completed Form 201 shall be submitted to the Contract Administrator prior to the commencement of equipment installation.
- E10.2 The Contractor's factory-trained representative shall visit the site as required to ensure that the installation work is being performed in a proper and workmanlike manner. The Contractor shall complete Form 202, a sample is included in the appendix named "Forms", following installation of the equipment. The completed Form 202 shall be submitted to the Contract Administrator prior to the commencement of functional testing. The Contractor shall allow for a minimum of two (2) full days at the site in each of a minimum of two (2) site visits.
- E10.3 The Contractor shall be present to supervise the commissioning, initial operation and functional testing of the equipment. The Contractor shall be required to complete Form 203 (a sample is included in the appendix named "Forms"), stating that his qualified representative has checked the installed equipment and found the equipment to be satisfactorily installed and in specified working operation. The completed Form 203 shall be received by the Contract Administrator prior to commencement of the Warranty period. The scheduling of the Contractor's factory-trained representative's visits to the site shall be to the mutual satisfaction of the Contractor and the Installation Contractor, and shall be agreed upon before the work of installing the equipment begins. The Contractor shall allow for a minimum of seven (7) full days at the site for the commissioning, initial operation and functional testing in five (5) separate site visits.
- E10.4 The Contractor shall provide a separate price for additional five (5) days for functional testing. These additional days must be approved by the Contract Administrator prior to the Contractor undertaking any such additional Work.
- E10.5 Operating equipment and systems shall be performance tested by the Contractor in the presence of the Contract Administrator to demonstrate compliance with the specified operating requirements. Functional testing shall be conducted under the specified design operating conditions or under such simulated operating conditions as recommended or approved by the Contract Administrator.

E11. TRAINING

- E11.1 The Contractor shall include costs for providing training to City staff by a factory trained representative on the Operation and Maintenance of the equipment.
- E11.2 Training for the equipment shall be conducted before the operation period as described in Form 203. The training seminar shall be conducted on site where practical. If necessary, instruction can be held in the City office. The Contractor shall provide a qualified instructor as well as the necessary course materials.
- E11.3 Training shall be provided in two (2) sessions of one and a half (1^{1/2}) days each (not more than four (4) hours per day for each session). Two (2) sessions for training shall be provided: one (1) for operation staff, and one (1) session for maintenance staff. Time for training shall be in addition to the other requirements specified.
- E11.4 The training shall cover Operation and Maintenance.
- E11.5 The Contract shall not be considered complete, for the purpose of issuing a Certificate of Substantial Performance, until the training has been provided and Form 203 has been signed.

E12. EXTRA SITE VISITS

- E12.1 If the Contractor is requested by the Installation Contractor or the Contract Administrator to send a representative to the jobsite to investigate or rectify a suspected fault in the equipment furnished by the Contractor but it is found that the said equipment or manufacturer is not at fault, the Contractor shall be entitled to be reimbursed for all reasonable costs and expenses incurred by him in sending his representative to the jobsite. If fault is established to have been caused by faulty installation by the Installation Contractor, then reimbursement shall become a matter between the Installation Contractor and the Contractor.

E13. FORMS

- E13.1 The following forms will be used on this Contract:

Form 200 Certificate of Equipment Delivery
Form 201 Certificate of Instruction
Form 202 Certificate of Satisfactory Installation
Form 203 Certificate of Equipment Satisfactory Performance

Samples of these forms are found in the appendix named "Forms".

THE CITY OF WINNIPEG

FORMS

INDEX TO FORMS

Form 200	Certificate of Equipment Delivery
Form 201	Certificate of Instruction
Form 202	Certificate of Satisfactory Installation
Form 203	Certificate of Equipment Satisfactory Performance

CERTIFICATE OF EQUIPMENT DELIVERY

FORM 200

We certify that the equipment listed below has been delivered into the care of the Installation Contractor. The equipment has been found to be in satisfactory condition and meets its Basic Design Criteria. No defects in the equipment were found.

Project: _____

Item of Equipment: _____

Tag No.: _____

Reference Specification: _____

(Authorized Signing Representative of the Installation Contractor) (Date)

(Authorized Signing Representative of the Contractor) (Date)

(Authorized Signing Representative of the Contract Administrator) (Date)

CERTIFICATE OF INSTRUCTION

FORM 201

I have completed instruction of the installation of the equipment listed below:

(Authorized Signing Representative of the Contractor)

(Date)

I certify that the party responsible for the installation of the equipment listed below has received satisfactory instructions from the Contractor.

(Authorized Signing Representative of the Installation Contractor)

(Date)

Project:

Item of Equipment:

Tag. No.:

Reference Specification:

CERTIFICATE OF SATISFACTORY INSTALLATION

FORM 202

I have completed my check and inspection of the installation listed below and confirm that it is satisfactory and that defects have been remedied to my satisfaction except any as noted below:

Project: _____

Item of Equipment: _____

Tag No.: _____

Reference Specification: _____

Outstanding Defects: _____

(Authorized Signing Representative of the Contractor) (Date)

**CERTIFICATE OF EQUIPMENT SATISFACTORY PERFORMANCE
FORM 203**

We certify that the equipment listed below has been validated and has been operated for at least seven (7) consecutive days and that the equipment operates satisfactory and meets its Basic Design Criteria. No defects in the equipment were found. The equipment is therefore classed as "conforming".

Project: _____

Item of Equipment: _____

Tag No.: _____

Reference Specification: _____

(Authorized Signing Representative of the Contractor) (Date)

(Authorized Signing Representative of the Installation Contractor) (Date)

(Authorized Signing Representative of the Contract Administrator) (Date)

1. Acknowledgment of Receipt of Training for Operation Staff

(Authorized Signing Representative of the City) (Date)

2. Acknowledgment of Receipt of Training for Maintenance Staff

(Authorized Signing Representative of the City) (Date)