



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 498-2006**

**WINNIPEG WATER TREATMENT PROGRAM – CONSTRUCTION OF STANDBY  
GENERATOR BUILDING AND ANCILLARY BUILDINGS**

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## **PART B - BIDDING PROCEDURES**

### **B1. PROJECT TITLE**

- B1.1 WINNIPEG WATER TREATMENT PROGRAM – CONSTRUCTION OF STANDBY GENERATOR BUILDING AND ANCILLARY BUILDINGS

### **B2. SUBMISSION DEADLINE**

- B2.1 The Submission Deadline is 12:00 noon Winnipeg time, October 6, 2006.
- B2.2 Bid Submissions determined by the Manager of Materials to have been received later than the Submission Deadline will not be accepted and will be returned upon request.
- B2.3 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

### **B3. SITE INVESTIGATION**

- B3.1 Further to GC:3.1, the Contract Administrator or an authorized representative will be available at the Site from 11:00 a.m. to 12:00 noon on September 21, 2006 to provide Bidders access to the Site.
- B3.2 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

### **B4. ENQUIRIES**

- B4.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.
- B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.
- B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.
- B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.
- B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

### **B5. ADDENDA**

- B5.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.
- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Branch internet site for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.
- B6. SUBSTITUTES**
- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least seven (7) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
  - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
  - (c) identify any anticipated cost or time savings that may be associated with the substitute;
  - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
  - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an "approved equal", any Bidder may use the approved equal in place of the specified item.

B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative shall base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.

B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

## **B7. BID SUBMISSION**

B7.1 The Bid Submission consists of the following components:

- (a) Form A: Bid;
- (b) Form B: Prices;
- (c) Form G1: Bid Bond and Agreement to Bond, or  
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or  
a certified cheque or draft.

B7.2 All components of the Bid Submission shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely in ink, to constitute a responsive Bid.

B7.3 The Bid Submission shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.

B7.3.1 Samples or other components of the Bid Submission which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid Submission.

B7.4 Bid Submissions submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B7.5 Bid Submissions shall be submitted to:

The City of Winnipeg  
Corporate Finance Department  
Materials Management Branch  
185 King Street, Main Floor  
Winnipeg MB R3B 1J1

## **B8. BID**

B8.1 The Bidder shall complete Form A: Bid, making all required entries.

B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
- (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
- (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
- (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

- B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.
- B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B8.4 Paragraph 12 of Form A: Bid shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
  - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
  - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
  - (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B8.4.1 The name and official capacity of all individuals signing Form A: Bid shall be printed below such signatures.
- B8.4.2 All signatures shall be original and shall be witnessed except where a corporate seal has been affixed.
- B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid Submission and the Contract, when awarded, shall be both joint and several.

## **B9. PRICES**

- B9.1 The Bidder shall state the price in Canadian funds for each item of the Work on Form B: Prices.
- B9.1.1 Notwithstanding GC.12.2.3(c), the price for item 2 on Form B: Prices shall not include the Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

## **B10. QUALIFICATION**

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

- (ii) have successfully carried out work similar in nature, scope and value to the portion of the Work proposed to be subcontracted to them, and are fully capable of performing the Work required to be done in accordance with the terms of the Contract;
  - (g) have a written workplace safety and health program in accordance with The Workplace Safety and Health Act (Manitoba).
- B10.2 Further to B10.1(g), the Bidder shall, within three (3) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
  - (a) a valid COR certification number under the Certificate of Recognition (COR) Program - Option 1 administered by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
  - (b) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association; or
  - (c) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt.>)
- B10.3 The Bidder shall be prepared to submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B10.4 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.
- B11. BID SECURITY**
- B11.1 The Bidder shall provide bid security in the form of:
  - (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or
  - (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
  - (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.
- B11.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.
- B11.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

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

## **B12. OPENING OF BIDS AND RELEASE OF INFORMATION**

- B12.1 Bid Submissions will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Branch, or in such other office as may be designated by the Manager of Materials.
- B12.1.1 Bidders or their representatives may attend.
- B12.1.2 Bid Submissions determined by the Manager of Materials, or his designate, to not include the bid security specified in B11 will not be read out.
- B12.2 After the public opening, the names of the Bidders and their Total Bid Prices as read out (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B12.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.
- B12.4 The Bidder is advised that any information contained in any Bid Submission may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

## **B13. IRREVOCABLE BID**

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

## **B14. WITHDRAWAL OF BIDS**

- B14.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B14.1.1 Notwithstanding GC:23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

- B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials shall:
- (a) retain the Bid Submission until after the Submission Deadline has elapsed;
  - (b) open the Bid Submission to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
  - (c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Bid withdrawn.
- B14.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B13.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

## **B15. EVALUATION OF BIDS**

- B15.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity (pass/fail);
  - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
  - (c) Total Bid Price;
  - (d) economic analysis of any approved alternative pursuant to B6.
- B15.2 Further to B15.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements if the interests of the City so require.
- B15.3 Further to B15.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid Submission or in other information required to be submitted, that he is responsible and qualified.
- B15.4 Further to B15.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B15.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

## **B16. AWARD OF CONTRACT**

- B16.1 The City will give notice of the award of the Contract by way of a letter of intent, or will give notice that no award will be made.
- B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

- B16.2.1** Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
  - (b) the prices are materially in excess of the prices received for similar work in the past;
  - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
  - (d) only one Bid is received; or
  - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B16.3** Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid.

## **PART C - GENERAL CONDITIONS**

### **C1. GENERAL CONDITIONS**

C1.1 The *General Conditions for Construction Contracts* (Revision 2000 11 09) are applicable to the Work of the Contract.

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

## PART D - SUPPLEMENTAL CONDITIONS

### GENERAL

#### D1. GENERAL CONDITIONS

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

#### D2. SCOPE OF WORK

- D2.1 The Work to be done under the Contract shall consist of Construction of an Emergency Generator Building, ancillary buildings and installation of City Supplied Equipment.
- D2.2 The major components of the Work are as follows:
- (a) Construction of:
    - (i) standby generator building;
    - (ii) foundations for fuel storage;
    - (iii) transformer pads and cable duct banks;
    - (iv) an inlet building and egress huts on the Clearwell, and
    - (v) construction of two valve chamber buildings.
  - (b) Earthworks, grading and culverts in accordance with City of Winnipeg Standard Construction Specifications CW-3170 and CW-3610.
  - (c) Supply, Installation and Performance Verification Support for all mechanical, process, electrical, instrumentation and controls associated with the above works and as shown in the Contract Documents, including receiving, and unloading, acceptance and installation of City Supplied Equipment supplied under Bid Opportunity 682-2005 Supply of Standby Generators and 5kV Switchgear (delivery in December, 2006).
  - (d) Shop drawings and other product information for the following City Supplied Equipment have been provided as follows:
    - (i) 682-2005 Supply of Standby Generators and 5kV Switchgear

#### D3. DEFINITIONS

- D3.1 When used in this Bid Opportunity:
- (a) **Supply Contractor** means a contractor retained by the City, under a separate contract, to supply City Supplied Equipment which shall be installed by the Contractor;

- (b) **City Supplied Equipment** means equipment purchased by the City under a separate contract which is supplied into the care of the Contractor for installation under this Contract.
- (c) **ANSI** means American National Standards Institute
- (d) **ASME** means American Society of Mechanical Engineers
- (e) **ASTM** means American Society for Testing and Materials
- (f) **AWWA** means American Water Works Association
- (g) **CSA** means Canadian Standards Association
- (h) **DAF** means Dissolved Air Flotation
- (i) **IEC** means International Electrotechnical Commission
- (j) **ISO** means International Organization for Standardization
- (k) **NACE** means National Association of Corrosion Engineers
- (l) **NSF** means National Sanitation Foundation
- (m) **SAE** means Society of Automotive Engineers
- (n) **Manufacturer** means the person, partnership or corporation responsible for the manufacture and fabrication of equipment supplied by the Contractor for the completion of the Work.
- (o) **Manufacturer's Representative** means a trained serviceman empowered by the Manufacturer to provide installation, testing, and commissioning assistance to the Contractor in his performance of those functions.
- (p) **IEEE** means Institute of Electrical and Electronics Engineers
- (q) **NEMA** means National Electrical Manufacturer's Association
- (r) **Furnish** means supply
- (s) **ISA** means the Instrumentation Systems and Automation Society
- (t) **AGMA** means American Gear Manufacturer's Association.
- (u) **API** means American Petroleum Institute
- (v) **EEMAC** means Electrical and Electronic Manufacturer Association of Canada
- (w) **VFD** means variable frequency drive
- (x) **VSD** means variable speed drive
- (y) **TPSH** means twisted pair shielded cable
- (z) **RTD** means resistance temperature detector
- (aa) **LOX** means liquid oxygen
- (bb) **GOX** means gaseous oxygen
- (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) **Major Equipment** means all equipment for which Shop Drawing submittals are required as specified herein.

- (gg) **Performance Verification** means all factory and field tests, demonstrations and other activities required from the Contractor to complete all required Forms 103 – Certificate of Equipment Satisfactory Performance and to demonstrate to the Contract Administrator’s satisfaction that the equipment installed under this Contract is performing as specified herein.
- (hh) **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.
- (ii) **Process Unit** means a complete equipment package supplied either by the Contractor or as part of City Supplied Equipment and which includes individual process components, skid mounted equipment and any related appurtenances.
- (jj) **Control System Integrator** means a contractor retained by the City (under a different contract) to program and configure the water treatment plant SCADA system.
- (kk) **Systems Integrator** means Control System Integrator.
- (ll) **SCADA** means supervisor control and data acquisition.
- (mm) **TGS** means Manitoba Transportation and Government Service.
- (nn) **MV** means medium voltage.
- (oo) **WTP** means the Winnipeg Water Treatment Plant and includes the structure and all equipment and materials supplied and installed into the building, under multiple construction contracts, including portions of the Work provided under this Contract.
- (pp) **City Warehouse** means the enclosed and heated City owned warehouse located at 1500 Plessis Road, Winnipeg, Manitoba.
- (qq) **Record Drawings** means a minimum of one (1) complete set of Contract Documents and Acceptable Shop Drawings maintained at the Contractor’s Site office on which the Contractor clearly shall clearly record in red pencil all Addenda, Change Orders, Field Instructions, and other revisions or as-built conditions which deviate from the original Contract Documents or Acceptable Shop Drawings.
- (rr) **O&M** means operation and maintenance
- (ss) **I&C** means instrumentation and control
- (tt) **AASHTO** means American Association of State Highway and Transportation Officials
- (uu) **UV** means ultraviolet
- (vv) **PVC** means polyvinyl chloride
- (ww) **ULC** means Underwriter’s Laboratories of Canada
- (xx) **ASHRAE** means American Society of Heating, Refrigerating, and Air Conditioning Engineers
- (yy) **AWS** means American Welding Society
- (zz) **NFPA** means National Fire Protection Association
- (aaa) **OSHA** means Occupational Safety and Health Act
- (bbb) **FS** means Federal Specifications
- (ccc) **AFBMA** means Anti-Friction Bearing Manufacturer’s Association
- (ddd) **NACE** means National Association of Corrosion Engineers
- (eee) **PLC** means programmable logic controller
- (fff) **I/O** means input/output
- (ggg) **UHMWPE** means ultra high molecular weight polyethylene

- (hhh) **NPSH** means net positive suction head
- (iii) **NPSHR** means net positive suction head required
- (jjj) **TEFC** means totally enclosed fan-cooled
- (kkk) **ABMA** means American Bearing Manufacturer's Association
- (lll) **BEP** means best efficiency point
- (mmm) **PTC** means positive thermal protection
- (nnn) **ODP** means open drip proof
- (ooo) **CEMA** means Canadian Electrical Manufacturer's Association
- (ppp) **TDH** means total dynamic head
- (qqq) **SSPC** means Steel Structures Painting Council
- (rrr) **P&ID** means process and instrumentation diagram
- (sss) **ILD** means instrument loop diagram
- (ttt) **HMI** means human machine interface
- (uuu) **UPS** means uninterruptible power supply
- (vvv) **MCC** means motor control centre
- (www) **Vendor Package** means a manufactured equipment package supplied and installed by the Contractor.
- (xxx) **CSSBI** means Canadian Sheet Steel Building Institute
- (yyy) **NLGA** means National Lumber Grades Authority
- (zzz) **CRCA** means Canadian Roof Contractors Association
- (aaaa) **NBC** means National Building Code
- (bbbb) **RSIC** means Reinforcing Steel Institute of Canada
- (cccc) **DBPS** means Deacon Booster Pump Station
- (dddd) **CISC** means Canadian Institute of Steel Construction
- (eeee) **AIA** means Aluminum Interlocking Armour
- (ffff) **QA/QC** means Quality Assurance/Quality Control
- (gggg) **DDC** means Direct Digital Control
- (hhhh) **ADC** means Air Diffusion Council
- (iiii) **EIA** means Electronic Industries Alliance
- (jjjj) **FM** means Factory Mutual
- (kkkk) **TAB** means Testing, Adjusting, Balancing
- (llll) **IPCEA** means insulated Power Cable Engineers Association
- (mmmm) **UL** means Underwriters Laboratories, Inc.
- (nnnn) **AWG** means American Wire Gauge
- (oooo) **WHMIS** means Workplace Hazardous Materials Information System
- (pppp) **BAS** means Building Automation Systems
- (qqqq) **SI** means International System of Units
- (rrrr) **BMS** means Building Management Systems
- (ssss) **ASPE** means American Society of Plumbing Engineers

- (tttt) **AABC** means Associated Air Balance Council
- (uuuu) **SMACNA** means Sheet Metal and Air Conditioning Contractor's National Association
- (vvvv) **NPS** means Normal Pipe Size
- (wwww) **ARI** means Air Conditioning and Refrigeration Institute
- (xxxx) **AMCA** means Air Movement and Control Association
- (yyyy) **TVSS** means Transient Voltage Surge Suppressors
- (zzzz) **SCR** means Silicon Controlled Rectifier
- (aaaa) **XLPE** means Cross-Linked Polyethylene
- (bbbb) **ICGA** means Insulated Cable Engineers Association

- 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:  
Lawrence Recksiedler, C.E.T.  
1479 Buffalo Place  
Winnipeg, MB, R3T 1L7  
e-mail: lawrence.recksiedler@uma.aecom.com  
Telephone No. (204) 986-4246  
Facsimile No. (204) 986-8393

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

#### **D5. CONTRACTOR'S SUPERVISOR**

- D5.1 At the pre-construction meeting, the Contractor shall identify his designated supervisor and any additional personnel representing the Contractor and their respective roles and responsibilities for the Work.

#### **D6. NOTICES**

- D6.1 Except as provided for in GC:23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.

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

D6.3 All notices of appeal to the Chief Administrative Officer shall be sent to the following address or facsimile number:

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

D6.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:

The City of Winnipeg  
Corporate Services Department  
Legal Services Division  
185 King Street, 3rd Floor  
Winnipeg MB R3B 1J1  
Facsimile No.: (204) 947-9155

## **D7. FURNISHING OF DOCUMENTS**

D7.1 Upon award of the Contract, the Contractor will be provided with five (5) complete sets of the Bid Opportunity. If the Contractor requires additional sets of the Bid Opportunity, they will be supplied to him at cost.

## **SUBMISSIONS**

### **D8. SAFE WORK PLAN**

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

D8.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

### **D9. INSURANCE**

D9.1 The 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.
- D9.3 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least fifteen (15) Calendar Days prior written notice to the Contract Administrator.

## **D10. PERFORMANCE SECURITY**

- D10.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:
- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or
  - (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
  - (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.
- D10.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.
- D10.2 If the bid security provided in his Bid Submission was not a certified cheque or draft pursuant to B11.1(c), the Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.

**D11. DETAILED PRICES**

D11.1 The Contractor shall provide the Contract Administrator with a detailed price breakdown in a format acceptable to the Contract Administrator at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.

**D12. SUBCONTRACTOR LIST**

D12.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in GC:4.1 for the return of the executed Contract.

**D13. DETAILED WORK SCHEDULE**

D13.1 The Contract Administrator has developed a Project Master Schedule for the project. This schedule will be available in the offices of the Contract Administrator and will be updated as required as the Work progresses.

D13.2 The Contractor shall, within 5 business days of award of contract, prepare a detailed Contract Work Schedule for his Work based on a critical path method (CPM) approach.

D13.3 The schedule shall conform to the Project Master Schedule and show, in a clear graphical manner, through the use of Gantt charts, in a maximum of weekly stages, the proposed progress of the main items, structures and subtrades of the contract and indicate the labour, construction crews, plant and equipment to be employed. Indicate the delivery date of major pieces of equipment to be supplied. The schedule shall be predicated on the completion of all Work on or before the date of Substantial Performance.

D13.4 Upon acceptance by the Contract Administrator, distribute copies of the revised schedule to Subcontractors and other concerned parties.

D13.5 The Contract Work Schedule shall be updated as the Work requires and submitted to the Contract Administrator.

D13.6 The Contractor shall instruct recipients to report to the Contractor immediately any problems anticipated by the timetable shown in the Contract Work Schedule.

D13.7 While it is intended that the Contractor shall be allowed, in general, to carry on the Contract in accordance with such general plans as may appear to him to be most desirable, the Contract Administrator, at his discretion, may direct the order in which, and points at which, the Work shall be undertaken.

D13.8 This control shall be exercised in the interests of the 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.

D13.9 The Contract Administrator shall be notified immediately when the Work under the Contract Work Schedule will adversely affect the work of other Contractors and the critical path of the Project Master Schedule as the Work under the Contractor's Contract Work Schedule is an integral part of the Project Master Schedule.

D13.10 The Contractor shall be familiar with all other Contract Work Schedules as contracted by the City with other Contractors and the critical path of the Project Master Schedule.

#### **D14. SECURITY CLEARANCE**

- D14.1 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.
- D14.2 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.
- D14.3 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.
- D14.4 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.
- D14.5 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.

#### **D15. SHOP DRAWING SUBMITTAL LIST**

- D15.1 Within thirty (30) Business Days of the notification of the Award of Contract by the way of Letter of Intent, the Contractor shall submit a complete list of all required submittals with specification Section numbers, description of item and estimated dates for submittals. This submittal list must be in electronic spreadsheet format in Microsoft Excel software.

#### **D16. INSTRUMENTATION AND CONTROLS**

- D16.1 Within forty (40) Business Days of the notification of the Award of Contract by the way of Letter of Intent, the Contractor shall provide a list of products to be provided under Division 17.

### **SCHEDULE OF WORK**

#### **D17. COMMENCEMENT**

- D17.1 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.
- D17.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
    - (i) evidence that the Contractor is in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba;
    - (ii) evidence of the workers compensation coverage specified in GC:6.14;
    - (iii) the Safe Work Plan specified in D8;
    - (iv) evidence of the insurance specified in D9;

- (v) the performance security specified in D10;
  - (vi) the detailed prices specified in D11;
  - (vii) the Subcontractor list specified in D12;
  - (viii) the Detailed Work Schedule specified in D13; and
  - (ix) the security clearances specified in D14.
- (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D17.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.

#### **D18. CRITICAL STAGES**

D18.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

- (a) Provide Acceptable Shop Drawings of the I&C panels for the System Integrator's use within forty (40) Business Days of the award of this Contract.
- (b) Energize the cables servicing the pad mounted transformers XFMR-H955A and XFMR-H955B that serve the WTP Electrical Room #1 by August 31, 2007. Successful installation shall be considered complete when the City can use the transformers to support construction activities in the WTP.
- (c) Supply and install service conductors to the existing (spare) main breaker in the DBPS distribution and energize the DBPS distribution by August 31, 2007. Successful installation shall be considered complete when the City can operate the DBPS using these new service conductors.

#### **D19. SUBSTANTIAL PERFORMANCE**

D19.1 The Contractor shall achieve Substantial Performance by September 30, 2007.

D19.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D19.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D19.4 Satisfactory Performance cannot be achieved without the completion of Form 103 Certificate of Equipment Satisfactory Performance for the City Supplied Equipment installed under this Contract.

#### **D20. TOTAL PERFORMANCE**

D20.1 The Contractor shall achieve Total Performance by November 15, 2007.

D20.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be reinspected.

D20.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

## **D21. LIQUIDATED DAMAGES**

D21.1 If the Contractor fails to achieve the 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) Critical stage as specified in D18.1(b) – two thousand, six hundred dollars (\$2,600.00);
- (b) Critical stage as specified in D18.1(c) – two thousand, six hundred dollars (\$2,600.00);
- (c) Substantial Performance – two thousand, six hundred dollars (\$2,600.00);
- (d) Total Performance – six hundred dollars (\$600).

D21.2 The amounts specified for liquidated damages in D21.1 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.

D21.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D21.4 The City will not pay a bonus for performance if the Contractor reaches Substantial Performance or Total Performance earlier than the dates specified herein.

## **CONTROL OF WORK**

### **D22. JOB MEETINGS**

D22.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

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

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

D23.1 Further to GC:6.26, UMA Projects (CM) Ltd. shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

D23.2 As Prime Contractor, UMA Projects (CM) Ltd. will administer a Safety and Health Management Plan. Compliance with this Plan will be mandatory for all personnel on the construction site and orientation of all staff by the Prime Contractor's Safety Officer will be required. Further to GC:6.26, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

D23.3 The Water Treatment Program Project Safety and Health Management Plan is available on the City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt/projects>

#### **D24. COOPERATION WITH OTHERS**

D24.1 The Contractor shall note that several other construction contracts will be underway at the time of construction, including, but not limited to;

- (a) Bid Opportunity 682-2005 Winnipeg Water Treatment Program – Supply of Standby Generator and 5kV Switchgear
- (b) Bid Opportunity 583-2005 Water Treatment Program - Water Treatment Plant Foundations and Concrete Structures;
- (c) Bid Opportunity 742-2005 Winnipeg Water Treatment Program – The Supply and Installation of Water Treatment Plant Process Mechanical and Electrical; and
- (d) Bid Opportunity 743-2005 Winnipeg Water Treatment Program – Water Treatment Plant Building Envelope.

D24.2 Bid Opportunities for the above are available at the City of Winnipeg Materials Management website at <http://www.winnipeg.ca/matmgt/bidopp.asp>.

D24.3 The Contractor will not have exclusive use of the Site. The Contractor shall coordinate activities with others and minimize disruptions to others, where possible.

D24.4 Where site access requires relocation for installation of works, the Contractor shall construct suitable, all-weather detours, as required.

D24.5 The Contractor shall note that the Deacon Booster Pumping Station and surrounding compound will be in use during the construction period. The Contractor shall maintain reasonable access to all existing plant, valve chambers, rail, mechanical and electrical facilities at all times. The Contractor shall provide all reasonable assistance to City operations personnel to provide safe, secure access to operational facilities.

### **MEASUREMENT AND PAYMENT**

#### **D25. PAYMENT SCHEDULE**

- (a) Further to GC:12, payment shall be in accordance with the following payment schedule:  
The lump sum prices listed in Form B: Prices will be paid on the basis of monthly progress estimates in accordance with GC:12 and the detailed price breakdown prepared pursuant to D11.

### **WARRANTY**

#### **D26. WARRANTY**

D26.1 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.

- D26.2 Notwithstanding GC.10.01, GC.10.02 and D26.1, 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.
- D26.3 Notwithstanding GC:13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter, except where longer warranty periods are specified in the respective Specification sections, unless extended pursuant to GC:13.2.1 or GC:13.2.2, in which case it shall expire when provided for thereunder.
- D26.3.1 For the purpose of Performance Security, the warranty period shall be one (1) year.
- D26.4 Warranty for the installation of City Supplied Equipment is the responsibility of the Contractor. Warranty for the proper operation of properly installed City Supplied Equipment is the responsibility of the Supply Contractor.

**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. 498-2006

WINNIPEG WATER TREATMENT PROGRAM – CONSTRUCTION OF STANDBY GENERATOR BUILDING AND ANCILLARY BUILDINGS

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. 498-2006

WINNIPEG WATER TREATMENT PROGRAM – CONSTRUCTION OF STANDBY GENERATOR  
BUILDING AND ANCILLARY BUILDINGS

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

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

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

\_\_\_\_\_ Canadian dollars.

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

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

Partial drawings are permitted.

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

\_\_\_\_\_  
(Address)

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

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

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

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

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

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

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

\_\_\_\_\_  
(Name of bank or financial institution)

Per: \_\_\_\_\_  
(Authorized Signing Officer)

Per: \_\_\_\_\_  
(Authorized Signing Officer)



## PART E - SPECIFICATIONS

### GENERAL

#### E1. APPLICABLE SPECIFICATIONS, STANDARD DETAILS AND DRAWINGS

E1.1 *The City of Winnipeg Standard Construction Specifications* in its entirety, whether or not specifically listed on Form B: Prices, shall apply to the Work.

E1.1.1 *The City of Winnipeg Standard Construction Specifications* is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt>.

E1.1.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.

E1.1.3 Further to GC:2.4(d), Specifications included in the Bid Opportunity shall govern over *The City of Winnipeg Standard Construction Specifications*.

E1.2 The following Drawings are applicable to the Work:

#### STANDBY POWER GENERATOR

##### Consultant

<u>Dwg No.</u>	<u>City Drawing No.</u>	<u>Title</u>
WD-E0112	1-0601D-A-E0112-001-00D	ELECTRICAL - DBPS FLOOR PLAN
WD-P0002	1-0601D-G-P0002-001-00D	PROCESS – BRANCH 1 - PROCESS AND INSTRUMENTATION DIAGRAM
WG-A0401	1-0601G-H-A0401-001-00B	AUTOMATION / I&C - VALVE ACTUATOR FV-T301A - LOOP DIAGRAM
WG-A0402	1-0601G-H-A0402-001-00B	AUTOMATION / I&C - VALVE ACTUATOR FV-T302A - LOOP DIAGRAM
WG-A0403	1-0601G-H-A0403-001-00B	AUTOMATION / I&C - LS-T301A VALVE VAULT FLOOD SWITCH - LOOP DIAGRAM
WG-A0404	1-0601G-H-A0404-001-00B	AUTOMATION / I&C - LS-T302A VALVE VAULT FLOOD SWITCH - LOOP DIAGRAM
WG-B0100	1-0601G-A-B0100-001-00D	ARCHITECTURAL - CRAWL SPACE AND MAIN FLOOR PLANS
WG-B0140	1-0601G-A-B0140-001-00D	ARCHITECTURAL - ROOF PLAN AND DETAILS
WG-B0201	1-0601G-A-B0201-001-00D	ARCHITECTURAL - BUILDING SECTIONS
WG-B0202	1-0601G-A-B0202-001-00D	ARCHITECTURAL - WALL SECTIONS
WG-B0203	1-0601G-A-B0203-001-00D	ARCHITECTURAL - WALL SECTIONS
WG-B0301	1-0601G-A-B0301-001-00D	ARCHITECTURAL - BUILDING ELEVATIONS
WG-B0401	1-0601G-A-B0401-001-00D	ARCHITECTURAL - WALL SECTION AND DETAILS
WG-B0501	1-0601G-A-B0501-001-00D	ARCHITECTURAL - ROOM FINISH SCHEDULE, DOOR SCHEDULE & CODE ANALYSIS
WG-C0101	1-0601G-A-C0101-001-00D	CIVIL - OVERALL SITE PLAN
WG-C0102	1-0601G-A-C0102-001-00D	CIVIL - GENERATOR BUILDING, TRANSFORMER AND FUEL TANKS - GRADING PLAN
WG-E0001	1-0601G-A-E0001-001-00D	ELECTRICAL - SITE PLAN
WG-E0002	1-0601G-A-E0002-001-00D	ELECTRICAL - PARTIAL SITE PLAN
WG-E0003	1-0601G-A-E0003-001-00D	ELECTRICAL - SITE DETAILS
WG-E0101	1-0601G-A-E0101-001-00D	ELECTRICAL - CRAWLSPACE LIGHTING PLAN AND SCHEDULE
WG-E0102	1-0601G-A-E0102-001-00D	ELECTRICAL - CRAWLSPACE POWER PLAN AND SECTIONS
WG-E0103	1-0601G-A-E0103-001-00D	ELECTRICAL - CRAWLSPACE AND MAIN FLOOR GROUNDING PLANS
WG-E0111	1-0601G-A-E0111-001-00D	ELECTRICAL - MAIN FLOOR LIGHTING PLAN
WG-E0112	1-0601G-A-E0112-001-00D	ELECTRICAL - MAIN FLOOR POWER PLAN
WG-E0401	1-0601G-F-E0401-001-00D	ELECTRICAL - SINGLE LINE DIAGRAM - MAIN DISTRIBUTION
WG-E0402	1-0601G-F-E0402-001-00D	ELECTRICAL - SINGLE LINE DIAGRAM - GENERATOR SWITCHBOARD
WG-E0403	1-0601G-A-E0403-001-00D	ELECTRICAL - BUILDING DISTRIBUTION SINGLE LINE DIAGRAM
WG-E0404	1-0601G-A-E0404-001-00D	ELECTRICAL - CRAWLSPACE CABLE TRAY DETAILS
WG-E0501	1-0601G-A-E0501-001-00D	ELECTRICAL - SCHEDULES
WG-E0502	1-0601G-A-E0502-001-00D	ELECTRICAL - SCHEDULES
WG-H0001	1-0601G-D-H0001-001-00D	MECHANICAL - LEGEND AND SYMBOLS
WG-H0100	1-0601G-A-H0100-001-00D	MECHANICAL - PLUMBING PLAN - CRAWLSPACE PLAN AND MAIN LEVEL PLAN
WG-H0110	1-0601G-A-H0110-001-00D	MECHANICAL - PIPING PLAN - MAIN LEVEL PLAN
WG-H0120	1-0601G-A-H0120-001-00D	MECHANICAL - VENTILATION PLAN
WG-H0140	1-0601G-A-H0140-001-00D	MECHANICAL - VENTILATION PLAN
WG-H0201	1-0601G-A-H0201-001-00D	MECHANICAL - FUEL PIPING SECTION
WG-H0202	1-0601G-A-H0202-001-00D	MECHANICAL - VENTILATION SECTIONS
WG-H0203	1-0601G-A-H0203-001-00D	MECHANICAL - VENTILATION SECTIONS
WG-H0204	1-0601G-A-H0204-001-00D	MECHANICAL - VENTILATION SECTIONS
WG-H0401	1-0601G-A-H0401-001-00D	MECHANICAL - VENTILATION STANDARD DETAIL

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<b>Consultant Dwg No.</b>	<b>City Drawing No.</b>	<b>Title</b>
WG-H0402	1-0601G-A-H0402-001-00D	MECHANICAL - STANDARD DETAIL
WG-H0501	1-0601G-A-H0501-001-00D	MECHANICAL - COOLING AND VENTILATION SCHEMATICS
WG-H0502	1-0601G-A-H0502-001-00D	MECHANICAL - GN-E901A - COOLING AND VENTILATION SCHEMATICS
WG-H0503	1-0601G-A-H0503-001-00D	MECHANICAL - GN-E902A - COOLING AND VENTILATION SCHEMATICS
WG-H0504	1-0601G-A-H0504-001-00D	MECHANICAL - GN-E903A - COOLING AND VENTILATION SCHEMATICS
WG-H0505	1-0601G-A-H0505-001-00D	MECHANICAL - FUEL OIL PIPING SCHEMATIC
WG-P0001	1-0601G-G-P0001-001-00D	PROCESS - PROCESS AND INSTRUMENTATION DIAGRAM
WG-P0002	1-0601G-G-P0002-001-00D	AUTOMATION / I&C - FUEL SYSTEM PROCESS AND INSTRUMENTATION DIAGRAM
WG-P0003	1-0601G-G-P0003-001-00D	AUTOMATION / I&C - CELL 1 RAW WATER VALVE CHAMBER AIR CAP MONITORING
WG-S0001	1-0601G-A-S0001-001-00D	STRUCTURAL - GENERAL NOTES
WG-S0002	1-0601G-A-S0002-001-00D	STRUCTURAL - SCHEDULES - STANDARD DETAILS
WG-S0003	1-0601G-A-S0003-001-00D	STRUCTURAL - STANDARD DETAILS
WG-S0100	1-0601G-A-S0100-001-00D	STRUCTURAL - PILING PLAN AND FOUNDATION PLAN
WG-S0110	1-0601G-A-S0110-001-00D	STRUCTURAL - MAIN FLOOR FRAMING PLAN
WG-S0140	1-0601G-A-S0140-001-00D	STRUCTURAL - ROOF FRAMING PLAN & PARTIAL PILING PLAN
WG-S0201	1-0601G-A-S0201-001-00D	STRUCTURAL - FLOOR PENETRATIONS PLAN - BUILDING SECTIONS
WG-S0202	1-0601G-A-S0202-001-00D	STRUCTURAL - BUILDING SECTIONS
WG-S0203	1-0601G-A-S0203-001-00D	STRUCTURAL - BUILDING SECTIONS & DETAILS
WG-S0301	1-0601G-A-S0301-001-00D	STRUCTURAL - ELEVATIONS
WG-S0401	1-0601G-A-S0401-001-00D	STRUCTURAL - DETAILS
WG-S0402	1-0601G-A-S0402-001-00D	STRUCTURAL - DETAILS
WG-S0403	1-0601G-A-S0403-001-00D	STRUCTURAL - PLAN DETAILS
WG-S0404	1-0601G-A-S0404-001-00D	STRUCTURAL - DETAILS
WG-S0405	1-0601G-A-S0405-001-00D	STRUCTURAL - SHROUD PLANS SECTIONS & DETAILS
WG-S0406	1-0601G-A-S0406-001-00D	STRUCTURAL - SECTIONS AND DETAILS
WG-S0407	1-0601G-A-S0407-001-00D	STRUCTURAL - TRANSFORMER - SECTIONS & DETAILS
WG-S0408	1-0601G-A-S0408-001-00D	STRUCTURAL - FUEL TANKS - SECTIONS & DETAILS
WG-S0450	1-0601G-A-S0450-001-00D	STRUCTURAL - DUCT BANK PLAN & SECTIONS
WG-S0451	1-0601G-A-S0451-001-00D	STRUCTURAL - DUCT BANK PLAN
WG-S0452	1-0601G-A-S0452-001-00D	STRUCTURAL - DUCT BANK SECTIONS
WH-A0100	1-0601H-E-A0100-001-02D	AUTOMATION / I&C - PLANT COMMUNICATION NETWORK - OVERALL BLOCK CABLE DIAGRAM
WH-A0103	1-0601H-E-A0103-001-02D	AUTOMATION / I&C - PLANT COMMUNICATION NETWORK - BLOCK DIAGRAM
WH-A0104	1-0601H-E-A0104-001-02D	AUTOMATION / I&C - PLANT COMMUNICATION NETWORK - BLOCK DIAGRAM

### TREATED WATER STORAGE INLET

<b>Consultant Dwg No.</b>	<b>City Drawing No.</b>	<b>Title</b>
WB-A0401	1-0601B-D-A0401-001-02B	AUTOMATION / I&C - Ultrasonic Level Transducer - Installation Details
WB-A0402	1-0601B-D-A0402-001-02B	AUTOMATION / I&C - Loop Powered Remote Indicating Transmitter – Installation Details
WB-A0403	1-0601B-D-A0403-001-02B	AUTOMATION / I&C - Hand Switch Mounting - Installation Details
WB-A0404	1-0601B-D-A0404-001-03B	AUTOMATION / I&C - Pressure Guage Installation – Installation Details
WB-A0405	1-0601B-D-A0405-001-02B	AUTOMATION / I&C - Pressure Switch – Installation Details
WB-A0406	1-0601B-D-A0406-001-02B	AUTOMATION / I&C - Float Switch - Installation Details
WB-A0407	1-0601B-D-A0407-001-02B	AUTOMATION / I&C - Thermowell Mounted RTD - Installation details
WB-A0408	1-0601B-D-A0408-001-02B	AUTOMATION / I&C - Pressure Transmitter and Inline Pressure Sensor - Installation Details
WB-A0409	1-0601B-D-A0409-001-02B	AUTOMATION / I&C - Raw Water pH/Turbidity Analyzer - Installation Details
WB-A0410	1-0601B-D-A0410-001-02B	AUTOMATION / I&C - Turbidity / TSS Sensor - Installation Details
WT-B0001	1-0601T-D-B0001-001-00D	ARCHITECTURAL - DOOR TYPES & DOOR FRAMES DETAILS – ROOM FINISH & DOOR SCHEDULES
WT-B0002	1-0601T-A-B0002-001-00D	ARCHITECTURAL - FLOOR PLANS
WT-B0003	1-0601T-A-B0003-001-00D	ARCHITECTURAL - ROOF PLANS
WT-B0004	1-0601T-A-B0004-001-00D	ARCHITECTURAL - BUILDING ELEVATIONS
WT-B0005	1-0601T-A-B0005-001-00D	ARCHITECTURAL - EMERGENCY EGRESS HUT - BUILDING ELEVATIONS AND SECTION
WT-B0006	1-0601T-A-B0006-001-00D	ARCHITECTURAL - BUILDING SECTIONS AND DETAILS
WT-B0007	1-0601T-A-B0007-001-00D	ARCHITECTURAL - WALL SECTIONS
WT-E0001	1-0601T-F-E0001-001-00D	ELECTRICAL - PARTIAL SITE PLAN AND SINGLE LINE DIAGRAM
WT-E0111	1-0601T-A-E0111-001-00D	ELECTRICAL - LIGHTING AND EMERGENCY LIGHTING - FLOOR PLANS
WT-E0112	1-0601T-A-E0112-001-00D	ELECTRICAL - POWER AND FIRE ALARMS - FLOOR PLANS
WT-E0501	1-0601T-D-E0501-001-00D	ELECTRICAL - SCHEDULES
WT-I0301	1-0601T-G-I0301-001-00D	INSTRUMENTATION - ANALYZER INSTRUMENTS - SCHEMATIC
WT-M0002	1-0601T-A-M0002-001-00D	MECHANICAL - WASHDOWN PIPING SYSTEM - PLAN AND SECTIONS
WT-M0003	1-0601T-A-M0003-001-00D	MECHANICAL - VENTILATION - PLAN

**Consultant**

<u>Dwg No.</u>	<u>City Drawing No.</u>	<u>Title</u>
WT-M0004	1-0601T-A-M0004-001-00D	MECHANICAL - VENTILATION - SECTIONS
WT-M0005	1-0601T-A-M0005-001-00D	MECHANICAL - DETAILS AND SCHEMATICS
WT-M0006	1-0601T-A-M0006-001-00D	MECHANICAL - PLUMBING DETAILS
WT-M0007	1-0601T-G-M0007-001-00D	MECHANICAL - PIPING DETAILS - VENTILATION SCHEMATICS
WT-P001	1-0601T-G-P0001-001-09D	PROCESS - PROCESS AND INSTRUMENTATION DIAGRAM
WT-S0001	1-0601T-A-S0001-001-00D	STRUCTURAL - OVERALL PLAN
WT-S0002	1-0601T-A-S0002-001-00D	STRUCTURAL - PLANS
WT-S0003	1-0601T-A-S0003-001-00D	STRUCTURAL - SECTIONS AND DETAILS
WT-S0004	1-0601T-A-S0004-001-00D	STRUCTURAL - ELEVATIONS
WT-S0005	1-0601T-A-S0005-001-00D	STRUCTURAL - BUILDING SECTIONS
WT-S0006	1-0601T-A-S0006-001-00D	STRUCTURAL - STANDARD DETAILS - SHEET 1
WT-S0007	1-0601T-A-S0007-001-00D	STRUCTURAL - STANDARD DETAILS - SHEET 2
WT-S0008	1-0601T-A-S0008-001-00D	STRUCTURAL - COVER PLANS
WT-S0009	1-0601T-A-S0009-001-00D	STRUCTURAL - COVERS SECTIONS AND DETAILS

**YARD PIPING AND VALVE CHAMBERS**

**Consultant**

<u>Dwg No.</u>	<u>City Drawing No.</u>	<u>Title</u>
WY-B0160	1-0601Y-A-B0160-001-00D	ARCHITECTURAL - PLANS AND BUILDING ELEVATIONS
WY-B0161	1-0601Y-A-B0161-001-00D	ARCHITECTURAL - SECTIONS AND DETAILS
WY-E0121	1-0601Y-A-E0121-001-00D	ELECTRICAL - POWER AND LIGHTING
WY-E0122	1-0601Y-A-E0122-001-00D	ELECTRICAL - POWER AND LIGHTING
WY-H0401	1-0601Y-G-H0401-001-00D	MECHANICAL - SUMP PIT SCHEMATICS
WY-H0402	1-0601Y-A-H0402-001-00D	MECHANICAL - PLUMBING AND HVAC - PLANS, SECTIONS AND DETAILS
WY-H0403	1-0601Y-A-H0403-001-00D	MECHANICAL - PLUMBING AND HVAC - PLANS, SECTIONS AND DETAILS
WY-S0160	1-0601Y-A-S0160-001-00D	STRUCTURAL - SECTIONS AND DETAILS

**THE FOLLOWING DRAWINGS ARE INCLUDED FOR INFORMATION PURPOSES ONLY:**

**Consultant**

<u>Dwg No.</u>	<u>City Drawing No.</u>	<u>Title</u>
WB-A0451	1-0601B-H-A0451-001-01B	AUTOMATION / I&C - Typical Motorized Valve Open / Close - Instrumentation Loop Diagram
WB-A0452	1-0601B-H-A0452-001-01B	AUTOMATION / I&C - Typical Motorized Valve Modulating - Instrumentation Loop Diagram
WB-A0453	1-0601B-H-A0453-001-01B	AUTOMATION / I&C - Typical Magnetic Flowmeter - Instrumentation Loop Diagram
WB-A0454	1-0601B-H-A0454-001-01B	AUTOMATION / I&C - Typical Thermal Mass Flowmeter - Instrumentation Loop Diagram
WB-A0455	1-0601B-H-A0455-001-01B	AUTOMATION / I&C - Typical Ultrasonic Level Transmitter - Instrumentation Loop Diagram
WB-A0456	1-0601B-H-A0456-001-01B	AUTOMATION / I&C - Typical Thermal Dispersion Flowmeter - Instrumentation Loop Diagram
WB-A0457	1-0601B-H-A0457-001-01B	AUTOMATION / I&C - Typical Chlorine Residual Analyzer - Instrumentation Loop Diagram
WB-A0458	1-0601B-H-A0458-001-01B	AUTOMATION / I&C - Typical Conductivity Level Switch Single Point - Instrumentation Loop Diagram
WB-A0459	1-0601B-H-A0459-001-01B	AUTOMATION / I&C - Typical Turbidity Analyzer - Instrumentation Loop Diagram
WB-A0460	1-0601B-H-A0460-001-01B	AUTOMATION / I&C - Typical Ph Analyzer - Instrumentation Loop Diagram
WB-A0461	1-0601B-H-A0461-001-01B	AUTOMATION / I&C - Typical MCC Starter - Instrumentation Loop Diagram
WB-A0462	1-0601B-H-A0462-001-01B	AUTOMATION / I&C - Typical Turbidity / TSS Analyzer - Instrumentation Loop Diagram
WB-A0463	1-0601B-H-A0463-001-01B	AUTOMATION / I&C - Typical Discrete Input - Instrumentation Loop Diagram
WB-A0464	1-0601B-H-A0464-001-01B	AUTOMATION / I&C - Typical Valve Limit Switch - Instrumentation Loop Diagram
WB-A0465	1-0601B-H-A0465-001-01B	AUTOMATION / I&C - Typical Loop Powered Analogue Input - Instrumentation Loop Diagram
WB-A0466	1-0601B-H-A0466-001-01B	AUTOMATION / I&C - Typical 3 Wire RTD - Instrumentation Loop Diagram
WM-E0010	1-0601M-D-E0010-001-01D	ELECTRICAL - SYMBOLS LEGEND
WM-E0011	1-0601M-D-E0011-001-01D	ELECTRICAL - SYMBOLS LEGEND
WM-P0001	1-0601M-D-P0001-001-01D	CONSTRUCTION STANDARDS - PROCESS AND INSTRUMENTATION IDENTIFICATION
WM-P0002	1-0601M-D-P0002-001-01D	CONSTRUCTION STANDARDS - PROCESS AND INSTRUMENTATION SYMBOLS

E1.3 The following Specifications are applicable to the Work:

**Division 1**

01300	Submittals
01450	Quality Control

01600 Material and Equipment  
01730 Operation and Maintenance Manuals

**Division 2**

02223 Excavation and Backfilling for Structures  
02451 Pile Foundations, General  
02468 Precast Concrete Piles  
02641 Pipe Culverts

**Division 3**

03100 Concrete Formwork  
03200 Concrete Reinforcement  
03250 Concrete Accessories  
03300 Cast-In-Place Concrete  
03412 Precast Concrete Deck

**Division 4**

04051 Masonry Procedures  
04060 Masonry Mortar And Grout  
04080 Masonry Reinforcement And Connectors  
04090 Masonry Accessories  
04220 Concrete Masonry Units  
04230 Stone Masonry Units

**Division 5**

05120 Structural Steel  
05311 Metal Deck  
05500 Metal Fabrications  
05530 Aluminium Fabrications

**Division 6**

06100 Rough Carpentry

**Division 7**

07210 Building Insulation  
07270 Air Barriers  
07400 Metal Cladding  
07515 SBS Modified Bituminous Roofing  
07724 Roof Hatches  
07840 Firestopping and Smoke Seals  
07900 Joint Sealants

**Division 8**

08110 Steel Doors and Frames  
08310 Floor Hatches  
08335 Coiling Doors  
08520 Aluminium Windows  
08700 Door Hardware  
08800 Glass and Glazing

**Division 9**

09900 Finish Painting

**Division 14**

14550 Monorail and Hoists

### **Division 15**

15010	General Mechanical Provisions
15030	Testing
15080	Supports, Anchors and Seals
15100	Pipe and Pipe Fittings
15110	Valves and Strainers
15200	Piping Insulation
15210	Duct Insulation
15300	Pumps
15410	Plumbing General
15510	Fire Extinguishers
15650	Terminal Heat Transfer Units
15700	Air Cooled Condensing Units
15800	Indoor Premanufactured Air Handling Units
15815	Gas Fired Unit Heaters
15820	Fans
15830	Ductwork
15835	Duct Accessories
15855	Air Outlets
15865	Air Filters
15900	HVAC Instrumentation And Controls –General
15901	HVAC Controls, Field Components, and Instruments
15902	Microelectronic Control Components
15940	Clearwell Control Sequences
15990	Testing, Adjusting and Balancing
15999	List of Schedules

### **Division 16**

16010	Electrical General Requirements
16015	Scope of Electrical Work
16106	Installation of Cables in Trenches and In Ducts
16111	Conduits, Conduit Fastenings and Conduit Fittings
16114	Cable Trays
16120	HV Power Cables & 8Kv Shielded Cable Terminations
16122	Wires and Cable 0-1000V
16131	Splitters, Junction Boxes, Pull Boxes and Cabinets
16132	Outlet Boxes, Conduit Boxes and Fittings
16141	Wiring Devices
16151	Wire and Box Connectors
16160	Grounding
16191	Fastenings and Supports
16440	Disconnect Switches Fused and Non-Fused Up to 600V-Primary
16461	Dry Type Transformers Up to 600 V Primary
16471	Panelboards – Breaker Type
16477	Moulded Case Circuit Breakers
16480	Power Surge Protectors
16500	General Provisions for Interior Lighting
16519	Exit Lights
16610	Uninterruptible Powers Systems Static
16722	Multiplex Fire Alarm System
16811	Motor Starters to 600V
16815	Variable Frequency Drives
16825	Control Devices
16950	Connections to Mechanical Equipment
16960	Starting of Electrical Equipment Systems
16980	Testing, Adjusting and Balancing of Electrical Equipment and Systems
16990	Electrical Equipment and Systems Demonstrations and Instruction

### **Division 17**

17010	Instrumentation and Control General Requirements
17015	Scope of Instrumentation and Control Work
17110	Enclosures
17124	Instrumentation Cable
17130	Power Supplies
17140	Instrument Air Supply and Transmission
17211	Process Taps and Primary Elements
17212	Transmitters and Indicators

17216	Switches and Relays
17275	Miscellaneous Panel Devices
17300	Gas Detection Systems
17500	Programmable Logic Controllers
17501	Operator Interface Requirements
17600	PLC I/O Index
17600-A	PLC I/O Index
17700	Instrument Index
17700-A	Instrument Index
17701	Instrument Specification Sheets
17701-A	Instrument Specification Sheets
17702	Instrument Loop Drawings
17704	Instrument Standard Details

## GENERAL REQUIREMENTS

### E2. SOILS INVESTIGATION REPORT

E2.1 Further to GC:3.1, a copy of the geotechnical information is available on the Winnipeg Water Treatment Program – Project Site Information page at The City of Winnipeg, Corporate Finance, Materials Management Branch internet site at <http://www.winnipeg.ca/matmgt/projects>

#### E2.2 Test Hole Logs

- E2.2.1 Geotechnical information has been compiled from various sources to summarize subsurface conditions within the work area. Test\_Hole\_Logs-Set1.pdf at the aforementioned internet site.
- (a) By UMA Engineering
    - (i) TH's 04-01 to 04-10, 04-12 to 04-24, 04-31, and 04-33 to 04-50 (2004)
    - (ii) TH's 1 to 3 (1996)
  - (b) By Others
    - (i) TH A13 by KGS Group (1991)
    - (ii) TH's 3 to 6 by RM Hardy & Associates (1977)
    - (iii) TH 1 and 2 by Dyregrov Consultants (1993)
  - (c) The Figure attached with the Water Treatment Plant Test Pile Program in Appendix B of these Specifications illustrates the test pile locations in relation to the work area.
  - (d) Within the City of Winnipeg Water Treatment Plant Preliminary Design Report – Section 14 Geotechnical Investigation (2005), UMA Test Hole information is considered accurate at the locations drilled and at the time of the investigations. The inclusion of test hole data recorded by others does not represent any guarantees to the accuracy of this data.
  - (e) Test hole information is provided to assist in the Bidder's evaluation of subsurface conditions and the Bidder shall solely be responsible for any interpretation that they make from this information. Variations in soil conditions may exist between test holes and fluctuations in groundwater levels can be expected seasonally and may occur as a result of construction activities or operation of the Floodway.

#### E2.3 Test Pile Driving Records

E2.3.1 Test\_Pile\_Driving\_Records-Set1.pdf at the internet site identified in E2.2. shows data recorded by UMA Engineering Ltd. during driving of ten (10) test piles at the site in March, 2005.

#### E2.4 Surge Tower Overflow Testhole Logs

- E2.4.1 Additional geotechnical information for the Surge Tower Overflow Piping is provided at the internet site, identified as Test Hole Logs-Set 3.
- E2.5 Clearwell Pile Driving Records
- E2.5.1 Pile Driving Records for the Clearwell are provided at the internet site, identified as Clearwell Pile Driving Records.
- E2.6 Reports
- E2.6.1 Additional reports and geotechnical information listed as follows are available for viewing at the offices of Earth Tech Canada Inc., 850 Pembina Highway, Winnipeg, Manitoba.
- (a) The City of Winnipeg Water Treatment Plant Preliminary Design Report – Section 14 Geotechnical Investigation (2005)
  - (b) Water Impounding Reservoir - Cell #2 and Booster Pumping Station Deacon Manitoba by RM Hardy & Associates Ltd. (1977)
  - (c) Proposed Venturi Chambers Deacon Reservoir by Dyregrov Consultants (1993)
  - (d) Deacon Reservoir Expansion Proposed Groundwater Monitoring Program by KGS Group (1993)
  - (e) Shoal Lake Aqueduct Program 5 – Deacon Drainage Improvements by UMA Engineering Ltd. (1996)
  - (f) Pile Driving records from Deacon Booster Pumping Station by RM Hardy and Associates (1979).

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

### **E3. PILE CUT-OFF ELEVATIONS**

- E3.1 The elevations for pile cut-offs shall be as shown on the Drawings. Should the top of the pile be driven below cut-off elevation by up to 1.8 metres, the Contractor shall construct a pile extension as shown on the Drawings at no additional cost to the City.
- E3.2 Should the top of pile be driven below cut-off elevation by more than 1.8 metres, the Contractor shall supply and install a replacement pile at a location designated by the Contract Administrator. The replacement pile will be paid as additional work to the Contract in accordance with GC:7.

### **E4. OFFICE AND SITE FACILITIES**

- E4.1 The Contractor shall supply office facilities for his own use. The facilities shall be situated at the area designated on CM G001.
- E4.2 With reference to drawing CM G001, the City will provide to the Contractor without cost:
- (a) Space for a 40A two pole breaker in the Main Temporary Power Supply will be available to serve office lighting, receptacles and convenience power (electric space heating equipment is not allowed), the Contractor shall supply and install the breaker, cabling and the step down transformer (600v to 120/208v);
  - (b) Space for a 40A two pole breaker in the Main Temporary Power Supply will be available for a temporary site electrical panel to serve the construction site power panel (use of electric space heating equipment is not allowed); the Contractor shall

supply and install the breaker, cabling, site power panel and the step down transformer (600v to 120/208v);

- (c) Communications connections for four telephone and internet. The Contractor shall supply and install the telephone service from the City's existing telephone service pedestal that is located east of the DBPS compound entrance;
- (d) Onsite washroom and toilet facilities with non-potable water supply;
- (e) Unless otherwise specified, all required over-current protection, portable distribution panels and transformations, cables, conductors, grounding and other materials required to provide construction power for the Work shall be supplied and installed by the Contractor.

E4.3 The Contractor may arrange for additional facilities with the approval of the Contract Administrator and at the Contractor's cost.

## **E5. SITE ROADS AND WORK SITE ACCESS**

E5.1 The Contractor shall have access to the Site on Business Days between 07:00 and 18:00 unless otherwise approved by the Contract Administrator.

E5.2 Access to the Work Site is restricted and cooperation with other contractors on Site is necessary in the best interest of all parties.

E5.3 The Site is located on Provincial Road 207, 3.2 km north of Highway 1 in Dugald, Manitoba.

E5.3.1 The Site address is PR 207, Lot 57082, Dugald, Manitoba.

E5.4 Provincial Road 207 north of the GWWD rail crossing is a Class B1 road and is subject to load restrictions which will affect the maximum weight of individual deliveries. The approximately 3.2 km of PR 207 between the entrance to the Site and Highway 1 is a TAC Route.

E5.5 Access to the Site is generally limited to access from west of the Clearwell. The Contractor shall provide a temporary gravel access road as shown on CM G001, commencing at the 2700 outlet pipe and extending the length of the site, temporary access road is to be 5m wide x 300mm deep (250mm of 50mm down limestone and 50mm of 20mm down limestone) placed on a geotextile separation sheet. The access road may be used by other contractors during the duration of this contract (maintenance will be shared accordingly) and will remain in place to be utilized by future contracts.

E5.6 Access to the Site will be interrupted approximately once a month for a duration of approximately four hours due to deliveries of chemical via the railway. Access will also be interrupted for a two day period due to the construction of the future surge tower overflow.

E5.7 Maintenance and upkeep of the noted roads is the shared responsibility of all contractors who use the roads, including the Contractor.

E5.8 Construction and removal, if necessary, of any additional access roads is the responsibility of this Contractor.

## **E6. FIELD ENGINEERING**

E6.1 The Contractor shall engage a qualified surveyor to layout the works and record as-constructed measurements for Record Drawings.

E6.2 The surveyor shall be a registered Manitoba Land Surveyor, or an instrumentman or surveying firm experienced in layout of similar projects, subject to the approval of the Contract Administrator.

E6.3 Survey reference points for horizontal and vertical control are indicated on the drawings. The Contractor shall locate, confirm and preserve the reference points during construction.

## **E7. SITE DRAINAGE**

E7.1 The Contractor shall be responsible for drainage of all excavations associated with the Work from Award until Total Performance.

E7.2 Provision of adequate site drainage during the performance of the Contract shall be the Contractor's responsibility. The Contractor shall maintain site grading as necessary to provide for proper drainage away from the excavated areas. This water is to be re-directed into ditches outside of the site. Silt fences shall be properly erected and keyed into the primary ditches to prevent eroded materials from leaving the site. No extra payment or time extension will be granted as a result of difficulties associated with site access resulting from poor site drainage during any part of the performance of the Work.

## **E8. SANITATION FACILITY**

E8.1 Portable toilets may be provided by the Contractor. Any portable toilet shall be cleaned on a weekly basis and provided with regular maintenance as required to ensure proper operation.

E8.2 Portable toilets shall be located in an area acceptable to the Contract Administrator.

## **E9. WASTE CONTAINER**

E9.1 A waste container to dispose of garbage produced from the site shall be provided by the Contractor. It shall be located in a safe, convenient location, and be emptied as necessary by the Contractor. The provision, maintenance and removal of a waste container shall be considered a subsidiary obligation of the Contractor

## **E10. CONDITION, PROTECTION OF, AND ACCESS TO THE AQUEDUCT**

E10.1 Condition of the Aqueduct

E10.1.1 The Aqueduct is constructed of reinforced concrete and in some areas, contains numerous cracks. The Aqueduct, therefore, shall be considered as a fragile structure. All work procedures conducted by the Contractor on and/or near the Aqueduct shall be well planned and executed to ensure that the Aqueduct is not subjected to construction related loads, including excessive vibrations and concentrated or asymmetrical lateral loads.

E10.2 Protection of the Aqueduct

E10.2.1 Contractors working in the vicinity of the aqueduct shall ensure that:

- (a) Equipment shall only be permitted to cross the Aqueduct at designated bridge crossing locations and shall come to a complete stop before crossing.
- (b) Granular material, construction material, soil or other material shall not be stockpiled on the Aqueduct or within 10 metres of the Aqueduct centreline.
- (c) Construction practices shall not subject the Aqueduct arch to asymmetrical loading at any time.
- (d) Construction practices or procedures at or near the Aqueduct shall not impart excessive vibration loads on the Aqueduct and/or cause settlement of the subgrade below the Aqueduct.

E10.2.2 It is the Contractors' responsibility to ensure that all work crew members understand, observe, and work to the requirements of Specifications.

E10.3 Equipment Restrictions

E10.3.1 Equipment must cross the Aqueduct in a responsible and careful manner (i.e. slowly).

E10.3.2 Loads for Highway No. 207 shall be limited to the weight restrictions in place for the road unless otherwise permitted.

**E11. ENVIRONMENTAL PROTECTION**

E11.1 The Contractor shall be aware that the Aqueduct is for potable water supply and no contamination by fuel, chemicals, etc. shall be permitted at any time. Fuels or chemicals shall not be stored within 30 metres of the Aqueduct.

E11.2 The Contractor shall plan and implement the Work of this Contract strictly in accordance with the requirements of the environmental protection measures as herein specified.

E11.3 The Contractor is advised that at least the following Acts, Regulations, and By-laws apply to the Work:

E11.3.1 Federal

- (a) Canadian Environmental Protection Act (CEPA) c.16
- (b) Transportation of Dangerous Goods Act and Regulations c.34

E11.3.2 Provincial

- (a) The Dangerous Goods Handling and Transportation Act D12
- (b) The Endangered Species Act E111
- (c) The Environment Act c.E125
- (d) The Fire Prevention Act F80
- (e) The Manitoba Nuisance Act N120
- (f) The Public Health Act c.P210
- (g) The Workplace Safety and Health Act W120
- (h) Current applicable associated regulations.
- (i) The Fisheries Act
- (j) The Migratory Birds Act
- (k) The Historic Resources Act
- (l) Drinking Water Safety Act

E11.3.3 The Contractor is advised that the following environmental protection measures apply to the Work.

E11.3.4 Materials Handling and Storage

- (a) Construction materials shall not be stored within ten (10) metres of the Aqueduct centerline without the approval of the Contract Administrator.

E11.3.5 Fuel Handling and Storage

- (a) The Contractor shall abide by the requirements of Manitoba Conservation storage and handling of Petroleum Products and Allied Products Regulations for handling and storage of fuel products.

- (b) All fuel handling and storage facilities shall comply with The Dangerous Goods and Transportation Act Storage and Handling of Petroleum Products Regulation and any local land use permits.
- (c) Fuels, lubricants, and other potentially hazardous materials as defined in The Dangerous Goods and Transportation Act shall be stored and handled within the approved storage areas.
- (d) The Contractor shall ensure that all fuel storage containers are inspected daily for leaks and spillage.
- (e) Products transferred from the fuel storage area(s) to specific work sites shall not exceed the daily usage requirement.
- (f) When servicing requires the drainage or pumping of fuels, lubricating oils or other fluids from equipment, a groundsheet of suitable material (such as HDPE) and size shall be spread on the ground to catch the fluid in the event of a leak or spill. No repairs within 30 m of aqueduct or watercourse will be permitted.
- (g) Refuelling of mobile equipment and vehicles shall take place at least 30 m from a watercourse.
- (h) The area around storage sites and fuel lines shall be distinctly marked and kept clear of snow and debris to allow for routine inspection and leak detection.
- (i) A sufficient supply of materials, such as absorbent material and plastic oil booms, to clean up minor spills shall be stored nearby on-site. The Contractor shall ensure that additional material can be made available on short notice. All refuelling vehicles shall be equipped with a spill response kit.

#### E11.3.6 Waste Handling and Disposal

- (a) The construction area shall be kept clean and orderly at all times during and at completion of construction.
- (b) At no time during construction shall personal or construction waste be permitted to accumulate for more than one day at any location on the construction site, other than at a dedicated storage area as may be approved by the Contract Administrator.
- (c) Indiscriminate dumping, littering, or abandonment shall not take place.
- (d) No on-site burning of waste is permitted.
- (e) Equipment shall not be cleaned within 30 m of watercourses; contaminated water from onshore cleaning operations shall not be permitted to enter watercourses.

#### E11.3.7 Dangerous Goods/Hazardous Waste Handling and Disposal

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

#### E11.3.8 Emergency Spill Response

- (a) The Contractor shall ensure that due care and caution is taken to prevent spills.
- (b) The Contractor shall report all major spills of petroleum products or other hazardous substances with the potential for impacting the environment and threat to human health and safety to the Contract Administrator and Manitoba Conservation, immediately after occurrence of the environmental accident, by calling the 24-hour emergency telephone phone number (204) 945-4888.

- (c) The Contractor shall designate a qualified supervisor as the on-site emergency response coordinator for the project. The emergency response coordinator shall have the authority to redirect manpower in order to respond in the event of a spill. (Should include reference to a site-specific Emergency Response Plan and Environmental Protection Plan.)
- (d) The following actions shall be taken by the person in charge of the spilled material or the first person(s) arriving at the scene of a hazardous material accident or the on-site emergency response coordinator:
  - (i) Notify emergency-response coordinator of the accident:
    - identify exact location and time of accident
    - indicate injuries, if any
    - request assistance as required by magnitude of accident Manitoba Conservation 24-hour Spill Response Line (204) 945-4888, RCMP (Oakbank Detachment) (911), City of Winnipeg Fire Department (911), Springfield Ambulance (911), company backup, contact Contract Administrator.
  - (ii) Assess situation and gather information on the status of the situation, noting:
    - personnel on site
    - cause and effect of spill
    - estimated extent of damage
    - amount and type of material involved
    - proximity to waterways and the Aqueduct
  - (iii) If safe to do so, try to stop the dispersion or flow of spill material:
    - approach from upwind
    - stop or reduce leak if safe to do so
    - dyke spill material with dry, inert sorbent material or dry clay soil or sand
    - prevent spill material from entering waterways and utilities by dyking
    - prevent spill material from entering Aqueduct manholes and other openings by covering with rubber spill mats or dyking
  - (iv) Resume any effective action to contain, clean up, or stop the flow of the spilled product.

E11.4 The emergency response coordinator shall ensure that all environmental accidents involving contaminants shall be documented and reported to the Manitoba Conservation according to The Dangerous Goods Handling and Transportation Act Environmental Accident Report Regulation 439/87.

## **E12. SITE RESTORATION**

E12.1 The Contractor shall remove the temporary Site office and storage facilities prior to Total Performance.

E12.2 The Contractor will be responsible for grounds restoration, as determined necessary by the Contract Administrator.

E12.3 The Contractor will be responsible for any damage caused by his forces on roadways or accesses.

**E13. RECORD DRAWINGS**

- E13.1 The Contractor shall keep one (1) complete set of white prints at their Site office, including all Addenda, Change Orders, Field Instructions, and other revisions for the purposes of Record Drawings. As the Work proceeds, the Contractor shall clearly record in red pencil all as-built conditions which deviate from the original Contract documents.
- E13.2 The Record Drawings shall be available for review by the Contract Administrator upon request at any time during the performance of the Work.
- E13.3 Prior to achieving Substantial Performance, the Contractor shall submit the Record Drawings prepared to the Contract Administrator for his review and use. If, in the opinion of the Contract Administrator, the Record Drawings are incomplete or inaccurate, the Record Drawings will be returned to the Contractor and the Contractor shall revise and resubmit the Record Drawings at his cost.
- E13.4 Substantial Performance cannot be achieved without the submission of Record Drawings that are acceptable to the Contract Administrator.