



**THE CITY OF WINNIPEG**

# **BID OPPORTUNITY**

**BID OPPORTUNITY NO. 333-2014**

**CONTRACT 1 – SITE PREPARATION WORKS – SOUTH END WATER POLLUTION  
CONTROL CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 CONTRACT 1 – SITE PREPARATION WORKS – SOUTH END WATER POLLUTION CONTROL CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, July 25, 2014.

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

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

### **B3. SITE INVESTIGATION**

B3.1 Further to C3.1, a Site Investigation will be held at 1:00PM on July 11, 2014 to provide Bidders access to the Site for a non-mandatory Site Investigation.

- (a) Bidders are requested to register for the site investigation by e-mailing the Contract Administrator identified in D4.
- (b) Registration requests shall identify the Bidder, their contact information and names of intended attendees. Subcontractors shall also be identified along with their intended attendees, if applicable.
- (c) A maximum of three (3) attendees per Bidder are permitted, inclusive of all Subcontractors from each Bidder.

B3.2 The Bidder is advised that attendees are required to provide their own personal protective equipment as follows:

- (a) CSA approved footwear with protective toe;
- (b) Safety glasses;
- (c) Hearing protection in identified areas of the facility;
- (d) Hard hats;

B3.3 The Bidder is advised that they are responsible for determining, including but not limited to, the following:

- (a) The nature, quality of quantity of the Plant needed to perform the Work;
- (b) All matters concerning materials necessary for the completion of the Work; and,
- (c) All other matters which could in any way affect their Bid or performance of the Work;

B3.4 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. CONFIDENTIALITY**

- B5.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:
- (a) was known to the Bidder before receipt hereof; or
  - (b) becomes publicly known other than through the Bidder; or
  - (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.
- B5.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Bid Opportunity to the media or any member of the public without the prior written authorization of the Contract Administrator.

## **B6. ADDENDA**

- B6.1 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.
- B6.2 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.
- B6.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B6.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B6.3 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.

## **B7. SUBSTITUTES**

- B7.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B7.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B7.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B7.4 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.

B7.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her 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.

B7.6 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.

B7.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.

B7.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.

B7.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her 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 B16.

B7.9 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.

B7.10 Notwithstanding B7.2 to B7.9, and in accordance with B8.6 deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B16.1(a).

## **B8. BID COMPONENTS**

B8.1 The Bid shall consist of the following components:

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

- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B8.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B8.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.
- B8.5 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.
- B8.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B16.1(a).
- B8.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B8.8 Bids shall be submitted to:  
The City of Winnipeg  
Corporate Finance Department  
Materials Management Division  
185 King Street, Main Floor  
Winnipeg MB R3B 1J1

**B9. BID**

- B9.1 The Bidder shall complete Form A: Bid, making all required entries.
- B9.2 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/her own name, his/her 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/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.
- B9.3 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.
- B9.4 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/her 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/her 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.

B9.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

B9.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

## **B10. PRICES**

B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B10.1.1 Notwithstanding C12.2.3(c), except where otherwise indicated in Form B: Prices, the unit prices on Form B: Prices shall include the Manitoba Retail Sales Tax (MRST, also known as PST). The applicable MRST for Form B items G: Electrical Work and H: Mechanical Work shall be shown separately and shall be included in the applicable Subtotals and in the TOTAL BID PRICE.

B10.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B10.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

## **B11. QUALIFICATION**

B11.1 The Bidder shall:

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

B11.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

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

B11.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);



- B11.4 Further to B11.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
- (a) a copy of their valid Manitoba COR certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
  - (b) a copy of their valid Manitoba SECOR™ certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Small Employer Certificate of Recognition Program (SECOR™) administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
  - (c) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>).
- B11.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B11.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

## **B12. BID SECURITY**

- B12.1 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.
- B12.1.1 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.
- B12.1.2 All signatures on bid securities shall be original.
- B12.1.3 The Bidder shall sign the Bid Bond.
- B12.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.
- B12.2 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.
- B12.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B12.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B12.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

B12.3 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.

### **B13. OPENING OF BIDS AND RELEASE OF INFORMATION**

B13.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.

B13.1.1 Bidders or their representatives may attend.

B13.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/default.stm>

B13.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/default.stm>

B13.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

### **B14. IRREVOCABLE BID**

B14.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.

B14.2 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.

### **B15. WITHDRAWAL OF BIDS**

B15.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B15.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

B15.1.2 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.

B15.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

- (a) retain the Bid until after the Submission Deadline has elapsed;
- (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
- (c) if the notice has been given by any one of the persons specified in B15.1.3(b), declare the Bid withdrawn.

B15.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B14.2 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.

## **B16. EVALUATION OF BIDS**

B16.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation there from (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B11 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B7.

B16.2 Further to B16.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.

B16.3 Further to B16.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.

B16.4 Further to B16.1(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.

B16.4.1 Further to B16.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

## **B17. AWARD OF CONTRACT**

B17.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B17.2 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.

B17.2.1 Without limiting the generality of B17.2, 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.

B17.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B16.

B17.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

## PART C - GENERAL CONDITIONS

### C0. GENERAL CONDITIONS

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

## **PART D - SUPPLEMENTAL CONDITIONS**

### **GENERAL**

#### **D1. GENERAL CONDITIONS**

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

#### **D2. SCOPE OF WORK**

D2.1 The Work to be done under the Contract shall consist of the items of work identified in detail in Specification Section "01 11 00 Summary of Work" which is attached.

D2.2 Further to D2.1, a general summary of the major components of the Work include, but is not necessarily limited to, the following:

(a) Municipal Site Preparation Work:

- (i) New watermain around perimeter of site.
- (ii) Abandonment of watermain sections not to be re-used.
- (iii) Removal of old fire hydrants.
- (iv) Removal of existing culverts, catchbasins and abandonment of existing ditches.
- (v) New fire hydrants throughout the site.
- (vi) New water service to UV Building, Oxygen Reactors No. 1 & No. 2, and temporary service to site construction trailers.
- (vii) New temporary construction access roads.
- (viii) Construction of road base for sections of new permanent roadway around perimeter of site.
- (ix) Construction of temporary gravel surface construction laydown areas.
- (x) Construction of temporary gravel surface contractor parking areas.
- (xi) Excavation to facilitate construction of foundation for new site buildings, including shoring.
- (xii) Excavation of new site ditches to facilitate re-routing of existing drainage around site during duration of construction for SEWPC upgrades.
- (xiii) New chain link fence around perimeter of SEWPCC plant site.
- (xiv) New catchbasins, manholes, culverts, flap gates, gate valves and related site drainage and flood protection works.

(b) Foundation Piling Work:

- (i) Installation of piles for new site buildings, including new Bioreactors, Secondary Clarifiers, UV Building Expansion, Chemical Building, Generator Building, HRC Building, Vortex Grit Building, and adjacent tunnels to access the aforementioned buildings.

(c) Site Electrical Work:

- (i) New site lighting.
- (ii) Electrical and communication line re-routes, as required.

(d) Site Mechanical Work;

- (i) Temporary re-routing of on-site gas service line to UV building for duration of construction.

#### **D3. DEFINITIONS**

D3.1 When used in this Bid Opportunity:

(a) "**SEWPCC**" means South End Water Pollution Control Centre;

**D4. CONTRACT ADMINISTRATOR**

D4.1 The Contract Administrator is KGS Group, represented by:

Roy Houston, P.Eng.  
Manager of Civil/Municipal Services  
Telephone No. 204 896-1209  
e-mail: rhouston@kgsgroup.com

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

D4.3 Bids Submissions must be submitted to the address in B8.8.

**D5. CONTRACTOR'S SUPERVISOR**

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

**D6. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE**

D6.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.

D6.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D6.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;

- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
- (b) the Contract, all deliverables produced or developed; and
- (c) any statement of fact or opinion regarding any aspect of the Contract.

D6.4 A Contractor who violates any provision of D6 may be determined to be in breach of Contract.

**D7. NOTICES**

D7.1 Except as provided for in C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.

D7.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D7.3, D7.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the facsimile number identified in D4.1.

D7.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following facsimile number:

The City of Winnipeg  
Chief Financial Officer  
Facsimile No.: 204 949-1174

- D7.4 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 facsimile number:

The City of Winnipeg  
Legal Services Department  
Attn: Director of Legal Services  
  
Facsimile No.: 204 947-9155

#### **D8. FURNISHING OF DOCUMENTS**

- D8.1 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/her at cost.

#### **SUBMISSIONS**

#### **D9. AUTHORITY TO CARRY ON BUSINESS**

- D9.1 The Contractor shall be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba, or if the Contractor does not carry on business in Manitoba, in the jurisdiction where the Contractor does carry on business, throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

#### **D10. SAFE WORK PLAN**

- D10.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D10.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Safety/default.stm>
- D10.3 Notwithstanding B11.4 at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated COR Certificate or Annual Letter of good Standing. A Contractor, who fails to provide a satisfactory COR Certificate or Annual Letter of good Standing, will not be permitted to continue to perform any Work.

#### **D11. INSURANCE**

- D11.1 The City shall provide and maintain the following owner controlled project insurance coverage to remain in place at all times during the performance of the Work and throughout the warranty period:
- (a) Wrap-up liability insurance in an amount of no less than twenty-five million dollars (\$25,000,000) inclusive per occurrence and twenty-five millions dollars (\$25,000,000) general aggregate, covering bodily injury, personal injury, property damage and products and completed operations consistent with industry standard insurance policy wordings. Wrap up liability insurance to also include evidence of contractual liability and cross liability clauses.
    - (i) The Contractor shall be responsible for deductibles up to \$50,000 maximum of any one loss.
    - (ii) The City will carry such insurance to cover the City, Province of Manitoba, and Her Majesty the Queen, contractors, subcontractors and all consultants as insured's. Provision of this insurance by the City 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 remains with the Contractor.

- (iii) Wrap-up liability insurance shall be maintained from the date of the commencement of the Work until the date of Total Performance of the work and shall include an additional 24 months completed operation coverage which will take affect after Total Performance.

D11.2 The Contractor shall provide and maintain the following insurance coverage at all times during the performance of the work and throughout the warranty period:

- (a) Commercial general liability insurance, in the minimum amount of ten million dollars (\$10,000,000.00) inclusive per occurrence and ten million dollars (\$10,000,000) general aggregate. The said commercial general liability insurance shall include coverage for products and completed operations, blanket contractual liability, cross liability, non-owned automobile, and unlicensed motor vehicle liability. The Province of Manitoba, Her Majesty the Queen and their ministers, officers, employees and agents, and the City shall be added as additional insured's.
- (b) Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than five million dollars (\$5,000,000) inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence.
- (c) Property insurance for equipment and tools used on the project that may be owned, rented, leased or borrowed.
- (d) An all risks installation floater with an adequate limit to cover all materials intended to enter into and form part of the works. Such limit is to cover all physical values of the project and to be agreed upon between The City of Winnipeg and the Contractor.

D11.3 Deductibles shall be borne by the Contractor.

D11.4 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.

D11.5 The Contractor shall not cancel, or cause any such policy or policies to lapse without a minimum thirty (30) days prior written notice to the City.

D11.6 The Contractor shall provide the Contract Administrator with evidence of insurance 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 the Contract. The evidence shall be in a form of a certificate of insurance and must be satisfactory to the City Solicitor.

D11.7 All policies shall be in a form satisfactory to the City and shall be kept in full force during the Work and throughout the warranty period.

D11.8 The Contractor shall ensure the following:

- (a) All sub-contractors shall provide and maintain commercial general liability insurance in an amount not less than five million (\$5,000,000) inclusive per occurrence limit for bodily injury, property damage and products and completed operations consistent with industry standard insurance policy wordings with a minimum of five million (\$5,000,000) general aggregate. Policy to also include confirmation of contractual liability and cross liability clauses.
- (b) Professional Engineers shall provide and maintain commercial general liability insurance in an amount not less than five million (\$5,000,000) inclusive per occurrence limit for bodily injury, property damage and products and completed operations consistent with industry standard insurance policy wordings with a minimum of five million (\$5,000,000) general



aggregate. Policy to also include confirmation of contractual liability and cross liability clauses with The City of Winnipeg to be added as an additional insured.

- (i) Professional Errors and Omissions Liability insurance in an amount not less than \$5,000,000 per claim and \$5,000,000 in the aggregate. Such insurance to remain in place for the duration of the project and for 24 months after total performance.
- (c) Evidence of insurances as outlined in D11.8 (a) and (b) to be provided to The City upon request

D11.9 All parties covered under the Wrap Up Liability insurance shall continue to carry commercial general liability insurance for two years (or warranty period) after the total completion of the project. The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

## **D12. PERFORMANCE SECURITY**

D12.1 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.

D12.1.1 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.

D12.2 The Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

## **D13. SUBCONTRACTOR LIST**

D13.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

## **D14. EQUIPMENT LIST**

D14.1 The Contractor shall provide the Contract Administrator with a complete list of the equipment which the Contractor proposes to utilize (Form K: Equipment List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

## **D15. DETAILED WORK SCHEDULE**

D15.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

- D15.2 The detailed work schedule shall consist of the following:
- (a) a critical path method (C.P.M.) schedule for the Work;
  - (b) a Gantt chart for the Work based on the C.P.M. schedule;
  - (c) a daily manpower schedule for the Work;
- all acceptable to the Contract Administrator.
- D15.3 Further to D15.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:
- (a) Commencement date, Substantial Performance and Total Performance dates, milestone dates for critical stages of the Work identified in this Bid Opportunity, and any interim milestone dates determined by the Contractor.
  - (b) The detailed work schedule shall be detailed enough to provide sufficient information to track progress.
- D15.4 Further to D15.2(b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.
- D15.5 Further to D15.2(c), the daily manpower schedule shall list the daily number of individuals on the Site for each trade.

## **SCHEDULE OF WORK**

### **D16. COMMENCEMENT**

- D16.1 The Contractor shall not commence any Work until he/she is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.
- D16.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
    - (i) evidence of authority to carry on business specified in D9;
    - (ii) evidence of the workers compensation coverage specified in C6.15;
    - (iii) the Safe Work Plan specified in D10;
    - (iv) evidence of the insurance specified in D11;
    - (v) the performance security specified in D12;
    - (vi) the Subcontractor list specified in D13;
    - (vii) the equipment list specified in D14; and
    - (viii) the detailed work schedule specified in D15.
  - (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.
- D16.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.
- D16.3.1 Notwithstanding D16.3, the Contractor shall be restricted from performing the work as follows:
- (a) Excavations associated with the Bioreactor and Secondary Clarifiers until four weeks after contract award.
  - (b) Installation of piles associated with the Ultraviolet Disinfection building expansion until eight weeks after contract award.

- (c) Excavations associated with High Rate Clarification and Chemical/Generator building until ten weeks after contract award.
- (d) Ordering, supplying and installation of piles associated with High Rate Clarification and Chemical/Generator building until fourteen weeks after contract award.

D16.4 The City intends to award this Contract by September 23, 2014

D16.4.1 If the actual date of award is later than the intended date, the dates specified for Commencement, Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

## **D17. WORKING DAYS**

D17.1 Further to C1.1(jj), the Contract Administrator's determination of whether or not atmospheric and Site conditions are such that a Working Day is deemed to have elapsed may be based at one time on one type of work while at another time a Working Day may be based on another type of work. When more than one type of major work is involved, the quantity of equipment that must be able to work in order to meet the requirements of a Working Day may vary considerably from that specified in the General Conditions.

D17.2 In the event that incidental work is behind schedule which, in the opinion of the Contract Administrator, should have been or could have been carried out by the Contractor in conjunction with or immediately following work of a major type, the City hereby reserves the right to charge Working Days on the incidental work until such time as it is up to schedule.

D17.3 When the major type of work involves restoration of the site to the condition it was prior to rainfall, Working Days shall not be charged.

D17.4 The Contract Administrator will furnish the Contractor with a daily record for each major type of work showing various information concerning the equipment, the time it worked, could have worked and Working Days charged. This report is to be signed each day by an authorized representative of the Contractor.

## **D18. CRITICAL STAGES**

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

- (a) Trailer pad preparation at northeast portion of site, including electrical feed and water supply line, to be completed ready to receive trailers by October 1, 2014. (Estimated date of arrival of City Supplied Trailers between October 1, 2014 and October 31, 2014)
- (b) Temporary access road around west side of SEWPCC site from Sludge Hauling bay doors to Seniuk Road by October 15, 2014.

## **D19. PROJECT MILESTONES**

D19.1 General: Include the Milestones specified herein as a part of the construction schedule required under supplemental specification Section 01 32 00, Construction Progress Documentation

D19.2 Project Milestones: The master project schedule requires the Work to be substantially complete by the date specified in D20. The Contractor is encouraged to conduct portions of the work concurrently so that the Contract completion date is strictly adhered to. The following is a description of each milestone:

- (a) Completion of temporary roads, utility relocates, staging areas – December 22, 2014.
- (b) Completion of all excavation and piling for the Bioreactors, Secondary Clarifiers, UV, Vortex Building, High Rate Clarification Building, Chemical and Generator Building, – June 25, 2015.
- (c) Completion of site drainage ditches by November 1, 2014.

**D20. SUBSTANTIAL PERFORMANCE**

- D20.1 The Contractor shall achieve Substantial Performance by June 8, 2015.
- D20.2 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.
- D20.3 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.

**D21. TOTAL PERFORMANCE**

- D21.1 The Contractor shall achieve Total Performance by July 06, 2015.
- D21.2 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.
- D21.3 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.

**D22. LIQUIDATED DAMAGES**

- D22.1 If the Contractor fails to achieve Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:
- (a) Trailer pad preparation at northeast portion of site, including electrical feed and water supply line, to receive trailers by the date specified in clause "D18 Critical Stages" – one thousand five hundred dollars (\$1,500);
  - (b) Temporary access road around west side of SEWPCC site from Sludge Hauling bay doors to Seniuk Road by the date specified in clause "D18 Critical Stages" – one thousand five hundred dollars (\$1,500);
  - (c) Substantial Performance – five thousand dollars (\$5,000);
  - (d) Total Performance – five thousand dollars (\$5,000).
- D22.2 The amounts specified for liquidated damages in D22.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve critical stages, Substantial Performance or Total Performance by the days fixed herein for same.
- D22.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

**D23. SCHEDULED MAINTENANCE**

- D23.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:
- (a) Maintenance of the Site Roadways as specified in E23;

- D23.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

## **CONTROL OF WORK**

### **D24. JOB MEETINGS**

- D24.1 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.
- D24.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

### **D25. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)**

- D25.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

### **D26. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS**

- D26.1 Further to B11.4, the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require updated proof of compliance, as set out in B11.4.

## **MEASUREMENT AND PAYMENT**

### **D27. INVOICES**

- D27.1 Further to C12, the Contractor shall submit an invoice for each portion of Work performed :
- The City of Winnipeg  
Corporate Finance - Accounts Payable  
4th Floor, Administration Building, 510 Main Street  
Winnipeg MB R3B 1B9
- Facsimile No.: 204 949-0864  
Email: [CityWpgAP@winnipeg.ca](mailto:CityWpgAP@winnipeg.ca)
- D27.2 Invoices must clearly indicate, as a minimum:
- (a) the City's purchase order number;
  - (b) date of delivery;
  - (c) delivery address;
  - (d) type and quantity of work performed;
  - (e) the amount payable with GST and MRST shown as separate amounts; and
  - (f) the Contractor's GST registration number.

D27.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D27.4 Bids Submissions must be submitted to the address in B8.8

**D28. PAYMENT**

D28.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

**WARRANTY**

**D29. WARRANTY**

D29.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire two (2) years thereafter unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

**FORM H1: PERFORMANCE BOND**  
(See D12)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

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

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

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

BID OPPORTUNITY NO. 333-2014

CONTRACT 1 – SITE PREPARATION WORKS – SOUTH END WATER POLLUTION CONTROL CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT

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

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

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

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

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

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

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

**SIGNED AND SEALED**  
in the presence of:

\_\_\_\_\_  
(Witness as to Principal if no seal)

\_\_\_\_\_  
(Name of Principal)

Per: \_\_\_\_\_ (Seal)

Per: \_\_\_\_\_

\_\_\_\_\_  
(Name of Surety)

By: \_\_\_\_\_ (Seal)  
(Attorney-in-Fact)



**FORM H2: IRREVOCABLE STANDBY LETTER OF CREDIT  
(PERFORMANCE SECURITY)**  
(See D12)

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

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 333-2014

CONTRACT 1 – SITE PREPARATION WORKS – SOUTH END WATER POLLUTION CONTROL  
CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT

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 (2007 Revision), International Chamber of Commerce Publication Number 600.

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

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

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



**FORM K: EQUIPMENT**  
(See D14)

**CONTRACT 1 – SITE PREPARATION WORKS – SOUTH END WATER POLLUTION CONTROL  
CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT**

<p>1. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>2. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>3. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>

**FORM K: EQUIPMENT**  
(See D14)

**CONTRACT 1 – SITE PREPARATION WORKS – SOUTH END WATER POLLUTION CONTROL  
CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT**

<p><b>4. Category/type:</b></p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p><b>5. Category/type:</b></p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p><b>6. Category/type:</b></p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>

## PART E - SPECIFICATIONS

### GENERAL

#### E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Specification No.</u>	<u>Specification Title</u>
	Table of Contents
01 11 00	Summary of Work
01 31 13	Project Coordination
01 31 19	Project Meetings
01 32 00	Construction Progress Documentation
01 33 00	Submittal Procedures
01 35 13	Special Project Procedures
01 35 29.01	Health and Safety
01 41 00	Regulatory Requirements
01 43 33	Contractor Field Services
01 45 16.13	Contractor Quality Control
01 50 00	Temporary Facilities and Controls
01 52 10	Construction Sequencing
01 61 00	Common Product Requirements
01 64 00	City-Supplied Products
01 77 00	Closeout Procedures
02 41 13	Selective Site Demolition

#### **Civil**

All Specs City of Winnipeg Standard Construction Specifications

#### **Electrical, I&C**

26 05 01	Common Work Results - Electrical
26 05 21	Wires and Cables 0-1000V
26 05 22	Connectors and Terminations
26 05 28	Grounding and Bonding for Electrical Systems
26 05 29	Hanger and Supports
26 05 31	Splitters, Junction Boxes, Pull Boxes, and Cabinets
26 05 32	Outlet Boxes, Conduit Boxes and Fittings
26 05 34	Conduits, Conduit Fasteners, and Conduit Fittings
26 05 36	Cables Trays for Electrical Systems
26 05 44	Installation of Cables in Trenches and Ducts
26 08 05	Acceptance Testing

26 12 17	Dry Type Transformer Up To 600V Primary
26 24 17	Panelboard
26 27 26	Wiring Devices
26 28 21	Moulded Base Circuit Breakers

### **Structural**

31 09 17	Dynamic Pile Testing
31 23 19.01	Dewatering
31 62 13.23	Pre-stressed Concrete Piles

### Drawing No.

### Drawing Name/Title

Title Page  
Drawing Index

### **General**

1-0102-DGAD-A003-001	Abbreviations (1)
1-0102-DGAD-A003-002	Abbreviations (2), Symbols and General Notes
3-0102-DGAD-A0-02	2014 SEWPCC Site Trailers – Floor Plans
3-0102-DGAD-A0-03	2014 SEWPCC Site Trailers – Sections

### **Demolition**

4-0102-DGAD-A001	Demolition Notes and Legend
4-0102-CGAD-A001-001	Site Removals – Location 1
4-0102-CGAD-A001-002	Site Removals – Location 2
4-0102-CGAD-A001-003	Site Removals – Location 3
4-0102-CGAD-A001-004	Site Removals – Location 4
4-0102-CGAD-A001-005	Site Removals – Location 5
4-0102-CGAD-A001-006	Site Removals – Location 6
4-0102-CGAD-A001-007	Site Removals – Location 7
4-0102-CGAD-A001-008	Site Removals – Location 8
4-0102-CGAD-A001-009	Site Removals – Location 9
4-0102-CGAD-A001-010	Site Removals – Location 10
4-0102-CGAD-A001-011	Site Removals – Location 11
4-0102-CGAD-A001-012	Site Removals – Location 12
4-0102-DGAD-S004	Secondary Clarifier - Plan
4-0102-SGAD-U001	UV Disinfection Facility Plans
4-0102-DGAD-D010	Oxygen Reactor – Plan and Section
SEP-2436	Electrical Site Plan (Demolition)
4-0102-ELTG-A001	Site Lighting - Demolition
4-0102-ELYT-A001	Site Power and Systems - Demolition

### **Civil**

1-0102-CGAD-A001-001	Existing Site Plan
1-0102-CGAD-A002-001	Site Plan North
1-0102-CGAD-A002-002	Site Plan South
1-0102-CGAD-A003-001	Overall Site Excavation and Stockpile Location Plan
1-0102-CGAD-A003-002	Site Construction Roadway, Laydown Area & Stockpile Plan North
1-0102-CGAD-A003-003	Site Construction Roadway, Laydown Area & Stockpile Plan South
1-0102-CGAD-A003-004	Site Excavation Plan, Clarifiers Area
1-0102-CGAD-A003-005	Site Excavation Plan, Chemical/Generator Bld Area
1-0102-CGAD-A003-006	Site Excavation Plan, Bioreactors Area
1-0102-CGAD-A004-001	Site Excavation Sections
1-0102-CGAD-A005-001	Stockpile Sections
1-0102-CRSW-A001-001	Construction Access Road North - Sta 1+00 to Sta 2+25

1-0102-CRSW-A001-002	Construction Access Road North - Sta 2+25 to Sta 3+25
1-0102-CRSW-A002-001	Perimeter Road North – Sta 1+00 to Sta 2+68.74
1-0102-CRSW-A002-002	Perimeter Road North – Sta 2+68.74 to 4+25
1-0102-CRSW-A002-003	Perimeter Road North – Sta 4+25 to 5+75
1-0102-CRSW-A002-004	Perimeter Road North – Sta 5+75 to 6+91.15
1-0102-CRSW-A003-001	Perimeter Road South – Sta 1+71.72 to Sta 3+50
1-0102-CRSW-A003-002	Perimeter Road South – Sta 3+50 to Sta 4+85.89
1-0102-CRSW-A003-003	Perimeter Road South – Sta 4+85.89 to Sta 6+25
1-0102-CRSW-A003-004	Perimeter Road South – Sta 6+25 to Sta 6+93.75
1-0102-CRSW-A004-001	Construction Access Road South - Sta 1+00 to Sta 2+00.88
1-0102-CRSW-A004-002	Construction Access Road South - Sta 2+00.88 to Sta 3+50
1-0102-CRSW-A004-003	Construction Access Road South - Sta 3+50 to Sta 4+27.02
1-0102-CRSW-A004-004	Construction Access Road South - Sta 1+00 to Sta 2+00.88
1-0102-DTL-A001-001	Miscellaneous Details 1
1-0102-DTL-A001-002	Miscellaneous Details 2
1-0102-DTL-A001-003	Miscellaneous Details 3
1-0102-CUTY-Y005-001	Existing Building Services Utilities
1-0102-CUTY-Y005-002	Existing Building Services Utilities
1-0102-CUTY-Y006-001	Watermain North- Sta 1+00 to Sta 2+75
1-0102-CUTY-Y006-002	Watermain North- Sta 2+75 to Sta 4+50
1-0102-CUTY-Y006-003	Watermain North- Sta 4+50 to Sta 6+00
1-0102-CUTY-Y006-004	Watermain North- Sta 6+00 to Sta 7+40.52
1-0102-CUTY-Y007-001	Watermain South - Sta 1+63.75 to Sta 3+50
1-0102-CUTY-Y007-002	Watermain South - Sta 3+50 to Sta 4+73.45
1-0102-CUTY-Y007-003	Watermain South - Sta 4+73.45 to Sta 6+50
1-0102-CUTY-Y007-004	Watermain South - Sta 6+50 to Sta 8+29.02
1-0102-CDRN-Y001-001	Site Drainage Outlet Plan and Details
1-0102-CDRN-Y001-002	Site Drainage Outlet Plan and Details

### **Structural**

1-0102-SGAD-A001	General Notes and Legend
1-0102-SGAD-A002	Overall Site Plan
1-0102-SFDW-G002	Vortex Grit Building Piling Plan
1-0102-SFDW-R001	Bioreactors/Blower Building Overall Piling Plan
1-0102-SFDW-R002	Bioreactors/Blower Building Part Piling Plan (1)
1-0102-SFDW-R003	Bioreactors/Blower Building Part Piling Plan (2)
1-0102-SFDW-R004	Bioreactors/Blower Building Part Piling Plan (3)
1-0102-SFDW-S001	Secondary Clarifier NO. 4 - Piling Plan
1-0102-SFDW-S002	Secondary Clarifier NO. 5 - Piling Plan
1-0102-SFDW-S003	Secondary Clarifiers – Pump and Mechanical Rooms Piling Plan
1-0102-SFDW-U001	UV Disinfection Facility Piling Plan
1-0102-SFDW-C001	Chemical/Generator Building Piling Plan

### **Mechanical**

1-0102-MUTY-Y001	Natural Gas Line Relocation
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### **Electrical, I&C**

1-0102A-E0018-001	Single Line Diagram Overview
1-0102-ELTG-A001-001	Site Lighting New Work
1-0102-ELYT-A001-001	Layout and Details – Temporary Site Parking
1-0102-ESCH-A001-001	Panelboard Schedules & Details – Temporary Site Parking
1-0102-ESLD-A001-001	Single Line Diagram Temporary Electrical Services
1-0102-ECBD-G004-001	Grit Building MCC-2G
1-0102-ECRT-G501-001	Cable Routing Grit Building – Wiring Modifications
1-0102-ECBD-S001-001	Junction Box Layout Secondary Clarifier Temporary UV 600V Feeders
1-0102-ECBD-S002-001	Junction Box Layout Secondary Clarifier Temporary UV I &C Feeders



1-0102-ECRT-S001-001	Cable Routing Plan Secondary Clarifier Temporary UV Feeders
1-0102-ECTR-S001-001	Cable Tray Layout Secondary Clarifier Temporary UV 600V Feeders
1-0102-EGAD-U001-001	General Arrangement UV Facility Temporary UV Cables Relocation Plan

## **E2. SOILS INVESTIGATION REPORT**

- E2.1 Further to C3.1, a geotechnical report is appended to this Bid Opportunity and is titled "SEWPCC Upgrading/Expansion/Civil/Geotech Geotechnical Investigation Report – Final – Rev 1" dated March 2014.

## **E3. MOBILIZATION AND DEMOBILIZATION**

- E3.1 Notwithstanding the City of Winnipeg Standard Construction Specifications, a separate pay item is included for mobilization and demobilization.

- E3.2 Mobilization shall be as defined in specification "Section 01 50 00 – Temporary Facilities and Controls".

### Measurement and Payment

- E3.3 Mobilization and Demobilization will be measured and paid for at the Contract Lump Sum Price for "Mobilization and Demobilization", which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the Work included in this Specification.

- E3.4 Mobilization and Demobilization will be paid out at 50% of the unit price will be paid on the first progress payment following commencement of the Work.

- E3.5 The remaining 50% of the Mobilization and Demobilization unit price will be paid subsequent to the completion of the Work.

## **E4. CONSTRUCTION LAYOUT**

- E4.1 Notwithstanding CW 1130-R2, the Contractor shall be responsible for performing their own layout and staking site construction works based upon control point elevations provided by the Contract Administrator.

- E4.2 Construction layout shall also comply with specification section "01 43 33 Contractor Field Services".

- E4.3 Costs for Construction layout shall be incidental to the Work. No additional payment will be made for construction layout performed by the Contractor.

## **E5. TEMPORARY SHUTDOWNS**

- E5.1 Any required temporary shutdowns of services to the SEWPCC or any other activity affecting normal plant operation to accommodate completion of the Work in Contract 1 shall be limited in duration and subject to the following conditions:

- (a) Any Work requiring temporary shutdown of plant operations to complete shall be coordinated through the Contract Administrator and the operators of the SEWPCC a minimum of seven (7) days in advance of the planned Work.
- (b) Temporary shutdowns shall be no greater than 6 hours in duration in any given twenty-four (24) hour period.
- (c) Temporary shutdowns for service tie-ins shall be scheduled during non-peak plant operation hours, scheduled to begin at 0300 hours with normal plant operations scheduled to resume no later than 0900 hours.

E5.2 Anticipated items of Work requiring some form of temporary shutdowns of portions of the plant include, but is not necessarily limited to, the following:

- (a) Connection of new watermain tie-ins to existing watermain at Ed Spencer Drive.
- (b) Connection of new water service to the UV Building.
- (c) Connection of re-routed electrical and gas service between the Secondary Clarifiers and the UV Building.

## **E6. WATERMAINS**

E6.1 Further to CW 2110-R11, the Contractor shall install the new mainline watermain around the perimeter of the site prior to any other site works that will affect operation of the existing plant watermain.

E6.2 The Contractor shall ensure that the new watermain has been chlorinated and pressure tested for leaks in accordance with CW 2125-R4 prior to any required abandonment of existing watermain around the site.

## **E7. WATER MANAGEMENT PLAN**

E7.1 Further to CW 2030, work areas can receive flow of an undetermined amount from groundwater infiltration, snow melt, rainfall and other unforeseen sources.

E7.2 Dewatering of work areas shall be in accordance with this specification and supplemental specification "31 23 19.01 – Dewatering".

E7.3 The Contractor shall provide water management measures to prevent water ponding in work areas and excavations. Water management measures shall include but not be limited to diversions, flumes and by-pass pumping. Pumping of runoff water from excavations shall be discharged to a grass field area outside the excavation before running off into ditches. The Contractor shall not discharge any water off-site without prior written approval from the Contract Administrator.

E7.4 Discharge hoses for pumping from excavations shall not be laid across vehicle access roads without adequate protection over them and the hoses must be protected from freezing during winter months. Pumping equipment, if used, shall be set-up in a location and in such a way as approved by the Contract Administrator.

E7.5 The Contractor shall not discharge water containing residual chlorine into water courses without first providing testing and dechlorination.

E7.6 The Contractor shall provide a water management plan to the Contract Administrator for review before beginning any excavation work.

E7.7 Costs for water management shall be considered incidental to the work. No separate payment will be made for water control.

## **E8. EXCAVATION SHORING**

E8.1 Shoring shall be designed and installed in accordance with CW 2030.

E8.2 Further to CW 2030, costs for shoring shall be measured on a square metre basis. Measurement shall be of the exposed surface area of shoring required measured from inside the excavation to the top elevation of shoring.

E8.3 Shoring supplied and installed under this contract is not to be removed and shall be left in place at completion of the Work.

E8.4 At a minimum, shoring shall be designed to handle HS32 (CL800) highway live loading.

E8.5 Shoring adjacent to the existing liquid oxygen tank northwest of the bioreactor excavation shall be designed to support the dead load of the oxygen tank plus HS32 (CL800) highway live loading.

## **E9. BUILDING FOUNDATION EXCAVATION**

E9.1 Excavation for building foundations will be considered Common Excavation and shall be performed in accordance with CW 3170-R3.

E9.2 Disposal of excavated material for building foundations shall be to the designated stockpile areas west of the site, at the locations indicated on the design drawings.

E9.3 Disposal of excavated material into and maintenance of the stockpiles themselves shall be incidental to the cost of common excavation. No additional payment will be made for maintaining the designated stockpile areas west of the site.

E9.4 Further to CW 3170, excavation for building foundations indicated on the drawings shall have the excavation side slopes no steeper than 4:1 slope, as indicated on the drawings. Access ramps to the bottoms of excavations shall be 7:1 slope.

E9.5 The Contractor shall be responsible for maintaining their excavation in a safe manner and ensure that the side slopes are protected from erosion. The contractor shall cover the side slopes in 6mm polyethylene plastic or waterproof tarpaulins to protect from erosion. Any 6mm polyethylene plastic or tarpaulins supplied and installed by the Contractor shall be maintained for the duration of construction and left in place at the end of the contract.

E9.6 The Contractor shall submit a plan for protection of excavation slopes during construction to the Contract Administrator for approval a minimum of seven (7) days prior to construction of building foundation excavations.

E9.7 The Contractor is responsible for keeping their excavations free of water infiltration from runoff and shall at their own expense implement a water management plan in accordance with section E7 of this specification document.

E9.8 Costs for maintaining excavation in a safe manner and free of water shall be incidental to the costs of excavation for building foundations. No additional payment will be made for use of tarpaulins or polyethylene cover over side slopes of excavations.

E9.9 Notwithstanding CW 3170-R3, measurement of excavations for building foundations shall be by bank measure and paid for at the Contract Unit Price per m<sup>3</sup> excavated as measured. The Contractor shall measure the volume of excavation performed and allow the Contract Administrator access to the excavations to verify the amounts measured by the Contractor.

## **E10. ENVIRONMENTAL PROTECTION PLAN**

E10.1 The Contractor shall plan and implement the Work of this Contract strictly in accordance with the requirements of the Environmental Protection Plan as herein specified, Fisheries Authorization & CEAA Screening report.

E10.2 The Contractor is advised that at least the following Acts, Regulations, and By-laws apply to the Work and are available for viewing at the office of the Contract Administrator.

(a) Federal

- (i) Canadian Environmental Protection Act (CEPA)
- (ii) Transportation of Dangerous Goods Act and Regulations c.34
- (iii) The Fisheries Act
- (iv) Navigable Waters Protection Act

(b) Provincial

- (i) The Dangerous Goods Handling and Transportation Act D12

- (ii) The Endangered Species Act E111
- (iii) The Environment Act c.E125
- (iv) The Fire Prevention Act F80
- (v) The Manitoba Heritage Resources Act H39.1
- (vi) The Manitoba Noxious Weeds Act N110
- (vii) The Manitoba Nuisance Act N120
- (viii) The Public Health Act c.P210
- (ix) The Workplace Safety and Health Act W210
- (x) And current applicable associated regulations.  
(Note: Provincial regulations updated as of September 1999)

- (c) Municipal
  - (i) The City of Winnipeg By-law No. 1/2008
  - (ii) And any other applicable Acts, Regulations, and By-Laws.

E10.3 The Environmental Protection Plan shall address the following:

- (a) Name[s] of person[s] responsible for ensuring adherence to Environmental Protection Plan.
- (b) Name[s] and qualifications of person[s] responsible for manifesting hazardous waste to be removed from Site.
- (c) Name[s] and qualifications of person[s] responsible for training Site personnel.
- (d) Erosion and sediment control plan which identifies type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
- (e) Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use. Plan to include measures for marking limits of use areas including methods for protection of features including vegetation to be preserved within authorized Work areas.
- (f) Environmental Emergency Response: including procedures, instructions, and reporting in the event of unforeseen spill of regulated substance.
- (g) Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- (h) Hazardous materials and waste management plan outlining storage, transportation and disposal.
- (i) Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, do not become air borne and travel off project Site.
- (j) Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- (k) Waste water management plan that identifies methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete wash or curing water, clean-up water, dewatering of ground water, hydrostatic test water, and water used in flushing of lines.
- (l) Monitor and report to ensure implementation of environmental protection measures.

E10.4 The Contractor is advised that the following environmental protection measures apply to the Work.

- (a) Materials Handling and Storage
  - (i) Construction materials shall not be deposited or stored on riverbanks or river shorelines unless written acceptance from the Contract Administrator is received in advance.
  - (ii) Construction materials and debris shall be prevented from entering the Red River and Assiniboine River. In the event that materials and/or debris inadvertently enter the watercourse, the Contract shall be required to remove the material and restore the watercourse to its original condition.
- (b) Fuel Handling and Storage
  - (i) The Contractor shall obtain all necessary permits from Manitoba Conservation for the handling and storage of fuel products and shall provide copies to the Contract Administrator.
  - (ii) 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.
  - (iii) 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.
  - (iv) In accordance with Section 2.5 (Construction: General Guidelines) of the Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat, (DFO and DNR, 1996), the Contractor shall ensure that any temporary fuel storage areas established for construction of the project are contained by an impermeable dike and are located a minimum distance of 100 metres away from the high water line of the nearest river. Dikes shall be designed, constructed, and maintained to retain not less than 100% of the capacity of the total number of containers or 110% of the largest container, whichever is greatest. The dikes shall be constructed of clay or similar impervious material. If this type of material is not available, the dike shall be constructed of locally available material and lined with high density polyethylene (HDPE). Furthermore, the fuel storage area(s) shall be secured by a barrier such as a high fence and gate to prevent vandalism.
  - (v) The Contractor shall ensure that all fuel storage containers are inspected daily for leaks and spillage.
  - (vi) Products transferred from the fuel storage area(s) to specific Work Sites shall not exceed the daily usage requirement.
  - (vii) 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.
  - (viii) Refuelling of mobile equipment and vehicles shall take place at least 100 metres from a watercourse.
  - (ix) 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.
  - (x) 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.
- (c) Waste Handling and Disposal
  - (i) The construction area shall be kept clean and orderly at all times during and at completion of construction.
  - (ii) 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.
  - (iii) All resulting debris shall be deposited at a Waste Disposal Ground operating under the authority of Manitoba Regulation #150/91. Exceptions are liquid industrial and hazardous wastes which may require special disposal methods (see SC:21.4 D).
  - (iv) Indiscriminate dumping, littering, or abandonment shall not take place.

- (v) No on-site burning of waste is permitted.
  - (vi) Waste storage areas shall not be located so as to block natural drainage.
  - (vii) Run-off from a waste storage area shall not be allowed to cause siltation of a watercourse.
  - (viii) Waste storage areas shall be left in a neat and finished appearance and/or restored to their original condition to the satisfaction of the Contract Administrator.
  - (ix) Equipment shall not be cleaned near watercourses; contaminated water from onshore cleaning operations shall not be permitted to enter watercourses.
- (d) Dangerous Goods/Hazardous Waste Handling and Disposal
- (i) Dangerous goods/hazardous wastes are identified by, and shall be handled according to, The Dangerous Goods Handling and Transportation Act and Regulations.
  - (ii) The Contractor shall be familiar with The Dangerous Goods Handling and Transportation Act and Regulations.
  - (iii) The Contractor shall have on-site staff that is trained and certified in the handling of the dangerous/hazardous goods, when said dangerous/hazardous goods are being utilized on-site for the performance of the Work.
  - (iv) Different waste streams shall not be mixed.
  - (v) Disposal of dangerous goods/hazardous wastes shall be at approved hazardous waste facilities.
  - (vi) Liquid hydrocarbons shall not be stored or disposed of in earthen pits on-site.
  - (vii) Used oils shall be stored in appropriate drums, or tankage until shipment to waste oil recycling centres, incinerators, or secure disposal facilities approved for such wastes.
  - (viii) Used oil filters shall be drained, placed in suitable storage containers, and buried or incinerated at approved hazardous waste treatment and disposal facilities.
  - (ix) Dangerous goods/hazardous waste storage areas shall be located at least 100 metres away from the high water line and be dyked.
  - (x) Dangerous goods/hazardous waste storage areas shall not be located so as to block natural drainage.
  - (xi) Run-off from a dangerous goods/hazardous waste storage area shall not be allowed to cause siltation of a watercourse.
  - (xii) Dangerous goods/hazardous waste storage areas shall be left in a neat and finished appearance and/or restored to their original condition to the satisfaction of the Contract Administrator.
- (e) Emergency Response
- (i) The Contractor shall ensure that due care and caution is taken to prevent spills.
  - (ii) The Contractor shall report all major spills of petroleum products or other hazardous substances with significant impact on the environment and threat to human health and safety (as defined in Table 1 below) to Manitoba Conservation, immediately after occurrence of the environmental accident, by calling the 24-hour emergency phone number (204) 945-4888. The Contract Administrator shall also be notified.
  - (iii) The Contractor shall designate a qualified supervisor as the on-site emergency response co-ordinator for the project. The emergency response co-ordinator shall have the authority to redirect manpower in order to respond in the event of a spill.
  - (iv) 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 co-ordinator:
    - (i) Notify emergency-response co-ordinator 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, Police, Fire Department, Ambulance, company backup)
- (ii) Attend to public safety:
  - ◆ stop traffic, roadblock/cordon off the immediate danger area
  - ◆ eliminate ignition sources
  - ◆ initiate evacuation procedures if necessary
- (iii) 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, sewers, and manholes
- (iv) 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
  - ◆ dike spill material with dry, inert sorbet material or dry clay soil or sand
  - ◆ prevent spill material from entering waterways and utilities by diking
  - ◆ prevent spill material from entering manholes and other openings by covering with rubber spill mats or diking Resume any effective action to contain, clean up, or stop the flow of the spilled product.
- (v) The emergency response co-ordinator shall ensure that all environmental accidents involving contaminants shall be documented and reported to Manitoba Conservation according to The Dangerous Goods Handling and Transportation Act Environmental Accident Report Regulation 439/87.
- (vi) When dangerous goods are used on-site, materials for containment and cleanup of spill material (e.g. absorbent materials, plastic oil booms, and oversized recovery drums) shall be available on-site.
- (vii) Minor spills of such substances that may be contained on land with no significant impact on the environment may be responded to with in-house resources without formal notification to Manitoba Environment.
- (viii) City emergency response, 9-1-1, shall be used if other means are not available.
- (ix) The on-site emergency response coordinator shall contact The Canadian Coast Guard, Selkirk (204) 785-6030, if the spill material reaches and is on or in the Red or Assiniboine Rivers.

**Table 1 Spills that must be reported to the Manitoba Conservation as Environmental Accidents**

Classification	Hazard	Reportable Quantity/Level
1	Explosives	All
2.1	Compressed Gas (flammable)	100 L*
2.2	Compressed Gas	100 L*
2.3	Compressed Gas (toxic)	All
2.4	Compressed Gas (corrosive)	All
3	Flammable Liquids	100 L
4	Flammable Solids	1 kg
5.1	PG** I & II	Oxidizer
	PG III	Oxidizer
5.2	Organic Peroxide	1 kg or 1 L
6.1	PG I	Acute Toxic
		1 kg or 1 L

6.2	PG II & III	Acute Toxic	5 kg or 5 L
7		Infectious	All
		Radioactive	Any discharge or radiation level exceeding 10 mSv/h at the package surface and 200 uSv/h at 1 m from the package surface
8		Corrosive	5 kg or 5 L
9.1		Miscellaneous	50 kg (except PCB mixtures)
9.1		PCB Mixtures	500 g
9.2		Aquatic Toxic	1 kg or 1 L
9.3		Wastes (Chronic Toxic)	5 kg or 5 L

\* Container capacity (refers to container water capacity)  
 \*\* PG = Packing Group(s)

**E11. TEMPORARY CHAIN LINK FENCING**

- E11.1 Portions of the chain link fencing to be supplied and installed around the perimeter of the site are classified as temporary, to be installed in the locations as indicated on the design drawings.
- E11.2 Temporary Chain Link Fencing shall consist of 1.828m (6 foot) tall chain link fence with posts driven into native soil as indicated in the detail on drawing 1-0102-DTL-A001-002, and in accordance with CW 3550-R3.  
  
Measurement and Payment
- E11.3 Temporary Chain Link Fencing shall be measured on a linear measure basis and paid for at the Contract Unit Price per metre for "Temporary Chain Link Fence", which price shall be payment in full for all materials, labour and equipment required to supply and install the fence.

**E12. PERMANENT CHAIN LINK FENCING**

- E12.1 Portions of the chain link fencing to be supplied and installed around the perimeter of the site are classified as permanent to define the finished perimeter boundaries of the facility. The sections to be considered permanent fencing shall be per the locations indicated on the design drawings.
- E12.2 Permanent Chain Link Fencing shall be constructed in accordance with CW 3550-R3 and the following material specifications:
  - (a) Fencing fabric shall be galvanized chain link fencing at a minimum height without top guard of 3.65 meters.
  - (b) Fencing mesh shall consist of 9 gauge wire with 50mm diamond mesh.
  - (c) Distance between posts shall be no more than 3 meters.
  - (d) Post hole depths shall be as indicated in the detail on design drawing 1-0102-DTL-A001-002. Note: Corner post hole depths shall be deeper than non-corner post hole depths, as indicated in the aforementioned detail in the design drawing. The post holes shall be backfilled with concrete with the concrete extended 50mm above grade with a crowned surface to shed water.
  - (e) When fences cross a stream, culvert, depression, or other openings that fencing does not enclose, where the opening size is 62,000mm<sup>2</sup> or larger, these openings should be protected by additional grilles, fencing, or other barriers against intrusion.



- (f) The bottom fence fabric shall be secured to a bottom rail and securely anchored at midpoint.
- (g) Permanent fencing shall have a top guard consisting of 600mm tall outrigger at 45 degree angle, facing outward with 3 strands of 13,5 gauge barbed wire, as indicated on the design drawings.
- (h) Fence Signage shall be placed every 30 meters on the exterior of the fence.

#### Measurement and Payment

- E12.3 Permanent Chain Link Fencing shall be measured on a linear measure basis and paid for at the Contract Unit Price per metre for "Permanent Chain Link Fence", which price shall be payment in full for all materials, labour and equipment required to supply and install the fence.

### **E13. CHAIN LINK FENCING GATES**

- E13.1 All gates for chain link fences in this contract shall be constructed in accordance with CW 3550-R3 unless noted otherwise in this specification.
- E13.2 Gates for road crossings and openings to access stockpile areas shall be swinging gates opening at the centreline of the road crossing, with the following specifications:
- (a) Gate shall be 2.4m tall plus a 600mm tall top guard consisting of an outrigger at 45 degree angle, facing outward with 3 strands of 13,5 gauge barbed wire, as indicated on the design drawings.
- E13.3 The person gates located along the temporary chain link fencing between the parking lot and trailer pad at the northeast corner of the site shall conform to CW 3550-R3 and the following:
- (a) Person gate shall be the same height of the temporary chain link fence to which it connects (1.828m or 6 ft).
  - (b) Person gate shall be 0.914m (3ft) wide.

#### Measurement and Payment

- E13.4 Chain Link Fencing gates which cross site roadways and for vehicle openings to access stockpile areas shall be measured on a linear measure and paid for at the Contract Unit Price per metre for "Road Crossing Chain Link Fence Gates", which price shall be payment in full for all materials, labour and equipment required to supply and install the gate.
- E13.5 Chain Link Fencing gates for person crossings through the fence separating the parking lot and site trailer pad at the northeast corner of the site shall be measured on a unit basis and paid for at the Contract Unit Price for each gate supplied and installed for "Person Chain Link Fence Gate" and shall include all materials, labour and equipment required to supply and install the gate.

### **E14. WATERMAIN ABANDONMENT**

- E14.1 Existing watermain identified to be abandoned shall be considered incidental to the cost of installation of new watermain on-site, consistent with CW 2110-R11. No additional payment will be made for abandoning existing watermains.
- E14.2 Removal and disposal of any existing watermain identified to be abandoned on the design drawings, or any existing abandoned watermains encountered during excavation works shall be considered incidental to the excavation work in which the abandoned watermain is in encountered. No additional payment shall be made for disposal or removal of such abandoned watermain.

## **E15. ABANDONMENT OF EXISTING TESTHOLES**

E15.1 Piezometers have been installed prior to construction in some existing testholes on site. Two of the testholes containing piezometers fall within excavations for the Secondary Clarifiers (TH13-02) and Bioreactors (TH13-03) respectively, as identified in the geotechnical report. Prior to commencing excavation, the aforementioned piezometers within the footprint of these excavations need to be removed and disposed, and the testhole grouted with bentonite.

### Measurement and Payment

E15.2 Abandonment of existing testholes containing piezometers shall be paid for at the Contract Unit Price for "Abandonment of Existing Testholes" for each testhole containing a piezometer abandoned in accordance with this specification. It shall include all materials, labour and equipment required to perform the work.

## **E16. PROTECTION OF EXISTING TESTHOLES**

E16.1 Three testholes on-site contain piezometers installed prior to construction and need to be maintained and protected during construction. The Contractor shall protect the piezometers from damage for the duration of construction and keep them accessible at all time for use of monitoring site groundwater by the Contract Administrator or their representatives.

E16.2 Protection shall consist of installation of four bollards around each piezometer to delineate their location and provide protection.

E16.3 The three piezometers to be protected and maintained are as follows:

- (a) TH13-13 - Located north of the north perimeter road, north of the Generator-Chemical Buildings.
- (b) TH13-14 – Located in the southwest temporary construction parking lot.
- (c) TH13-15 – Located south of the south perimeter road, south of the new bioreactors.

E16.4 The Contractor shall be responsible for the cost of replacing and/or repairing any piezometers damaged during construction.

### Measurement and Payment

E16.5 Installation of bollards around the piezometers to be protected shall be paid for at the Contract Unit Price for "Installation of Bollards" No additional payment shall be made for repair or replacement of piezometers damaged during construction.

## **E17. GENERAL PROJECT SIGNAGE**

E17.1 Infrastructure Signage

E17.1.1 The Contractor shall supply and install bilingual project infrastructure signage at a highly visible location near the entrance to the site, as directed by the Contract Administrator. Signage will identify the name of the project and the governmental agencies providing the funding for the project. The content (wording, logos, labels) will be provided to the Contractor after award of Contract.

E17.1.2 Sign shall be constructed to the following specifications:

- (a) Sign shall measure 4800mm wide by 2400mm high.
- (b) Sign shall be printed on 2-3mm thick printable vinyl.
- (c) Sign shall have a 2mm thick UV Coating (suitable for minimum 5 year lifespan)

- (d) Vinyl sign shall be mounted to a sheet of ½ inch thick plywood, 4 feet by 8 feet in size. Plywood shall be painted with a primer coat to protect plywood and assist vinyl sign to stick to plywood with a suitable adhesive.
- (e) The Contractor shall mount the sign 1.2metres above grade to a suitable rigid frame and support. The frame shall be firmly anchored into the ground.

E17.1.3 The Contractor shall provide a shop drawing for approval by the Contract Administrator prior to supplying and installing the infrastructure signage.

E17.1.4 The Contractor shall install the sign 30 days prior to commencement of Construction, or as soon as practical following award, pending shop drawing approval. The Contractor shall maintain the sign during Construction.

#### E17.2 Contractor Site Access Signage

E17.2.1 The Contractor shall be responsible for supplying and installing Contractor Site Access Signage to identify Contractor Deliveries and Access and Construction Site Access.

E17.2.2 Contractor Deliveries and Access signage shall meet the following requirements:

- (a) To be installed at the intersection of Seniuk Road and Ed Spencer Drive.
- (b) Shall be 1200mm high by 4800mm wide
- (c) Shall include a directional arrow indicating direction to site.
- (d) Sign shall be white with black lettering
- (e) Lettering shall be 600mm high.

E17.2.3 Construction Site Access signage shall meet the following requirements:

- (a) To be installed at the intersection of Seniuk Road and West Access road.
- (b) Shall be 1200mm high by 4800mm wide
- (c) Shall be used for identification of project consultants, contractors, owner and include after hours contact telephone number, emergency contact telephone number and site safety requirements.

E17.2.4 The Contractor shall provide a shop drawing for approval by the Contract Administrator prior to supplying and installing the Contractor Site Access Signage.

#### Measurement and Payment

E17.3 Supply and installation of infrastructure signs shall be paid for at the Contract Unit Price for "Infrastructure Signs". Infrastructure signs will be measured on a unit basis for each sign supplied and installed.

E17.4 Supply and installation of Contractor Site Access Signage (Contractor Deliveries and Access Sign and Construction Site Access sign) shall be incidental to the Work. No additional payment shall be made for the Contractor Site Access Signage.

### **E18. HYDROEXCAVATION**

E18.1 Prior to excavation over existing buried utility lines, including but not necessarily limited to, buried gas lines, electrical cables, air lines, the Contractor shall perform hydroexcavation to confirm the depth, alignments and sizes of buried utilities.

E18.2 Hydroexcavation may only be performed by a contractor with suitable equipment licensed to perform sewer and water work in the City of Winnipeg.

E18.3 Hydroexcavation shall be performed in a fashion such that the buried utility lines identified are not damaged during the process.

- E18.4 Upon identifying the depth, alignment and size of existing buried utilities via hydro-excavation, the Contractor shall record the information with alignment and depth surveyed using GPS equipment. The resultant information shall be shared with the Contract Administrator for use in record as-built drawings.
- E18.5 The Contractor shall provide the Contract Administrator with notification of planned locations where hydroexcavation is to be performed a minimum of seven (7) days prior to performing hydroexcavation.
- E18.6 The Contractor shall notify respective utilities, such as Manitoba Hydro, for hydroexcavation over buried electrical service and gas service feeds and coordinate and arrange for any required safety watch from the utility during hydroexcavation.

Measurement and Payment

- E18.7 Hydroexcavation shall be measured on an hourly basis and paid for at the Contract Unit Price per hour for "Hydroexcavation".

**E19. BOLLARDS**

- E19.1 The Contractor shall supply and install bollards around fire hydrants and specified testholes as indicated on the design drawings.
- E19.2 Bollards shall be constructed in accordance with the details shown on the design drawings detail sheet.
- E19.3 The contractor shall supply all equipment, labour and materials required to supply and install the bollards per the design drawings.

Measurement and Payment

- E19.4 Supply and installation of bollards will be at the Contract Unit Price for "Bollards" for each bollard supplied and installed in accordance with this specification.

**E20. CITY & CONTRACT ADMINISTRATOR TRAILERS**

- E20.1 The Contractor shall provide setup of City & Contract Administrator trailers supplied by the City of Winnipeg in accordance with supplemental specification "01 50 00 Temporary Facilities and Controls".
- E20.2 City & Contract Administrator Trailers are anticipated to be delivered between October 1 and October 31, 2014.

Measurement and Payment

- E20.3 Setup of City & Contract Administrator Trailers" shall be paid at the Contract Lump Sum price for "Setup of City & Contract Administrator Trailers" and shall include all materials, labour and equipment required to perform setup in accordance with the specifications included in this Bid Opportunity.

**E21. REMOVE EXISTING STOCKPILE**

- E21.1 The existing stockpile of suitable site material at the south end of the SEWPCC site shall be removed and levelled prior to commencing any site work within the footprint of the mound. The material shall be removed in accordance with CW 3170-R3 and moved to the designated stockpile areas at the west end of the site, as indicated on the design drawings. Removal of the stockpile shall be classified as Common Excavation in terms of method of removal. The material for the stockpile shall be removed and relocated to the new stockpile locations at the west end of the site as indicated on the design drawings.

#### Measurement and Payment

- E21.2 Removal of the existing stockpile shall be paid at the Contract Unit Price price for “Remove Existing Stockpile i) Common Excavation – Suitable Site Material” and shall include all materials, labour and equipment required to perform the work in accordance with this specification.

### **E22. GRADING AND MAINTAINING NEW STOCKPILES**

- E22.1 The new stockpiles at the west end of the SEWPCC site shall be graded in accordance with the slopes on the design drawings. The contractor shall maintain the stockpiles throughout the duration of construction keeping and protect them from erosion.

- E22.2 Maintenance of the stockpiles shall be performed to the satisfaction of the Contract Administrator. The Contractor shall ensure that the stockpiles maintained in a safe manner.

#### Measurement and Payment

- E22.3 Grading and maintaining new stockpiles at the west end of the site will be paid at the Contract Lump Sum price for “Grading and Maintaining New Stockpiles” and shall include all materials, labour and equipment required to perform the work in accordance with this specification. “Grading and Maintaining New Stockpiles” will be paid with 50% of the unit price on the first progress payment following commencement of the Work. The remaining 50% of “Grading and Maintaining New Stockpiles” will be paid subsequent to completion of the Work.

### **E23. GENERAL SITE MAINTENANCE**

- E23.1 For the duration of the contract, the Contractor shall be responsible for maintaining 24-hour access to the site for the City of Winnipeg for their continuous operation of the SEWPCC.

- E23.2 Maintaining 24-hour site access shall include, but not necessarily be limited to, clearing snow and sanding all site roadways utilized by the City of Winnipeg in the course of their operation of the plant, as required during the winter months. This primarily refers to uninterrupted access to the site by sludge trucks 24-hours a day, but also includes access by any other vehicles required for operation of SEWPCC.

#### Measurement and Payment

- E23.3 General site maintenance shall be incidental to the Work performed on-site under this Contract. No additional payment shall be made for general site maintenance.

### **E24. APPLICABLE MRST/PST FOR ELECTRICAL AND MECHANICAL WORKS**

- E24.1 Electrical work and mechanical work are subject to MRST/PST. Line items in the “Form B: Prices” have been added for accounting for respective MRST/PST for electrical and mechanical works.

#### Measurement and Payment

- E24.2 The Lump Sum Price for each line item titled “Applicable MRST/PST for Electrical Work Items G.1 through G.8 inclusive” shall be based upon the applicable percentage of MRST/PST required for the respective items of Work in the MRST/PST line item.

- E24.3 The Lump Sum Price for the line item titled “Applicable MRST/PST for Mechanical Work Items H.1 through H.2 inclusive” shall be based upon the applicable percentage of MRST/PST required for the respective items of Work identified in the MRST/PST line item.

**E25. EROSION CONTROL BLANKET**

E25.1 All site ditches constructed as a part of the Work in this bid opportunity shall be lined with an erosion control blanket.

E25.2 The Work shall consist of the supply, handling, storage, placement, stapling, trimming, and maintenance of erosion control blanket on ditch channels and their side slopes.

E25.3 References:

Klason Method (Technical Association of the Pulp and Paper industry Test Method, Acid insoluble lignin in wood and pulp, T222 om-98 Method).

- ASTM D1117, Standard Guid for Evaluation Non-woven Fabrics
- ASTM D1777, Standard Test Method for Thickness of textile Materials
- ASTM D3775, Standard Test Method for Fabric Count of Woven Fabric
- ASTM D3776, Stadnard Test Methods for Mass Per Unit Area (Weight) of Fabric
- ASTM D4632, Standard Test Method fo Grab Breaking Load and Elongation of Geotextiles

E25.4 The Contractor shall submit all of the manufacturer’s product specifications and recommended installation methods for the proposed erosion control blanket and associated materials.

**Materials**

E25.5 Erosion control blanket shall be approved by the Contract Administrator. Erosion control blankets shall be stored in such a manner as to protect the material from damage and deterioration from natural elements.

E25.6 Erosion Control Blanket shall be a Class 2, Type A blanket, which is a long-term duration (2 years or greater), organic erosion control blanket.

Jute fabric intended for use as an erosion control blanket shall be woven fabric of a uniform open weave of single jute yarn. The jute yarn shall be of loosely twisted construction having an average twist of not less than one and one-half turns per inch. The average size of the warp and weft yarns shall be approximately the same. The woven fabric shall be furnished in rolled strips. The minimum width of the strips shall be 1200mm (48 inches) with a tolerance of plus or minus 25mm (1.0 inch).

The jute fibre shall be yarn fibre, woven, undeyed and unbleached. The erosion control blanket shall be non-toxic to vegetation and meet the following specifications:

Property	Specification	Test Method
Colour	Natural Brown	-
Warp Count	60 min	ASTM D3775
Weft Count	45 min	ASTM D3775
Mass/Unit Area	480 gm/m <sup>2</sup> min	ASTM D3776
Grab Tensile Strength- Dry	4200 x 2400 N/m	ASTM D4632
Open Area	60 – 65%	-

E25.7 The Contractor shall supply staples to secure the erosion control blanket to the ditch surface and respective side slopes. The staples supplied and installed shall meet the following requirements:

<b>Property</b>	<b>Specification</b>
Shape	U-shaped
Gauge	10µm min
Crown	25mm
Legs	200

#### Construction Methods

E25.8 The Contractor shall place erosion control blanket on the surface of all ditch channels and their respective side slopes as indicated on the design drawings. The actual alignment and location of the erosion control blanket may be adjusted in the field by the Contract Administrator.

E25.9 Starting with the blanket on the bottom of the ditch, roll blanket out in the direction of water flow. Securely fasten blanket against soil surface with staggered staple pattern as per the manufacturer's recommendations and as accepted by the Contract Administrator. There shall be a minimum of 4 staples per square metre of erosion control blanket. Place blankets end over end in the downstream direction and secure overlaps with a double row of staples, staggered 100mm (maximum) apart. There shall be a minimum 150mm overlap between blankets in the downstream direction. A staple check slot consisting of a double row of staples staggered 100mm apart and 100mm on centre over the entire width of the ditch shall be installed at 30m intervals along the length of the ditch.

Repeat with blankets along the side slopes of the ditch. The overlap between adjacent blankets in the ditch side slope direction shall be 100mm.

#### Maintenance

E25.10 The ditches covered with erosion control blanket shall be regularly inspected, and in particular after severed rainfall or storm events, to check for blanket separation or breakage.

Any damaged or poorly performing areas as a result of storm events shall be replaced/repared immediately. Re-grading of the ditch slopes by manual labour methods may be required in the event of rill or gully erosion. Areas requiring replacement as directed by the Contract Administrator will be re-measured and additionally paid for at the Contract Unit Price for the work item.

No re-measurement or payment will be made for those areas damaged and requiring replacement and reinstallation due to faulty installation of the erosion control blanket or the Contractor's Construction activity.

Should the Contract Administrator determine that the Contractor has not maintained the erosion control blankets property or has damaged the blankets from construction activities resulting in sediment releases beyond the work area, the contractor shall retrieve all sediment that has left the construction area to the fullest extent possible and repair the damaged erosion control blanket at the Contractor's own expense. Restoration of damaged erosion control blanket shall be performed within 2 working days of discovery, unless precluded by inclement weather conditions or physical access restraints. If precluded, the restoration must take place within 2 working days of obtaining access.

#### Measurement and Payment

- E25.11 Erosion control blanket shall be measured by the square metres on the actual ground area covered from measurements made by the Contract Administrator. Payment shall be at the Contract Unit Price per square metre (m<sup>2</sup>) for "Supply and Placement of Erosion Control Blanket", measured as specified herein, which will be payment in full for performing all operations herein described and all other items incidental to the Work. Maintenance of the erosion control blanket is considered incidental to supply and installation of erosion control blanket and no separate measurement or payment will be made.

## **E26. LAND DRAINAGE CATCHBASINS**

- E26.1 Four catchbasins on the design drawings, identified as CB 1, CB 2, CB 3 and CB 4, require 1800mm diameter bases and solid covers. They shall be supplied and installed in accordance with CW 2130, but due to their diameter, considered manholes in terms of method of construction, measurement and payment with respect to the CW 2130.
- E26.2 The catchbasins referred to in this specification shall include all labour materials and equipment required to supply and install them, including a TF-101 manhole frame and solid cover and each one shall have a 600mm deep sump. It shall include connection of inlet and outlet pipes, as indicated on the design drawings.

### Measurement and Payment

- E26.3 The catchbasins are to be measured and paid for as manholes in accordance with CW 2130, measured per vertical metre of manhole and paid for at the Contract Unit Price per vertical metre of "Catchbasins – 1800mm dia base – 600mm deep sump – solid cover".

## **E27. LAND DRAINAGE MANHOLES**

- E27.1 Three manholes on the design drawings, identified as MH 1, MH 2 and MH 3 require 1800mm diameter bases and solid covers. They shall be supplied and installed in accordance with CW 2130.
- E27.2 The manholes referred to in this specification shall include all labour materials and equipment required to supply and install them, including a TF-101 manhole frame and solid cover and each one shall have a 1.0m deep sump.

### Measurement and Payment

- E27.3 The manholes are to be measured and paid in accordance with CW 2130, measured per vertical metre of manhole and paid for at the Contract Unit Price per vertical metre of "Manholes – 1800mm dia base – 1.0m deep sump – solid cover".

## **E28. CAST IRON SLIDE GATES**

- E28.1 Description

This specification shall cover the supply, delivery, installation and testing of cast iron slide gates, wall thimbles, stems, wall brackets and mechanical accessories.

- E28.2 Submittals

- E28.2.1 Submit shop drawings of cast iron slide gates, wall thimbles, mechanical lift operators, stems, wall brackets, and accessories in accordance with specification section "01 33 00 Submittal Procedures" and E32.

- E28.2.2 Submit Operating and Maintenance Manuals in accordance with specification section "01 33 00 Submittal Procedures" and E32.

Provide five (5) copies of all the manufacturer's brochures and technical literature detailing correct installation procedure and recommend operating and maintenance instructions. Manuals shall be bound with the project title and gate description identified on the front



cover. One set of manuals shall be provided for each size of gate. Final payment for slide gates will not be made until the above information has been provided to the Contract Administrator.

E28.2.3 Provide the following information to the Contract Administrator prior to the delivery of slide gate and operator assemblies in accordance with specification section "01 33 00 Submittal Procedures" and E32.

- (a) A certified copy of the Chemical and Physical Analysis on all materials used in the manufacture of the slide gate, wall thimbles, stems, operator and accessories or certification that the materials used are in strict accordance with this specification.
- (b) Copies of the test reports for Performance and Leakage tests. Included on the report shall be the signature of the official who is responsible for the gate assembly and testing.

E28.3 General Design

- (a) Specification Standard: AWWA C560-07
- (b) Mounting: Square front flange round opening wall thimble
- (c) Seating Head: Maximum design seating head for all gates will be from horizontal centerline of the gate to the top of the gate chamber roof unless noted otherwise in the drawings.
  - (i) Chamber 4: 3.66 m (12.0 ft)
- (d) Unseating Head: Maximum design unseating head for all gates will be from horizontal centerline of the gate to the top of the gate chamber.
  - (i) Chamber 4: 3.66 m (12.0 ft)
- (e) Lift standard stem extension to floor box finished with a 50 millimetre x 50 millimetre square nut suitable for attachment of an electric portable drill for opening.
- (f) Stem: The stainless steel stem shall be designed so the slenderness ratio (L/r) does not exceed 150.
- (g) Stem Guides: Adjustable in both horizontal and vertical directions.
- (h) Gate Opening Sizes
  - (i) Chamber 4: 750 mm diameter (30")
- (i) Acceptable Leakage as per AWWA C560-07.
- (j) Butyl rubber mastic shall be used to form a seal between the frame and thimble.
- (k) Frame and gate shall be painted with two coats of Intergard FP, Amerlock 2 Epoxy Coating or approved equivalent. Coatings shall be 150 µm per coat dry film thickness.
- (l) The size of fasteners, quantity and spacing shall be as recommended by the gate manufacturer.
- (m) The slide gate shall Armttec Series 20-10C Flow Control Slide Gate or approved equal.
- (n) Field touch-up chips and scratches of the cast-iron gate coating shall be completed with Amerlock 2 epoxy coating.

E28.4 Materials

- (a) Frame, Slide, guides and yoke ASTM A48 Cast Iron (Class 30) or ASTM A126 Cast Iron (Class B)
- (b) Seating Faces ASTM B21 Naval Bronze, Alloy 482 or ASTM B98, Alloy 655
- (c) Wall Thimble ASTM A48 Cast Iron (Class 30) or ASTM A126 Cast Iron (Class B)
- (d) Wedges ASTM B584 Manganese Bronze, Alloy 865
- (e) Wedge Blocks ASTM A48 Cast Iron (Class 30) or ASTM A126 Cast Iron (Class B)
- (f) Fasteners & Anchors ASTM A276 Type 304 Stainless Steel

- (g) Stem ASTM A276 Type 304 Stainless Steel
- (h) Stem Couplings ASTM A276 Type 304 Stainless Steel
- (i) Stem Guide ASTM A48 Cast Iron (Class 30) or ASTM A126 Cast Iron (Class B) with Bronze bushings
- (j) Shop Drawings
  - (i) Submit shop drawings of cast iron slide gates, mechanical lift operators, stems, wall brackets and accessories in accordance with specification section "01 33 00 Submittal Procedures".
- (k) Delivery and Shipping
  - (i) The Contract Administrator will examine the slide gate assemblies, wall thimbles, frames, stems, and accessories upon delivery and will reject any equipment that is found to be damaged to the extent that, in the Contract Administrator's opinion, it cannot be put to the use for which it was intended. The Contractor shall arrange with the gate supplier to repair any superficially damaged equipment to the satisfaction of the Contract Administrator.
  - (ii) It shall be the responsibility of the Contractor to negotiate any claims for damage with the carrier and to make arrangements to have any rejected equipment replaced as soon as possible at no extra expense to the City.

## E28.5 Construction Methods

### E28.5.1 Installation of New Anchor Bolts

- (a) Install stainless steel threaded rod as per manufacturer's installation procedures and recommendations. Anchors shall be installed only upon confirmation of correct anchor bolt hole layout and completion of drilling all anchor holes.
- (b) Provide heating as specified in E31 during epoxy adhesive curing time.

### E28.5.2 Installation of Cast Iron Slide Gate

- (a) Install cast iron slide gates, wall thimbles, stems, wall brackets and accessories as shown on the drawings and in accordance with the manufacturer's recommendations.
- (b) Make arrangements to have a qualified field representative of the slide gate supplier/manufacturer inspect the installation during and after completion and provide a Certificate of Satisfactory Installation to the Contract Administrator.

### E28.5.3 Shop Testing

- (a) The fully assembled gate shall be shop inspected, adjusted and tested for operation and leakage at the design head before shipping.

### E28.5.4 Field Testing

- (a) Perform leakage tests in the Contract Administrator's presence once slide gates have been installed to ensure compliance with the allowable leakage rate indicated in AWWA C560-07.
- (b) Arrange for a qualified field representative of the slide gate supplier/manufacturer to be present during field testing.
- (c) The leakage test for unseating head will be performed by closing the existing flap gate, filling LDS between Chamber 4 and Manhole 1 with water to the specified design unseating head and measuring the leakage rate through the slide gate.
- (d) The leakage test for seating head cannot be performed in the gate chamber.
- (e) Water used for testing purposes must be chlorine free. Potable drinking water shall be de-chlorinated if used for testing purposes.
- (f) The Contractor will be responsible to pump river water, arrange delivery by tanker truck, or supply water from a hydrant into the chamber for testing purposes.

- (g) If a gate fails the field leakage test, the Contractor shall undertake adjustments, replacements or other modifications recommended by the slide gate supplier/manufacturer's field representative and repeat the test. The sequence shall be repeated until the gate passes the allowable leakage rate.

**E28.6 Measurement and Payment**

- E28.6.1 Supply and delivery of a cast iron slide gate, wall thimble, stem, wall bracket(s) and accessories will be measured and paid for at the Contract Lump Sum Price for "Cast Iron Slide Gate Supply and Delivery" for each diameter of gate specified, "600mm diameter" or "750mm diameter" respectively, executed in accordance with this specification and accepted by the Contract Administrator.
- E28.6.2 Installation and testing of a cast iron slide gate, wall thimble, stem, wall bracket(s), accessories, and installation of new anchor bolts will be measured and paid for at the Contract Lump Sum Price for "Cast Iron Slide Gate Installation and Testing" for each diameter of gate specified, "600mm diameter" or "750mm diameter" respectively, executed in accordance with this specification and accepted by the Contract Administrator.

**E29. FLAP GATES**

- E29.1 The contractor shall supply and install flap gates in the manholes indicated on the design drawings to the specified diameter of flap gate.
- E29.2 Flap gates shall be Armtec Model 20C Flap Gate or approved equal in accordance with B7.
- E29.3 Flap gates shall be installed inside the manholes specified on the design drawings and in accordance with the manufacturer's specifications.
- E29.4 The Contractor shall supply all materials, labour and equipment required to install the flap gates in accordance with this specification.

**Measurement and Payment**

- E29.5 Each Flap Gate will be measured and paid for at the Contract Unit Price for "Flap Gate Inside New Manhole" for the respective diameter of flap gate indicated for each flap gate supplied and installed in accordance with this specification.

**E30. CONNECTION TO EXISTING OUTFALL CHAMBER NO. 4**

- E30.1 The contractor shall supply all labour, material and equipment necessary to perform connection of land drainage sewer to existing outfall chamber No. 4 as indicated on the design drawings.
- E30.2 The contractor shall construct a concrete collar to connect the land drainage sewer pipe to Outfall Chamber No. 4 to the specifications indicated on the drawings. This shall include the labour, equipment and materials required to core into the chamber to facilitate the connection of the pipe.
- E30.3 Connection to the chamber shall be coordinated with the SEWPCC and the Contract Administrator and performed when the Chamber is accessible due to low flows through the chamber.
- E30.4 The Contractor shall core a hole through the top of the chamber to facilitate installation of the stem and valve box and cover to allow access to operate the gate. The valve box cover shall be supplied and installed in accordance with the design drawings.

**Measurement and Payment**

- E30.5 The connection and construction of the concrete collar shall be measured and paid for on a lump sum basis for "Connection to Existing Outfall Chamber No. 4" and shall include all labour,

equipment and materials required to perform the work in accordance with the drawings and this specification.

- E30.6 The coring of the hole through the top of the chamber and casting in the valve box shall be measured and paid for on a lump sum basis for "Core hole through chamber top and cast in valve box", and shall include all labour, materials and equipment necessary to perform the work in accordance with the drawings and this specification.

### **E31. COLD WEATHER REQUIREMENTS**

- E31.1 Should any concrete Work for slide gate installation be required to be carried out when the daily mean temperature is below 5°C or anticipated to be below 5°C within the next 24 hours, cold weather requirements will be specified herein.
- E31.2 All freshly placed concrete shall be protected from the elements and from defacements due to construction operations.
- E31.3 The following are minimum requirements for protecting concrete during and after placement during freezing weather, but mere adherence to these requirements will not relieve the Contractor of the necessity for producing concrete which has not been weakened or injured by frost or freezing, or replacing such damaged Work at no additional cost to the City;
- (a) Before any concrete is placed, all ice, snow, and frost shall be completely removed from all formwork, and other surfaces against which concrete temperatures of such surfaces raised above 7°C for twenty-four (24) hours minimum prior to concreting. Where concrete Work is to come in contact with the earth, the surface of the earth shall be completely free of frost when concrete is placed thereon.
  - (b) Concrete aggregates and water shall be heated to not over 80°C. Concrete shall be not less than 20°C or more than 30°C in temperature when deposited. Concrete when placed during freezing weather, or if freezing is anticipated during curing period, shall be fully enclosed and the temperature of same maintained at not less than 20°C for five (5) days nor less than 5°C for an additional five (5) days.
  - (c) Heating enclosures shall be strong and wind-proof, well ventilated with heating units so located as to prevent local overheating or drying of the concrete or damage from combustion gases. Only indirect fired heaters will be accepted. Units must be vented outside the enclosure. No direct fired units will be accepted.
  - (d) The Contractor shall inform the Contract Administrator well in advance as to the methods of enclosure and frost protection he proposes to employ.
- E31.4 Cold weather requirements shall be considered incidental to the Works of this Contract and no measurement or payment will be made for this item.

### **E32. SLIDE GATE SHOP DRAWINGS**

- E32.1 Description
- (a) This Specification shall revise, amend and supplement the requirements of CW1110.
    - (i) The term 'shop drawings' means drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data, including site erection drawings which are to be provided by the Contractor to illustrate details of a portion of the work.
    - (ii) The Contractor shall submit specified shop drawings to the Contract Administrator for review. All submissions must be in metric units. Where data is in imperial units, the correct metric equivalent shall also be on all submissions for Engineering review.
  - (b) Shop Drawings
    - (i) Original drawings are to be prepared by Contractor, Subcontractor, supplier, distributor, or manufacturer, which illustrate appropriate portion of work; showing fabrication, layout, setting or erection details as specified in appropriate sections.

- (c) Contractor's Responsibilities
- (i) Review shop drawings, product data and samples prior to submission and stamp and sign drawings indicating conformance to the Contract requirements.
  - (ii) Verify:
    - (i) Field Measurements
    - (ii) Field Construction criteria
    - (iii) Catalogue numbers and similar data
  - (iii) Coordinate each submission with requirements of Work and Contract Documents. Individual shop drawings will not be reviewed until all related drawings are available.
  - (iv) Notify Contract Administrator, in writing at time of submission, of deviations from requirements of Contract Documents
  - (v) Responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator's review of submission, unless the Contract Administrator gives written acceptance of specified deviations.
  - (vi) Responsibility for errors and omissions in submission is not relieved by the Contract Administrator's review of submittals.
  - (vii) The Contractor shall make any corrections required by the Contract Administrator and shall resubmit the required number of corrected copies of Shop Drawings. The Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections requested by the Contract Administrator on the previous submission.
  - (viii) After Contract Administrator's review and return of copies, distribute copies to sub-trades as required.
  - (ix) Maintain one (1) complete set of reviewed shop drawings, filed by Specification Section Number, at the site of the work for use and reference of the Contract Administrator and Subcontractors.
- (d) Submission Requirements
- (i) Schedule submissions at least 7 Calendar days before dates reviewed submissions will be needed, and allow for a 7 Calendar day period for review by the Contract Administrator of each individual submission and re-submission, unless noted otherwise in the Contract Documents.
  - (ii) Submit five (5) paper prints of shop drawings. The Contractor is advised that the Contract Administrator will retain three (3) copies of all submittals and return two (2) copies to the Contractor.
  - (iii) Accompany submissions with transmittal letter, containing:
    - (i) Date
    - (ii) Project title and Bid Opportunity Number
    - (iii) Contractor's name and address
    - (iv) Number of each shop drawing, product data and sample submitted
    - (v) Specification Section, Title, Number and Clause
    - (vi) Drawing Number and Detail/ Section Number
    - (vii) Other pertinent data
  - (iv) Submission shall Include:
    - (i) Date and revision dates.
    - (ii) Project title and Bid Opportunity number.
    - (iii) Name of:
      - (i) Contractor
      - (ii) Subcontractor
      - (iii) supplier
      - (iv) manufacturer
      - (v) separate detailer when pertinent

- (iv) Identification of product of material.
  - (v) Relation to adjacent structure or materials.
  - (vi) Field dimensions, clearly identified as such.
  - (vii) Specification section name, number and clause number or drawing number and detail/section number.
  - (viii) Applicable standards, such as CSA or CGSB numbers.
  - (ix) Contractor's stamp, initialled or signed, certifying review of submission, verification of field measurements and compliance with Contract Documents.
- (e) Other Considerations
- (i) Fabrication, erection, installation or commissioning may require modifications to equipment or systems to conform to the design intent. Revise pertinent shop drawings and resubmit.
  - (ii) Material and equipment delivered to the site of the works will not be paid for at least until pertinent shop drawings have been submitted and reviewed.
  - (iii) Incomplete shop drawing information will be considered as stipulated deductions or the purposes of progress payment certificates.
  - (iv) No delay or cost claims will be allowed that arise because of delays in submission, re-submissions and review of shop drawings.

#### E32.2 Measurements and Payment

- (i) Preparation and submittal of Shop Drawings shall be considered incidental to the Works of this Contract and no measurement or payment will be made for this item.