



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 561-2005**

**WINNIPEG WATER TREATMENT PROGRAM – SUPPLY OF WATER TREATMENT  
PLANT SLUICE GATES**

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## **PART B - BIDDING PROCEDURES**

### **B1. PROJECT TITLE**

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

### **B2. SUBMISSION DEADLINE**

- B2.1 The Submission Deadline is 4:00 p.m. Winnipeg time, November 8, 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 on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Branch 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 Branch internet site for addenda shortly before submitting his Bid.
- B4.3 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.

## **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 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.
- 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 B14.
- 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 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 Branch  
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 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.

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.

B8.1.2 Prices on Form B: Prices shall not include the Manitoba Association for Resource Recovery Corporation (MARRC) Environmental Handling Charge (EHC) which shall be extra where applicable.

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 Branch internet site at <http://www.winnipeg.ca/matmgt>); and
  - (ii) have successfully carried out work similar in nature, scope and value to the portion of the Work proposed to be subcontracted to them, and are fully capable of performing the Work required to be done in accordance with the terms of the Contract; and
- (g) have a written workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba).

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.

B9.2.1 Proof satisfactory to the Contract Administrator may include (but is not limited to)::

- (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 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.

B9.3 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. BID SECURITY**

B10.1 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.

- B10.1.1 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.
- B10.2 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.
- B10.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B10.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.
- B10.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.
- B10.3 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. OPENING OF BIDS AND RELEASE OF INFORMATION**

- B11.1 Bid Submissions will not be opened publicly.
- B11.2 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 on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B11.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B11.4 The Bidder is advised that any information contained in any Bid Submission may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

## **B12. IRREVOCABLE BID**

- B12.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B12.2 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 11 of Form A: Bid.

## **B13. WITHDRAWAL OF BIDS**

- B13.1 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.
- B13.1.1 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.
- B13.1.2 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.

- B13.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials shall:
- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
  - (b) open the Bid Submission to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
  - (c) if the notice has been given by any one of the persons specified in B13.1.3(b), declare the Bid withdrawn.

B13.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B12.2 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.

## **B14. EVALUATION OF BIDS**

- B14.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity (pass/fail);
  - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B9 (pass/fail);
  - (c) Total Bid Price;
  - (d) economic analysis of any approved alternative pursuant to B5.
- B14.2 Further to B14.1(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.
- B14.3 Further to B14.1(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.
- B14.4 Further to B14.1(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.
- B14.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B14.5 This Contract will be awarded as a whole.

## **B15. AWARD OF CONTRACT**

- B15.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B15.2 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.
- B15.2.1 Without limiting the generality of B15.2, 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.

**B15.3** 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 on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

## PART D - SUPPLEMENTAL CONDITIONS

### GENERAL

#### D1. GENERAL CONDITIONS

- D1.1 In addition to the *General Conditions for 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 of eighteen (18) sluice gates and ancillary equipment.
- D2.2 The major components of the Work are as follows:
- (a) Supply and delivery of eighteen (18) sluice gates as specified herein.
  - (b) Provision of on-site support for the verification of satisfactory installation and performance.
  - (c) Provision of operations and maintenance manuals.
  - (d) Training of City operations and maintenance personnel.
  - (e) Other goods and services as specified in Part 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 and/or Installer** means the General Contractor retained by the City, under a separate contract, to install the 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) **DAF** means Dissolved Air Flotation
- (k) **IEC** means International Electrotechnical Commission
- (l) **ISO** means International Organization for Standardization
- (m) **NACE** means National Association of Corrosion Engineers
- (n) **NEMA** means National Electrical Manufacturers Association
- (o) **NSF** means National Sanitation Foundation
- (p) **SAE** means Society of Automotive Engineers
- (q) **CEC** means Canadian Electrical Code
- (r) **LOX** means liquid oxygen
- (s) **Manufacturer** means the person, partnership or corporation responsible for the manufacture and fabrication of equipment provided to the City for the completion of the work.
- (t) **Manufacturer's Representative** means a trained serviceman empowered by the manufacturer to provide installation, testing, and commissioning assistance to the City in his performance of those functions.
- (u) **IEEE** means Institute of Electrical and Electronics Engineers
- (v) **Furnish** means supply
- (w) **ISA** means the Instrumentation Systems and Automation Society
- (x) **Total Performance** means that the entire Work, except those items arising from the Provision of GC.10.01 have been performed in accordance with this Contract
- (y) **AGMA** means American Gear Manufacturer's Association.
- (z) **API** means American Petroleum Institute
- (aa) **EEMAC** means Electrical and Electronic Manufacturer of Canada
- (bb) **VFD** means Variable Frequency Drive
- (cc) **Contract Work Schedule** means a Gantt Charter developed by the Contractor developed using the critical path method which shows the proposed progress of the major items of work which are to be performed under this Contract
- (dd) **Project Master Schedule** means a schedule developed by the Contract Administrator which includes and coordinates the Contract Work Schedules of several City contracts, including this Contract
- (ee) **Professional Engineer** means a professional engineer registered in the Province of Manitoba.
- (ff) **Certified Shop Drawings** means Shop Drawings prepared by the Contractor after all required Shop Drawings have been "reviewed" or "reviewed as modified" in accordance with Section 01300 of this Bid Opportunity and which incorporate all modifications to the Shop Drawings, comments and notations made by the Contract Administrator in the course of the review.
- (gg) **Acceptable Shop Drawings** means all required Shop Drawings have been reviewed by the Contract Administrator and have been annotated and stamped as "reviewed" or "reviewed as modified" in accordance with Section 01300 of this Bid Opportunity

D3.2 The definitions of technical terms, abbreviations, and symbols will be those of the American Society for Testing and Materials, Canadian Standards Association and the applicable Codes and Standards. In the event of a dispute, the Contract Administrator's decision will be final.

D3.3 The Manufacturer and Manufacturer's Representative are not parties to this Contract. All work required from the Manufacturer and Manufacturer's Representative shall be provided and coordinated by the Contractor.

D3.4 Specialized terms relating to instrumentation and control and which are not explicitly defined herein shall be as defined in The Instrumentation Systems and Automation Society (ISA) S51.1, National Electrical Manufacturer's Association (NEMA) Industrial Control and Systems (ICS) 1, American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE) Std 100, and the Communications Standard Dictionary, by Martin H. Weik.

#### **D4. CONTRACT ADMINISTRATOR**

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

Larry Smith, C.E.T.  
1479 Buffalo Place  
Winnipeg, Manitoba, R3T 1L7  
Telephone No. (204) 986-7635  
Facsimile No. (204) 986-8393

#### **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

## **D6. INDEMNITY**

- D6.1 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 the 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 Liens 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.

## **SUBMISSIONS**

### **D7. AUTHORITY TO CARRY ON BUSINESS**

- D7.1 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.

### **D8. WORKERS COMPENSATION**

- D8.1 The Contractor shall be registered with the Workers Compensation Board of Manitoba, shall provide and maintain Workers Compensation coverage throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

### **D9. INSURANCE**

- D9.1 The City will provide and maintain the following Project Insurance Coverages:
- (a) Builder's Risk Insurance in the amount of one hundred percent (100%) of the total project cost.
    - (i) The Contractor shall be responsible for deductibles up to \$10,000.00 maximum of any one loss.
  - (b) Wrap-Up Liability Insurance in an amount of no less than 10 million dollars (\$10,000,000.00)
    - (i) The Contractor shall be responsible for deductibles up to \$10,000.00 maximum of any one loss.

- (c) The City of Winnipeg will carry such insurance to cover all parties engaged in the Work in this Contract. Provision of this insurance by the City of Winnipeg is not intended in any way to relieve the Contractor from his obligations under the terms of the Contract. Specifically, losses relating to deductibles for insurance, as well as losses in excess of limits of coverage and any risk of loss that is not covered under the terms of the insurance provided by the City of Winnipeg remains with the Contractor.

D9.2 The Contractor shall provide and maintain the following insurance coverage at all times during the performance of the Work:

- (a) Automobile liability insurance for owned and non-owned automobiles used for or in connection with the work in the amount of at least two million dollars (\$2,000,000.00).
  - (i) Deductibles shall be borne by the Contractor;
  - (ii) The Contractor shall not cancel, materially alter, or cause the policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator;
  - (iii) The Contractor shall provide the Contract Administrator with evidence of insurance of the policy at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than seven (7) Calendar Days from notification of the award of Contract.
- (b) The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator.

## **D10. PERFORMANCE SECURITY**

D10.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

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

D10.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D10.2 If the bid security provided in his Bid Submission was not a certified cheque or draft pursuant to B10.1(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.

## **D11. SUBCONTRACTOR LIST**

D11.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in GC.3.01 for the return of the executed Contract.

## **D12. DETAILED WORK SCHEDULE**

- D12.1 The Contract Administrator has developed a Project Master Schedule for the project. This schedule will be available in the offices of the Contract Administrator and will be updated as required as the work progresses.
- D12.2 The Contractor shall, within 5 business days of award of contract, prepare a detailed Contract Work Schedule for his work based on a critical path method (CPM) approach.
- D12.3 The schedule shall conform to the Project Master Schedule and show, in a clear graphical manner, through the use of Gantt charts, in a maximum of weekly stages, the proposed progress of the main items, structures and subtrades of the contract and indicate the labour, construction crews, plant and equipment to be employed. Indicate the delivery date of major pieces of equipment to be supplied. The schedule shall be predicated on the completion of all work on or before the date of Substantial Performance.
- D12.4 Upon acceptance by the Contract Administrator, distribute copies of the revised schedule to Subcontractors and other concerned parties.
- D12.5 The Contract Work Schedule shall be updated as the work requires and submitted to the Contract Administrator.
- D12.6 The Contractor shall instruct recipients to report to the Contractor immediately any problems anticipated by the timetable shown in the Contract Work Schedule.
- D12.7 While it is intended that the Contractor shall be allowed, in general, to carry on the Contract in accordance with such general plans as may appear to him to be most desirable, the Contract Administrator, at his discretion, may direct the order in which, and points at which, the work shall be undertaken.
- D12.8 This control shall be exercised in the interests of the City so that the work or other Contractors who may be working on the site may be coordinated with the work on this Contract. A program of work will be drawn up and agreed to before the commencement of the Contract.
- D12.9 The Contract Administrator shall be notified immediately when the work under the Contract Work Schedule will adversely affect the work of other Contractors and the critical path of the Project Master Schedule as the work under the Contractor's Contract Work Schedule is an integral part of the Project Master Schedule.
- D12.10 The Contractor shall be familiar with all other Contract Work Schedules as contracted by the City with other Contractors and the critical path of the Project Master Schedule.

## **D13. SECURITY CLEARANCE**

- D13.1 Each individual proposed to perform Work on the Site shall be required to obtain a Criminal Record Check Search Certificate from the Police Service having jurisdiction at his place of residence.
- D13.2 Prior to the commencement of any Work, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Criminal Record Search Certificate obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform Work within City facilities or on private property.
- D13.3 Any individual for whom a Criminal Record Search Certificate is not provided, or for whom a Criminal Record Search Certificate indicates any convictions or pending charges related to property offences or crimes against another person, will not be permitted to perform any Work within City facilities or on private property.

- D13.4 Any Criminal Record Search Certificate obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.
- D13.5 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated criminal records search. Any individual who fails to provide a satisfactory Criminal Record Search Certificate as a result of a repeated criminal records search will not be permitted to continue to perform Work under the Contract within City facilities or on private property.

## **SCHEDULE OF WORK**

### **D14. COMMENCEMENT**

- D14.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.
- D14.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
    - (i) evidence that the Contractor is in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
    - (ii) evidence of the workers compensation coverage specified in D8;
    - (iii) evidence of the insurance specified in D9;
    - (iv) the performance security specified in D10;
    - (v) the Subcontractor list specified in D11;
    - (vi) the detailed work schedule specified in D12; and
    - (vii) the security clearances specified in D13.
  - (b) the Contractor has attended a meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a meeting.

### **D15. CRITICAL STAGES**

- D15.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) Shop Drawings:
    - (i) All required Shop Drawings shall be submitted, to the satisfaction of the Contract Administrator, within twenty-five (25) Business Days of the Award of Contract.
    - (ii) Acceptable Shop Drawings shall be completed within fifty (50) Business Days of the Award of Contract. Shop Drawing completion shall not be achieved until the drawings are reviewed by the Contract Administrator.
  - (b) Delivery:
    - (i) Delivery of Goods to the Site shall begin no earlier than April 30, 2006 and be completed no later than August 31, 2006.
    - (ii) SLG-1000C: all Goods specified in E6.1 shall be delivered no later than May 5, 2006.
    - (iii) SLG-F053A, SLG-F054A, SLG-F055A and associated actuators, stem covers and position monitors shall be delivered no later than May 31, 2006.
    - (iv) All remaining sluice gates not listed in D15.1(a)(i) and D15.1(a)(ii) and their associated actuators, stem covers and position monitors shall be delivered no later than August 31, 2006.

- (v) The detailed delivery schedule will be based on the Installation Contractor's and the City's requirements and will be coordinated by the Contract Administrator, and included in the Contract Work Schedule. The Goods shall be supplied into the care of the Installation Contractor in accordance with this schedule.
- (vi) Delivery of the Goods shall be considered complete upon the issuance of Form 100: Certificate of Equipment Delivery and Form 101: Certificate of Readiness to Install. A separate form shall be provided for each major component. These forms are included in Appendix - Forms.
- (c) Satisfactory Installation: The Contractor shall provide support to the Installation Contractor as required to achieve satisfactory installation of All Goods by November 1, 2006.
  - (i) This support shall include (but is not limited to) providing a qualified representative on Site as required to assist the Installation Contractor in achieving satisfactory installation of the Goods supplied under this Contract.
  - (ii) Satisfactory installation shall be considered complete upon the issuance of Form 102: Certificate of Satisfactory Installation. A single form is required for each sluice gate.
- (d) Satisfactory Performance: Performance verification shall begin no earlier than November 1, 2006 and shall be completed on or before achieving Substantial Performance.
  - (i) The Contract Administrator will coordinate the performance verification to coincide with the project commissioning schedule and will provide the Contractor a minimum of thirty (30) Calendar Days written notification of the acceptable date for the start of performance verification.
  - (ii) During the performance verification period the Contractor shall provide qualified representation on Site as required to assist the Installation Contractor in achieving and demonstrating satisfactory performance of the Goods supplied under this Contract.
  - (iii) Satisfactory performance shall be considered complete upon the issuance of Form 103: Certificate of Equipment Satisfactory Performance for each sluice gate.
- (e) Training:
  - (i) Training shall begin no earlier than July 3, 2007 and shall be completed by December 1, 2007.
  - (ii) The Contract Administrator will coordinate the training to coincide with the project commissioning schedule and will provide the Contractor a minimum of thirty (30) Calendar Days written notification of the acceptable date for the start of training.
  - (iii) Satisfactory training shall be considered complete upon the issuance of Form T1: Certificate of Satisfactory Training.

D15.2 The Contract Administrator will endeavour to review Shop Drawings within ten (10) Calendar Days upon their submission. If review is not made within that time period, Contract dates specified in D15.1(a)(ii) will be extended by an equivalent number of Calendar Days.

D15.3 All Shop Drawings submitted pursuant to D15.1(a) shall be provided in a single submission.

## **D16. SUBSTANTIAL PERFORMANCE**

D16.1 The Contractor shall achieve Substantial Performance by December 21, 2006.

D16.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D16.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D16.4 Substantial Performance cannot be achieved without the completion of Form 103.

#### **D17. TOTAL PERFORMANCE**

D17.1 The Contractor shall achieve Total Performance by December 1, 2007.

D17.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D17.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D17.4 Total Performance cannot be achieved without the completion of Form T1.

#### **D18. LIQUIDATED DAMAGES**

D18.1 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) Submittals in accordance with D15.1(a)(i) or D15.1(a)(ii) – two thousand, six hundred dollars (\$2,600.00);
- (b) Delivery in accordance with D15.1(b)(ii), D15.1(b)(iii) or D15.1(b)(iv) – two thousand, six hundred dollars (\$2,600.00);
- (c) Satisfactory installation in accordance with D15.1(c) - zero dollars (\$0.00);
- (d) Substantial Performance – two thousand, six hundred dollars (\$2,600.00);
- (e) Total Performance – six hundred dollars (\$600).

D18.2 The amounts specified for liquidated damages in D18.1 is 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.

D18.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D18.4 The City will not pay a bonus if the Contractor reaches critical stages, Substantial Performance or Total Performance earlier than the dates specified herein.

#### **MEASUREMENT AND PAYMENT**

##### **D19. PAYMENT SCHEDULE**

D19.1 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, delivery, installation support, and performance verification support for AWWA 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, actuators, stems, gear operators and accessories, delivery and functional testing support. For items 1a) to 1j) inclusive:

- (i) Eighty (80) per cent of the unit price bid will be paid upon issuance of Form 100: Certificate of Equipment Delivery and Form 101: Certificate of Readiness to Install.
  - (ii) A further ten (10) per cent of the unit price bid will be paid upon issuance of Form 102: Certificate of Satisfactory Installation
  - (iii) The final ten (10) per cent of the unit price bid will be paid upon issuance of Form 103: Certificate of Satisfactory Performance.
- (b) Measurement and Payment for Item 2 "Completion of Certified Shop Drawings" will be made at the fixed lump sum amount set out in Form B: Prices.
  - (c) Measurement and payment for Item 3 "Additional days for participation in additional on-site 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 days required to verify performance and provide instruction as specified in E12.
  - (d) Measurement and Payment for Item 4 "Provision of Operation and Maintenance Manuals" will be made at the fixed lump sum amount set out in Form B: Prices.
  - (e) Measurement and Payment for Item 5 "Training of City Operations and Maintenance Staff" will be made at the fixed lump sum amount set out in Form B: Prices upon issuance of Form T1: Certificate of Satisfactory Training.

D19.2 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

### D20. WARRANTY

- D20.1 Further to GC.10.01, 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.
- D20.2 Notwithstanding GC.10.01, GC.10.02 and D20.1, 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.
- D20.3 New components which replace defective components under warranty shall have a warranty period identical to the warranty period that replaced component had at Total Performance. The warranty period for the new components shall begin on the date that they are performance tested and accepted by the City.

**FORM H1: PERFORMANCE BOND**  
(See D10)

KNOW ALL MEN BY THESE PRESENTS THAT

\_\_\_\_\_ ,  
(hereinafter called the "Principal"), and

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

\_\_\_\_\_ dollars (\$\_\_\_\_\_)

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

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

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, for:

BID OPPORTUNITY NO. 561-2005

WINNIPEG WATER TREATMENT PROGRAM – SUPPLY OF WATER TREATMENT PLANT 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)

**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT  
(PERFORMANCE SECURITY)**  
(See D10)

\_\_\_\_\_  
(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 561-2005

WINNIPEG WATER TREATMENT PROGRAM – SUPPLY OF WATER TREATMENT PLANT  
SLUICE GATES

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**

### **E1. GENERAL**

#### **E1.1 Work Included.**

- (a) Supply, delivery to the site, training, testing, and performance verification support of stainless steel 316 sluice gates to be installed in new City of Winnipeg Water Treatment Plant (WTP).
- (b) Provide sluice gates and related equipment information to Contract Administrator during design to facilitate tendering of the construction contract for the construction of the WTP.
- (c) Provide Shop Drawings of the equipment to facilitate design of the WTP.
- (d) Fabricate and factory test the equipment, shop assemble, and inspect sluice gates to ensure that field fitting shall not be required.
- (e) Provide Operation and Maintenance (O&M) Manuals.
- (f) Produce as-built drawings.
- (g) Provide technical support and remedy defects during the warranty period.
- (h) All deliveries are to be in accordance with the Contract Work Schedule.
- (i) Where no specifications are provided for an item, American Water Works Association (AWWA) C561-04 applies.

#### **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. <sup>3</sup> = 28.317 litre
1 lb.ft. <sup>2</sup> = 0.04214 kilograms metre squared (inertia)	1 horsepower = 0.746 kilowatt

### **E2. SUBMITTALS**

#### **E2.1 Shop Drawings:**

- (a) 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 (215 X 280) 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, such as sluice gate and actuator assemblies and accessories, 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 including actuator sizing, noise, and torque calculations, 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 as part of Contract Work Schedule.
- (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) Provide electronic copies of certified Shop Drawings within sixty (60) business days of stamped "Reviewed" or "Reviewed as Modified".
- (k) 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).
- (l) 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 be marked by the Contractor as either in "compliance" or "deviation" with comment.

- (m) 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.
- (n) By approving and submitting Shop Drawings, the Contractor thereby certifies 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.
- (o) All costs associated with Shop Drawing preparation and submission shall be included in the unit prices provided for various items of equipment.
- (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 performance verification and successful completion of leakage testing.
- (r) Shop Drawings shall show design material specifications and bill of materials for use in checking deliveries.
- (s) Shop 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 by the Installer.

E2.2 Submit a completed ISA S20.50 Instrument Specification Sheet for each device.

E2.3 O&M Manuals shall be submitted in accordance with the following.

- (a) For each type of equipment, three (3) sets of O&M Manuals shall be submitted to the Contract Administrator for review. The Contractor shall provide these manuals sixty (60) calendar days in advance prior to Substantial Performance of the Work for review and comments.
- (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) All completed equipment testing and Certificate of Satisfactory Installation.
  - (vi) Full description of entire mechanical system and ITP operation.
  - (vii) Names, addresses, and telephone numbers of all major sub-contractors and suppliers.
  - (viii) Detailed specification and Operation and Maintenance instructions for all items of equipment provided including a preventative maintenance program.
  - (ix) 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 performance verification 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.
  - (x) Part books that illustrate and list all assemblies, sub-assemblies, and components.
  - (xi) Routine test procedures.
  - (xii) 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. A maximum of eight (8) weeks after review, twelve (12) additional copies shall be provided by the Contractor for distribution purposes.
  - (f) Submit an electronic version of the O&M manual.
  - (g) 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.

### **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 C561-04.
- E3.3 All sluice gates shall be suitably designed for a continuous immersion in up to 5 mg/L chlorine and chloramines concentration. All sluice gates shall also be suitable for non-continuous immersion of 50 mg/L of chlorine and chloramines.
- E3.4 Unless noted otherwise, the actuator will fail to the last position when the control function or power fails.

### **E4. ACCEPTABLE MANUFACTURERS**

- E4.1 Stainless Steel Sluice Gate
  - (a) H. Fontaine Ltd
  - (b) Waterman Industries Inc.
  - (c) Hydro Gate Company

- (d) Or approved equal

E4.2 Electric Actuator

- (a) Limitorque
- (b) Rotork
- (c) Or approved equal

**E5. SPECIFICATIONS**

E5.1 General

- (a) Provide new material only.
- (b) Confirm with Contract Administrator all elevations prior to manufacturing.
- (c) The stainless steel gate frame shall be constructed of structural members or formed plate welded to form a rigid one-piece frame.
- (d) Where applicable, the frame shall be flange back and suitable for mounting on a wall thimble.
- (e) The frame configuration shall allow the replacement of the top and side seals without removing the gate frame from the wall thimble.
- (f) 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.
- (g) The gate guide liner 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.
- (h) Side and top seals 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.
- (i) The flush bottom seal shall be set and mechanically fastened into the bottom member of the frame.
- (j) Provide all actuator mounting hardware and accessories mounted on the device prior to shipment.
- (k) Provide electric actuators of National Electrical Manufacturers Association (NEMA) 4x construction, suitable for use in an industrial environment.
- (l) Provide device and actuator as a matched set from the same Manufacturer wherever possible.
- (m) For electrical actuated gates, actuators shall be provided with Modbus/TCP communications capability.
- (n) Tag the control devices, accessories and actuators to indicate operating characteristics. Tag the actuator inlet and outlet ports for electric or pneumatic services. Electric actuators must be Canadian Standards Association (CSA) approved.
- (o) Provide protection of the water stream from oil and grease leakage from the actuator. Only food grade lubricant to be used.

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 (Length/Radius) 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 Length/Radius 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) General

- (i) 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.
- (ii) 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.
- (iii) Motor operated gate control shall include motor, operator unit gearing, limit switch gearing, limit switches, torque switches, bored and key wayed drive sleeve, declutch lever, and auxiliary handwheel as self contained unit.
- (iv) Motor shall be 575 Volt, 3 ph, 60 Hertz, suitable for typical water treatment plant indoor conditions.
- (v) Limit and Torque Switches: Engage limit switches to drive mechanism at all times whether unit operated electrically or manually. Set switches to trip at fully open and fully closed gate positions. Factory wire electrical interconnections between limit switches and torque switches, ready for operation. Factory wire gearing used in connection with limit switches. Provide open and close limit switches. Mount limit switches on gate operator or stem above gate operator. Equip each gate control with double torque switch adjustable and responsive to load encountered in either direction of travel.
- (vi) Operate during complete cycle without auxiliary relays or devices for protection should excessive load be caused by obstruction in either direction of travel.
- (vii) Controller: Provide integral reversing controller for each operator. Controller consists of reversing combination magnetic starters, control transformer, three (3) overloads, and cover mounted pilot devices specified.
- (viii) Handwheel shall not rotate during electric operation.
- (ix) Do not rotate motor during hand operation, nor shall fused motor prevent manual operation. When in manual operating position, unit shall remain in this position until motor is energized at which time gate operator shall automatically return to electric operation and shall remain in motor position until handwheel operation desired.
- (x) Movement from motor operation to handwheel operation accomplished by positive declutching lever which shall disengage motor gearing mechanically but not

electrically. Ensure that the unit cannot be placed in manual operation when motor is running.

- (xi) Hammer Blow Device: Gate control with built in lost motion device that travels a minimum of 135 degrees before imparting hammer blow to start gate in motion in closing or opening direction. Permit motor to attain full speed before load is encountered. Share load equally by 2 lugs cast integrally on drive sleeve.
- (b) Electric Linear Actuators, Open/Close Type (EMLO) and Modulating Type (EMLM)
  - (i) Electric actuators for gates to be comprised of an electric motor and one or two gear boxes, depending on the gate design.
  - (ii) Provide a sufficiently sized motor to seat and unseat gates and, if necessary, for control to traverse from full open to full closed position in small increments in response to control signals.
  - (iii) The actuator will impart a travel speed of 2.5 m/hr to modulating gates and 18.0 m/h to open/close gates unless otherwise specified on the Instrument Specification Sheets. The actuator speed shall be field adjustable.
  - (iv) The actuator shall be fully compatible with the gate. Mount at operating height on the frame.
  - (v) Actuators to accept 575 V, 3 phase, 60 Hz power. Protect motors against reverse phase rotation.
  - (vi) The drive train to be rated for heavy duty, continuous service. Connect the actuator drive shaft to gear box shaft(s) through a removable flexible mechanical coupling. Where the actuator is fitted to two stems, ensure that the gearing in each gearbox allows both stems to move identically.
  - (vii) House the internal components of actuators and related gear boxes in weather proof, corrosion proof metal enclosures. Electrical components shall be contained in Electrical and Electronic Manufacturer's Association of Canada (EEMAC) six (6) enclosures. All electrical and mechanical components shall be capable of continuous operation in an ambient temperature range of -40 °C to plus 40 °C.
  - (viii) Fit actuators with a capstan hand wheel operator. Fit hand wheel assemblies with a clutching mechanism which prevents hand wheel operation during normal motor operation. Provide a 1:1 gearing ratio with respect to the main drive shaft for the hand wheel.
  - (ix) Fit removable safety guards over all moving drive train components between the actuator and each gear box.
  - (x) Provide adjustable limit switches on each actuator to define the upper and lower limits of the stroke.
  - (xi) High torque switches will protect the equipment and the structure against excessive gate travel. Provide high torque protection at the lower and upper ends of the stroke.
  - (xii) Provide a controller enclosure to contain a motor contactor complete with overload protection. Provide line, load, and external control terminal strips.
  - (xiii) Fit each actuator with an electronic positioner to control gate elevation in response to a continuous 4 to 20 mA DC input signal.
  - (xiv) Provide a local operating station with a Computer-Off-Hand switch and an Open-Close switch
  - (xv) Actuator position switches shall include two (2) form C 2 amp contacts in an EEMAC four (4) (minimum) rated enclosure.
  - (xvi) Cams shall be fastened to a splined shaft and adjustable without set screws.
  - (xvii) Provide a visual indicator with beacon type display showing red when the controlled device is open and green when the device is closed.

- (xviii) Supply all required hardware for mounting of the position monitor in accordance with the specified valve/actuator orientation.
- (xix) Diaphragm actuated valves shall have external position monitor actuated through linkages.
- (xx) Minimum monitoring and control signal requirements:
  - (i) Open Close actuators:
    - Momentary Open Command (Remote dry contact).
    - Momentary Close Command (Remote dry contact).
    - Open Status (Dry contact for remote indication).
    - Closed Status (Dry contact for remote indication).
    - Computer (Remote) Mode (Dry contact for remote indication).
    - Remote dry contacts will be rated 2 Amps at 120 VAC minimum.
- (c) Provide one portable electric drill system for manual operation for all gates.

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
Thrust Nuts	Stainless Steel ASTM A276, 316
Pedestal	SS 316 Stainless Steel
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

E5.5 Surface Treatment and Finishes

- (a) Surface Treatment and Finishes
  - (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 National Association of Corrosion Engineers (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 American National Standards Institute/National Sanitation Foundation (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 required to be suitable for potable water application.
- (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**

**E6.1 Gate Schedule for Area I (Raw Water Pump Station)**

<b>Specification Standard:</b>	AWWA C561-04 for fabricated Stainless Steel Slide Gates													
<b>Nominal Size:</b>	2100 W millimetre x 2100 H millimetre (SLG-I000C)													
<b>Type:</b>	<table border="1"> <thead> <tr> <th>Gate No.</th> <th>Type</th> <th>Opening</th> <th colspan="2">Material of Construction</th> </tr> </thead> <tbody> <tr> <td>SLG-I000C</td> <td>Wall Mount, Rising Stem</td> <td>Upward</td> <td colspan="2">Stainless Steel 316</td> </tr> </tbody> </table>				Gate No.	Type	Opening	Material of Construction		SLG-I000C	Wall Mount, Rising Stem	Upward	Stainless Steel 316	
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<b>Mounting Details:</b>	<table border="1"> <thead> <tr> <th>Gate No.</th> <th>Opening Invert Elevation (metres)</th> <th>Base of Pedestal or Top of Concrete Elevation (metres)</th> <th>Centreline Operator Elevation (metres)</th> <th>Max. Water Level (metres)</th> </tr> </thead> <tbody> <tr> <td>SLG-I000C</td> <td>229.3</td> <td>242.0</td> <td>243.0</td> <td>241.1</td> </tr> </tbody> </table>				Gate No.	Opening Invert Elevation (metres)	Base of Pedestal or Top of Concrete Elevation (metres)	Centreline Operator Elevation (metres)	Max. Water Level (metres)	SLG-I000C	229.3	242.0	243.0	241.1
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SLG-I000C	1100 millimetre at the base and 1100 millimetre at the top													

<b>Operator/ Actuator:</b>	Gate No.	Operator Type	Motor and Operating Conditions
	SLG-I000C	Geared Manual Crank/Handwheel and Portable Drill	NA
<b>Stem Cover:</b>	Galvanized steel pipe with acrylic window c/w graduations in millimetres		
<b>Position Monitoring:</b>	Provide open/close position limit switches.		

E6.2 Gate Schedule for Area R (Residuals Area)

<b>Specification Standard:</b>	AWWA C561-04 for Fabricated Stainless Steel Slide Gates				
<b>Nominal Size:</b>	1200 W millimetre x 1200 H millimetre (SLG-R100A) 1200 W millimetre x 1200 H millimetre (SLG-R200A) 1200 W millimetre x 1200 H millimetre (SLG-R300A) 1200 W millimetre x 1200 H millimetre (SLG-R400A) 900 W millimetre x 900 H millimetre (SLG-R010A) 900 W millimetre x 900 H millimetre (SLG-R020A)				
<b>Type:</b>	Gate No.	Type **	Opening	Material of Construction	
	SLG-R100A*	Wall Mount, Self-contained, Rising Stem	Upward	Stainless Steel 316	
	SLG-R200A*	Wall Mount, Self-contained, Rising Stem	Upward	Stainless Steel 316	
	SLG-R300A*	Wall Mount, Self-contained, Rising Stem	Upward	Stainless Steel 316	
	SLG-R400A*	Wall Mount, Self-contained, Rising Stem	Upward	Stainless Steel 316	
	SLG-R010A <sup>£</sup>	Channel Mount, Embedded Frame, Self-Contained Rising Stem	Upward	Stainless Steel 316	
	SLG-R020A <sup>£</sup>	Channel Mount, Embedded Frame, Self-Contained Rising Stem	Upward	Stainless Steel 316	
	* Suitable for mounting on an outside wall of a concrete channel with 400 millimetre roof and bottom slab thickness. ** Provide water seal on all four sides of the gates. £ Bottom frame to be flush (box out) with the floor and three other sides shall be wall mounted				
<b>Mounting Details:</b>	Gate No.	Channel Invert Elevation (metres)	Channel Roof Top of Concrete Elevation (metres)	Centreline Operator Elevation (metres)	Max. Water Level (metres)
	SLG-R100A	237.81	239.41	240.41	239.01

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SLG-R300A	400 millimetre at the base and 400 millimetre at the top with 300 millimetre side walls																									
SLG-R400A	400 millimetre at the base and 400 millimetre at the top with 300 millimetre side walls																									
SLG-R010A	400 millimetre at the base and 400 millimetre at the top with 300 millimetre side walls																									
SLG-R020A	400 millimetre at the base and 400 millimetre at the top with 300 millimetre side walls																									
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SLG-R400A	Electric Actuated	575 V, 3 ph, 60 Hz																								
SLG-R010A	Geared Manual Crank / Handwheel	NA																								
SLG-R020A	Geared Manual Crank / Handwheel	NA																								
<b>Stem Cover:</b>	Galvanized steel pipe with acrylic window c/w graduations in millimetres																									
<b>Position Monitoring:</b>	Provide open/close position limit switches.																									

E6.3 Gate Schedule for Area P (DAF Area)

<b>Specification Standard:</b>	AWWA C561-04 for fabricated Stainless Steel Slide Gates													
<b>Nominal Size:</b>	2000 W millimetre x 1500 H millimetre (SLG-P970A)													
<b>Type:</b>	<table border="1"> <thead> <tr> <th>Gate No.</th> <th>Type*</th> <th>Opening</th> <th>Material of Construction</th> </tr> </thead> <tbody> <tr> <td>SLG-P970A</td> <td>Wall Mount, Non-Rising Stem</td> <td>Upward</td> <td>Stainless Steel 316</td> </tr> </tbody> </table>				Gate No.	Type*	Opening	Material of Construction	SLG-P970A	Wall Mount, Non-Rising Stem	Upward	Stainless Steel 316		
	Gate No.	Type*	Opening	Material of Construction										
SLG-P970A	Wall Mount, Non-Rising Stem	Upward	Stainless Steel 316											
* Provide water seal on all four sides of the gates														
<b>Mounting Details:</b>	<table border="1"> <thead> <tr> <th>Gate No.</th> <th>Channel Invert Elevation (metres)</th> <th>Channel Roof – Top of Concrete Elevation (metres)</th> <th>Centreline Operator Elevation (metres)</th> <th>Max. Water Level (metres)</th> </tr> </thead> <tbody> <tr> <td>SLG-P970A</td> <td>241.50</td> <td>245.00</td> <td>246.00</td> <td>244.50</td> </tr> </tbody> </table>				Gate No.	Channel Invert Elevation (metres)	Channel Roof – Top of Concrete Elevation (metres)	Centreline Operator Elevation (metres)	Max. Water Level (metres)	SLG-P970A	241.50	245.00	246.00	244.50
	Gate No.	Channel Invert Elevation (metres)	Channel Roof – Top of Concrete Elevation (metres)	Centreline Operator Elevation (metres)	Max. Water Level (metres)									
SLG-P970A	241.50	245.00	246.00	244.50										
<b>Seating Head and Unseating Head:</b>	<table border="1"> <thead> <tr> <th>Gate No.</th> <th>Unseating Head (meters)</th> <th>Seating Head (meters)</th> </tr> </thead> <tbody> <tr> <td>SLG-P970A</td> <td>3.0</td> <td>3.0</td> </tr> </tbody> </table>		Gate No.	Unseating Head (meters)	Seating Head (meters)	SLG-P970A	3.0	3.0						
	Gate No.	Unseating Head (meters)	Seating Head (meters)											
SLG-P970A	3.0	3.0												
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	Gate No.	Operator Type	Motor and Operating Conditions											
SLG-P970A	Geared Manual Crank/Handwheel	NA												
<b>Stem Cover:</b>	Galvanized steel pipe with acrylic window c/w graduations in millimetres													
<b>Position Monitoring:</b>	Provide open/close position limit switches.													

E6.4 Gate Schedule For Area F (Filtration Area)

<b>Specification Standard:</b>	AWWA C561-04 for fabricated Stainless Steel Slide Gates										
<b>Nominal Size:</b>	2200 W millimetre x 2000 H millimetre (SLG-F001A) 2400 W millimetre x 1400 H millimetre (SLG-F053A) 1500 W millimetre x 1400 H millimetre (SLG-F054A) 2100 W millimetre x 2100 H millimetre (SLG-F055A)										
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	Gate No.	Type	Opening	Material of Construction							
SLG-F001A	Wall Mount, Rising Stem	Upward	Stainless Steel 316								

	SLG-F053A	Wall Mount, Rising Stem	Upward	Stainless Steel 316	
	SLG-F054A	Wall Mount, Rising Stem	Upward	Stainless Steel 316	
	SLG-F055A	Wall Mount, Rising Stem	Upward	Stainless Steel 316	
<b>Mounting Details:</b>	Gate No.	Opening Invert Elevation (metres)	Base of Pedestal or Top of Concrete Elevation (metres)	Centreline Operator Elevation (metres)	Max. Water Level (metres)
	SLG-F001A	240.74	245	246	244.5
	SLG-F053A	231.0	239.4	240.4	237.0
	SLG-F054A	231.0	239.4	240.4	237.0
	SLG-F055A	231.0	239.4	240.4	237.0
Confirm with Contract Administrator all Elevations Prior to Manufacturing					
<b>Seating Head and Unseating Head:</b>	Gate No.	Unseating Head (meters)	Seating Head (meters)		
	SLG-F001A	3.76	3.76		
	SLG-F053A	4.0	6.0		
	SLG-F054A	4.0	6.0		
	SLG-F055A	5.0	6.0		
<b>Wall Thickness:</b>	Gate No.	Wall Thickness (millimeters)			
	SLG-F001A	250 millimetre at the base and 250 millimetre at the top			
	SLG-F053A	400 millimetre at the base and 400 millimetre at the top			
	SLG-F054A	400 millimetre at the base and 400 millimetre at the top			
	SLG-F055A	600 millimetre at the base and 600 millimetre at the top			

<b>Operator/ Actuator:</b>	<b>Gate No.</b>	<b>Operator Type</b>	<b>Motor and Operating Conditions</b>
	SLG-F001A	Geared Manual Crank/Handwheel and Portable Drill	
	SLG-F053A	Geared Manual Crank/Handwheel and Portable Drill	
	SLG-F054A	Geared Manual Crank/Handwheel and Portable Drill	
	SLG-F055A	Geared Manual Crank/Handwheel and Portable Drill	
<b>Stem Cover:</b>	Galvanized steel pipe with acrylic window c/w graduations in millimetres		
<b>Position Monitoring:</b>	Provide open/close position limit switches		

E6.5 Gate Schedule for Area O (Ozone Area)

<b>Specification Standard:</b>	AWWA C561-04 for fabricated Stainless Steel Slide Gates			
<b>Nominal Size:</b>	2000 W millimetre x 1400 H millimetre (SLG-O210A) 2000 W millimetre x 1400 H millimetre (SLG-O230A) 1800 W millimetre x 900 H millimetre (SLG-O210B) 1800 W millimetre x 900 H millimetre (SLG-O210C) 1800 W millimetre x 900 H millimetre (SLG-O230B) 1800 W millimetre x 900 H millimetre (SLG-O230C)			
<b>Type:</b>	<b>Gate No.</b>	<b>Type</b>	<b>Opening</b>	<b>Material of Construction</b>
	SLG-O210A	Wall mount, rising system	Upward	Stainless Steel 316
	SLG-O230A	Wall mount, rising system	Upward	Stainless Steel 316
	SLG-O210B	Wall mount, rising system	Upward	Stainless Steel 316
	SLG-O210C	Wall mount, rising system	Upward	Stainless Steel 316
	SLG-O230B	Wall mount, rising system	Upward	Stainless Steel 316
	SLG-O230C	Wall mount, rising system	Upward	Stainless Steel 316

<b>Mounting Details:</b>	<table border="1"> <thead> <tr> <th>Gate No.</th> <th>Opening Invert Elevation (metres)</th> <th>Base of Pedestal or Top of Concrete Elevation (metres)</th> <th>Centreline Operator Elevation (metres)</th> <th>Max. Water Level (metres)</th> </tr> </thead> <tbody> <tr> <td>SLG-O210A</td> <td>241.00</td> <td>245.00</td> <td>246.00</td> <td>243.49</td> </tr> <tr> <td>SLG-O230A</td> <td>241.00</td> <td>245.00</td> <td>246.00</td> <td>243.49</td> </tr> <tr> <td>SLG-O210B</td> <td>240.74</td> <td>245.00</td> <td>246.00</td> <td>243.25</td> </tr> <tr> <td>SLG-O210C</td> <td>240.74</td> <td>245.00</td> <td>246.00</td> <td>243.25</td> </tr> <tr> <td>SLG-O230B</td> <td>240.74</td> <td>245.00</td> <td>246.00</td> <td>243.25</td> </tr> <tr> <td>SLG-O230C</td> <td>240.74</td> <td>245.00</td> <td>246.00</td> <td>243.25</td> </tr> </tbody> </table>	Gate No.	Opening Invert Elevation (metres)	Base of Pedestal or Top of Concrete Elevation (metres)	Centreline Operator Elevation (metres)	Max. Water Level (metres)	SLG-O210A	241.00	245.00	246.00	243.49	SLG-O230A	241.00	245.00	246.00	243.49	SLG-O210B	240.74	245.00	246.00	243.25	SLG-O210C	240.74	245.00	246.00	243.25	SLG-O230B	240.74	245.00	246.00	243.25	SLG-O230C	240.74	245.00	246.00	243.25
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<b>Stem Cover:</b>	Galvanized steel pipe with acrylic window c/w graduations																																			
<b>Position Monitoring:</b>	Provide open/close position limit switches.																																			

## **E7. EQUIPMENT DELIVERY**

- E7.1 Delivery of parts or materials, which are required in advance of the delivery of the equipment, shall be made when required by the City.
- E7.2 The Installer shall be responsible for receiving, off-loading, and placing into storage of the equipment on Site. Written acceptance of receipt, at delivery, by the Installer shall constitute "Delivery to Site" under this contract. A duly executed "Certificate of Equipment Delivery", **Form 100** shall be completed. A sample of this Form is attached.
- E7.3 A representative from each of the following groups shall be in attendance at the time of delivery: the Contractor, the Installer, and the Contract Administrator. Any damage identified during the inspection shall be repaired as per the Manufacturer's recommendations by the Contractor at the Contractor cost.
- E7.4 Delivery shall conform to the Project Master Schedule. 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.
- E7.5 The Contractor shall deliver the gates to the Site as specified in the 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.
- E7.6 Shipments shall be free on board (F.O.B.) Site, freight prepaid. Cost of shipping to the site shall be included.
- E7.7 No delivery to the Site shall occur until Acceptable Shop Drawings are received by the Contractor.
- E7.8 The Installer 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 Installer with full instructions in writing of all precautions to be observed in connection with the handling, storage, and protection of the equipment. A copy of all instructions shall be provided to the Contract Administrator prior to delivery.

## **E8. INSTALLATION ASSISTANCE**

- E8.1 Before commencing installation of equipment, the Contractor shall arrange for the attendance of the Manufacturer's Representative to provide the Installer instructions in the methods, techniques, precautions, and any other information relevant to the successful installation of the equipment.
- E8.2 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.
- E8.3 The Contractor shall inform the Contract Administrator, in writing, of the attendance at the Site of any Manufacturer's Representative for installation training at least fourteen (14) days prior to arrival.
- E8.4 Notwithstanding E.8.3, all Site visits required by the Contractor to verify proper installation and performance shall conform to the requirements of the City and Project Master Schedule.
- E8.5 When the Manufacturer's Representative is satisfied that the Installer is aware of all installation requirements, he shall so certify by completing **Form 101**.

- E8.6 The completed form shall be delivered to the Contract Administrator prior to departure of the Manufacturer's Representative from the Site.
- E8.7 Installation of the equipment will not commence until the Contract Administrator has advised that he has received the completed **Form 101**.
- E8.8 Separate copies of **Form 101** shall be used for different equipment.

## **E9. INSTALLATION**

- E9.1 If necessary, or if so directed by the Contract Administrator during the course of installation, the Installer may contact the Manufacturer to receive clarification of installation procedures, direction, or any other additional information necessary to continue or complete the installation in an appropriate manner. The Manufacturer shall provide the required clarification at the Contractor's cost.
- E9.2 If it is found necessary, or if so directed by the Contract Administrator, the Installer shall contact the Contractor who shall arrange for the Manufacturer's Representative to visit the Site to provide assistance during installation, all at the Contractor's cost.
- E9.3 The Contract Administrator will inform the Contractor who shall arrange for the attendance at the Site of the Manufacturer's Representative to verify successful installation.
- E9.4 The Manufacturer's Representative shall conduct a detailed inspection of the installation including alignment, electrical connections, rotation direction, running clearances, lubrication, workmanship and all other items as required to ensure successful operation of the equipment.
- E9.5 The Manufacturer's Representative shall identify any outstanding deficiencies in the installation.
- E9.6 The deficiencies will be rectified by the Installer and the Manufacturer's Representative shall re-inspect the installation, at the Installer's cost.
- E9.7 The Contractor shall allow for a minimum of one (1) full eight (8) hour day at the Site for installation instructions
- E9.8 When the Manufacturer's Representative accepts the installation, he shall certify the installation by completing **Form 102**, attached to this specification.
- E9.9 Deliver the completed **Form 102** to the Contract Administrator prior to departure of the Manufacturer's Representative from the Site.
- E9.10 Tag the equipment with a 100 millimetre x 200 millimetre card stating "EQUIPMENT CHECKED. DO NOT RUN." stencilled in large black letters. Sign and date each card.
- E9.11 Provide separate copies of **Form 102** for different equipment.

## **E10. TESTING AND PERFORMANCE VERIFICATION**

- E10.1 Contractor to coordinate with Contract Administrator for the field leakage test of the sluice gates.
- E10.2 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 in this document or under such simulated operating conditions as recommended or approved by the Contract Administrator.

- E10.3 Operate each gate with and without liquid on both sides to show that each gate can be operated with applied torques within design limits.
- E10.4 In the event any sluice gate field leakage test is not successful, retesting shall be required.
- E10.5 Depending upon the cause of the test failure, the Contract Administrator shall determine the responsible party for the re-testing cost.
- E10.6 Contractor shall coordinate the testing with the Contract Administrator. As a minimum contractor shall allow for seven (7) working days for testing in at least five (5) separate trips to the Site.
- E10.7 In addition to the filed leakage testing, the Contractor shall 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 Contract Administrator.
- E10.8 Contractor shall 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 by filling **Form 103**. Contract Administrator reserves the right to witness this shop testing at the factory.
- E10.9 Coordinate with the Contract Administrator and Installer such that the Contractor shall be in attendance during performance verification of the sluice gates to ensure that each gate functions as intended.

## **E11. TRAINING**

- E11.1 The Contractor shall provide 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 the Project Master Schedule. The training seminar shall be conducted on Site. 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<sup>1/2</sup>) 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 Manufacturer's Representative shall provide five (5) sets of training seminar manuals in similar format to the O&M manuals prior to the training session. In addition, the Manufacturer's Representative shall document each training session with detailed sets of minutes.
- E11.5 The training shall cover Operation and Maintenance.
- E11.6 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 T1** has been signed.

## **E12. EXTRA SITE VISITS**

- E12.1 If the Contractor is requested by 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 Site.

E12.2 These additional days must be approved by the Contract Administrator prior to the Contractor undertaking any such additional work.

**E13. FORMS**

E13.1 The following forms will be used in the contract:

- Form 100 Certificate of Equipment Delivery
- Form 101 Certificate of Readiness to Install
- Form 102 Certificate of Satisfactory Installation
- Form 103 Certificate of Equipment Satisfactory Performance
- Form T1 Certificate of Satisfactory Training

**E14. DRAWINGS**

E14.1 Refer to Drawing WB-M0151 for sluice gate overall location plan.

**THE CITY OF WINNIPEG**

**FORMS**

INDEX TO FORMS

Form 100 .....	Certificate Of Equipment Delivery
Form 101 .....	Certificate of Readiness to Install
Form 102 .....	Certificate of Satisfactory Installation
Form 103 .....	Certificate of Equipment Satisfactory Performance
Form T1 .....	Certificate of Satisfactory Training

## CERTIFICATE OF EQUIPMENT DELIVERY FORM 100

We certify that the equipment listed below has been delivered into the care of the Installer. The equipment has been found to be in satisfactory condition. No defects in the equipment were found.

**PROJECT:** \_\_\_\_\_

**ITEM OF EQUIPMENT:** \_\_\_\_\_

\_\_\_\_\_

**TAG NO:** \_\_\_\_\_

**REFERENCE SPECIFICATION:** \_\_\_\_\_

\_\_\_\_\_  
(Authorized Signing Representative of the Contractor)

\_\_\_\_\_  
Date

\_\_\_\_\_  
(Authorized Signing Representative of Installer)

\_\_\_\_\_  
Date

\_\_\_\_\_  
(Authorized Signing Representative of the Contract Administrator)

\_\_\_\_\_  
Date

## CERTIFICATE OF READINESS TO INSTALL FORM 101

I have familiarized the Installer of the specific installation requirements related to the equipment listed below and am satisfied that he understands the required procedures.

**PROJECT:** \_\_\_\_\_

**ITEM OF EQUIPMENT:** \_\_\_\_\_

\_\_\_\_\_

**TAG NO:** \_\_\_\_\_

**REFERENCE SPECIFICATION:** \_\_\_\_\_

\_\_\_\_\_  
(Authorized Signing Representative of the Manufacturer)

\_\_\_\_\_  
Date

I certify that I have received satisfactory installation instructions from the equipment Manufacturer/ Contractor.

\_\_\_\_\_  
(Authorized Signing Representative of the Installer)

\_\_\_\_\_  
Date

## CERTIFICATE OF SATISFACTORY INSTALLATION FORM 102

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 Manufacturer)

\_\_\_\_\_  
Date

\_\_\_\_\_  
(Authorized Signing Representative of the Installer)

\_\_\_\_\_  
Date

## CERTIFICATE OF EQUIPMENT SATISFACTORY PERFORMANCE FORM 103

We certify that the equipment listed below has been continuously operated for at least five (5) consecutive days and that the equipment operates satisfactorily and meets its specified operating 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 Manufacturer)

\_\_\_\_\_  
Date

\_\_\_\_\_  
(Authorized Signing Representative of the Installer)

\_\_\_\_\_  
Date

\_\_\_\_\_  
(Authorized Signing Representative of the Contract Administrator)

\_\_\_\_\_  
Date

1. Acknowledgement of Receipt of O&M Manuals.

\_\_\_\_\_  
(Authorized Signing Representative of the City)

\_\_\_\_\_  
Date

## CERTIFICATE OF SATISFACTORY TRAINING FORM T1

We certify that the initial training for the equipment listed below has been provided as per the Specifications.

**PROJECT:** \_\_\_\_\_

**ITEM OF EQUIPMENT:** \_\_\_\_\_

\_\_\_\_\_

**TAG No:** \_\_\_\_\_

**REFERENCE SPECIFICATION:** \_\_\_\_\_

\_\_\_\_\_  
(Trainer)

\_\_\_\_\_  
Date

\_\_\_\_\_  
(Authorized Signing Representative of the Installer)

\_\_\_\_\_  
Date

\_\_\_\_\_  
(Authorized Signing Representative of the Contract Administrator)

\_\_\_\_\_  
Date