



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 209-2011

SEWPCC ESSENTIAL SYSTEM UPGRADES

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 SEWPCC ESSENTIAL SYSTEM UPGRADES

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, April 29, 2011.

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

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

B3. SITE INVESTIGATION

B3.1 Further to C3.1, the Contract Administrator or an authorized representative will be available at the Site at 9:30 am on April 19, 2011 to provide Bidders access to the Site.

B3.2 Bidders must be at the front entrance of the SEWPCC facility at 9:30 am sharp to obtain access.

B3.3 Bidders attending the Site Investigation must wear CSA approved safety footwear, a hard hat, and safety glasses while in the process areas of the Site.

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. ADDENDA

B5.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>
- B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

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

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

B7. BID COMPONENTS

- B7.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;
 - (c) Bid Security
 - (i) Form G1: Bid Bond and Agreement to Bond, or
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
a certified cheque or draft;
- B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.
- B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B7.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B7.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.
- B7.5 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.
- B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B15.1(a).
- B7.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B7.8 Bids shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1
- ## **B8. BID**
- B8.1 The Bidder shall complete Form A: Bid, making all required entries.
- B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

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

B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.

B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

B8.4 Paragraph 12 of Form A: Bid shall be signed in accordance with the following requirements:

- (a) if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
- (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
- (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B8.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.

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

B9. PRICES

B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B9.1.1 Notwithstanding C12.2.3(c), prices on Form B: Prices shall not include the Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

B9.2 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.

B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B9.4 The maximum labour rate for Form B, Item 13, DCS Commissioning, is \$230 / hour.

- (a) In the event that the rate submitted for Item 13 is greater than \$230 / hour, \$230 / hour will be utilized for the purpose of bid evaluation and payment.

B9.5 The Bidder shall state a labour rate for additional unforeseen labour for Form B, Item 14. The rate shall be inclusive of:

- (a) Any potential overtime or night-time work that may be required.
- (b) Additional general requirements including safety, ventilation, etc.

- (c) In the event that the rate submitted for Item 14 is greater than \$110 / hour, \$110 / hour will be utilized for the purpose of bid evaluation and payment.

B9.6 The mark-up factor for additional material, specified on Form B, Item 15, shall be a multiplier of 1.15, that when multiplied by the base cost, shall represent the total price including the Contractor's additional handling charge and profit to supply the material. The total price for the material shall be the base cost multiplied by the mark-up factor.

- (a) The mark-up factor shall be based upon the Contractor's or Subcontractor's base cost. This base cost shall be the Contractor's or Subcontractor's procurement cost, or if the material is manufactured by the Contractor or Subcontractor, the internal wholesale cost.
- (b) The multiplier shall be the same, regardless if the material is supplied by a Subcontractor or directly by the Contractor.

B9.7 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. QUALIFICATION

B10.1 The Bidder shall:

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

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

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

B10.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);
- (d) be normally engaged in and fully competent in electrical and instrumentation works of a similar nature and employ qualified journeyman familiar with the equipment and devices being installed.

B10.4 Further to B10.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:

- (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
- (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information

Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>)

- B10.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B10.6 Reference checks to confirm information provided may not be restricted to only those submitted by the Bidder, and may include organizations representing Persons, known to have done business with the Bidder.
- B10.7 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B11. BID SECURITY

- B11.1 The Bidder shall provide bid security in the form of:
- (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or
 - (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
 - (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.
- B11.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.
- B11.1.2 All signatures on bid securities shall be original.
- B11.1.3 The Bidder shall sign the Bid Bond.
- B11.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.
- B11.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.
- B11.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B11.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.
- B11.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.
- B11.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

B12.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.

B12.1.1 Bidders or their representatives may attend.

B12.2 Following the Submission Deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/default.stm>

B12.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/default.stm>

B12.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B13. IRREVOCABLE BID

B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.

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

B14. WITHDRAWAL OF BIDS

B14.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.

B14.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.

B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.

B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:

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

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

B15. EVALUATION OF BIDS

- B15.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation there from (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B15.2 Further to B15.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.
- B15.3 Further to B15.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.
- B15.4 Further to B15.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices adjusted, if necessary, as follows:
- (a) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder is within the budgetary provision for the Work, no adjustment will be made to the Total Bid Price; or
 - (b) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder exceeds the budgetary provision for the Work, the Total Bid Prices of all responsive Bids submitted by responsible and qualified Bidders will be adjusted by deducting Item 8, provided that the adjusted amount results in a Total Bid Price within the budgetary provision.
- B15.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.
- B15.4.2 Further to B15.1(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.

B16. AWARD OF CONTRACT

- B16.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.
- B16.2.1 Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B16.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B15.

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

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of electrical upgrades to the SEWPCC facility.

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

- (a) Supply and install a comprehensive fire alarm system for the entire facility.
- (b) Supply and install three UPS units and connect new UPS powered circuits.
- (c) Supply four UPS units for the NEWPCC facility, for installation by others.
- (d) Demolish the existing and install new gas detection systems for the facility.
- (e) Modify and install new exit and emergency lighting.
- (f) Install new power meters for the Grit area MCCs.
- (g) Repair buried conduits between the Secondary Clarifier and UV Disinfection Buildings.
- (h) Control system modifications.
- (i) DCS Programming and associated commissioning.

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) "**NEWPCC**" means North End Water Pollution Control Centre;
- (b) "**SEWPCC**" means South End Water Pollution Control Centre;
- (c) "**UPS**" mean Uninterruptible Power Supply.

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is SNC Lavalin Inc., represented by:

Charles Cong
Project and Construction Services
SNC-Lavalin Inc.
148 Nature Park Way, Winnipeg, MB, R3P 0X7
charles.cong@snclavalin.com

Telephone No. (204) 786-8080
Facsimile No. (204) 786-7934

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

D5. CONTRACTOR'S SUPERVISOR

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

D6. NOTICES

- D6.1 Except as provided for in C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.
- D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3, D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D4.1.
- D6.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following facsimile number:
- The City of Winnipeg
Chief Financial Officer
Facsimile No.: (204) 949-1174
- D6.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:
- The City of Winnipeg
Legal Services Department
Attn: City Solicitor
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

D7. FURNISHING OF DOCUMENTS

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

SUBMISSIONS

D8. AUTHORITY TO CARRY ON BUSINESS

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

D9. SAFE WORK PLAN

- D9.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D9.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Safety/default.stm>

D10. INSURANCE

D10.1 The Contractor shall provide and maintain the following insurance coverage:

- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
- (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- (c) all risks course of construction insurance in the amount of one hundred percent (100%) of the total Contract Price, written in the name of the Contractor and The City of Winnipeg, at all times during the performance of the Work and until the date of Total Performance.

D10.2 Deductibles shall be borne by the Contractor.

D10.3 The Contractor shall provide the City Solicitor with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than the date specified in C4.1 for the return of the executed Contract.

D10.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D11. PERFORMANCE SECURITY

D11.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

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

D11.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

D11.2 The Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D12. DETAILED WORK SCHEDULE

D12.1 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.

D12.2 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;
- all acceptable to the Contract Administrator.

SCHEDULE OF WORK

D13. COMMENCEMENT

- D13.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.
- D13.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D8;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D9;
 - (iv) evidence of the insurance specified in D10;
 - (v) the performance security specified in D11;
 - (vi) the detailed work schedule specified in D12; and
 - (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.
- D13.3 The City intends to award this Contract by May 31, 2011.
- D13.3.1 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.

D14. CRITICAL STAGES

- D14.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) Complete the exit and emergency lighting upgrades in the following spaces by July 29, 2011.
 - (i) Primary Clarifiers tank areas and Exhaust Fan Rooms.
 - (b) Complete the UPS upgrades by August 19, 2011.
 - (c) Complete the Gas Detection Upgrades by August 31, 2011.
 - (d) Complete the Fire Alarm installation associated with the following spaces by September 23, 2011. Testing and commissioning may be delayed.
 - (i) Wet Well and Foyer;
 - (ii) Grit Building Mechanical Room;
 - (iii) Screen Room and Truck Bay;
 - (iv) Grit Tank Room;
 - (v) Primary Clarifier Exhaust Fan Rooms.

D15. SUBSTANTIAL PERFORMANCE

- D15.1 The Contractor shall achieve Substantial Performance by **October 28, 2011**.
- D15.2 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.

- D15.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D16. TOTAL PERFORMANCE

- D16.1 The Contractor shall achieve Total Performance by **November 30, 2011**.
- D16.2 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.
- D16.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D17. LIQUIDATED DAMAGES

- D17.1 If the Contractor fails to achieve 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) Substantial Performance – five hundred dollars (\$500);
 - (b) Total Performance – one hundred dollars (\$100);
- D17.2 The amounts specified for liquidated damages in D17.1 is based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance or Total Performance by the days fixed herein for same.
- D17.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D18. JOB MEETINGS

- D18.1 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.
- D18.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D19. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

- D19.1 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).

D20. COOPERATION WITH OTHERS

- D20.1 The Contractor shall note that several other construction projects will be underway at the Deacon facility, including, but not limited to:
- (a) Bid Opportunity 759-2010 SEWPCC Headworks Upgrades;
 - (b) SEWPCC Electrical Classification Upgrades (estimated to be tendered in summer)
 - (c) SEWPCC Ventilation Upgrades (estimated to be tendered in fall)
- D20.2 Bid Opportunities for the above are available at the City of Winnipeg Materials Management website at <http://www.winnipeg.ca/matmgt/bidopp.asp>.
- D20.3 The Contractor will not have exclusive use of the Site. The Contractor shall coordinate activities with others and minimize disruptions to others, where possible.

MEASUREMENT AND PAYMENT

D21. PAYMENT

- D21.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

D22. PAYMENT SCHEDULE

- D22.1 Further to C12, payment shall be in accordance with the following payment schedule:
- (a) A maximum of 50% of Form B, Item 1 or 5% of the Total Bid Price, whichever is less, may be submitted for progress payment upon mobilization as per E3.1. The remaining amount will be paid out upon Substantial Performance.
 - (b) A maximum of 95% of Form B, Item 2 through Item 12 may be submitted for progress payments prior to the total completion of the associated services. The remaining 5% will be paid out upon total completion all of the associated work, including the required O&M Manual or other associated documentation.
- D22.2 Note that the Builders Liens Act and associated holdbacks will apply to the Work. The holdbacks identified above are prior to, and do not include, additional holdbacks as required by the Builder's Liens Act.

WARRANTY

D23. WARRANTY

- D23.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter, except where longer warranty periods are specified in the respective Specification sections, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.
- D23.1.1 For the purpose of Performance Security, the warranty period shall be one (1) year.
- D23.2 Notwithstanding C13.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.
- D23.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See D11)

KNOW ALL MEN BY THESE PRESENTS THAT

_____ ,
(hereinafter called the "Principal"), and

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

_____ dollars (\$_____)

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

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

BID OPPORTUNITY NO. 209-2011

SEWPCC ESSENTIAL SYSTEM UPGRADES

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

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

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

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

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

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

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

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

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 209-2011
SEWPCC ESSENTIAL SYSTEM UPGRADES

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Specification No.</u>	<u>Specification Title</u>
01 33 00	Submittal Procedures
01 42 00	References
01 45 00	Quality Control
01 52 00	Construction Facilities
01 61 00	Common Product Requirements
01 73 03	Execution Requirements
01 74 11	Cleaning
01 78 00	Closeout Submittals
01 79 00	Demonstration and Training
26 05 01	Common Work Results – Electrical
26 05 21	Wire and Cables (0-1000V)
26 05 22	Connectors and Terminations
26 05 28	Grounding – Secondary
26 05 29	Hangers and Supports for Electrical Systems
26 05 31	Splitters, Junction, Pull Boxes and Cabinets
26 05 32	Outlet Boxes, Conduit Boxes And Fittings
26 05 34	Conduits, Conduit Fastenings, and Conduit Fittings
26 05 44	Installation of Cables in Trenches
26 08 05	Acceptance Testing
26 24 17	Panelboards Breaker Type
26 27 13	Metering
26 28 21	Moulded Case Breakers
26 33 53	Static Uninterruptible Power Supplies
26 50 00	Lighting
26 53 00	Exit Signs
27 05 14	Communication Cables Inside Buildings
28 31 02	Multiplex Fire Alarm System
28 36 01	Gas Detection Systems
40 95 13	Control Panels
40 95 26	Instrument Air Piping and Devices
40 95 33	Process Control Networks
40 95 74	Junction Boxes – Automation

Drawing No.	Drawing Name / Title
GENERAL REQUIREMENTS	
1-0102A-E0008	Installation Details, Typical Floor Penetration Requirements
FIRE ALARM UPGRADES	
1-0102A-E0001	Legend and Details
1-0102A-E0002	Panel Networking Diagram
1-0102A-E0003	Detection and Notification Circuits
1-0102A-E0004	Installation Details
1-0102A-E0005	Installation Details, Hazardous Class I, Zone 2
1-0102M-E0003	Plan Layout, Fire Alarm - Admin Building, Main Level
1-0102M-E0004	Plan Layout, Fire Alarm - Admin Building, Lower Level
1-0102M-E0005	Fire Alarm Riser Diagram, Admin Building
SEP-793	Admin Building Expansion, Air Handling Unit – Loop M652-AHU
SEP-1025	Admin Building Vent Fan – Loop M681-F81
1-0102G-E0001	Plan Layout, Fire Alarm - Grit Building, Wet well & Dry well
1-0102G-E0002	Plan Layout, Fire Alarm - Grit Building, Main Level
1-0102G-E0003	Plan Layout, Fire Alarm - Grit Building, Upper Level
1-0102G-E0004	Plan Layout, Fire Alarm - Grit Building, Lower Level
1-0102G-E0005	Fire Alarm Riser Diagram, Grit Building - Detection
1-0102G-E0006	Fire Alarm Riser Diagram, Grit Building - Notification
1-0102G-E0028	Main Conduit Routing, Grit Building
SEP-2073	Standby Power Building, Smoke Detectors – Loops G303, G304
SEP-2105	Pump and Screen Building, Smoke Detectors – Loops G577, G578
1-0102B-E0001	Plan Layout, Fire Alarm - Service Building, Main Level
1-0102B-E0002	Plan Layout, Fire Alarm - Service Building, Mezzanine & Lower Level
1-0102B-E0003	Fire Alarm Riser Diagram, Service Building - Detection
1-0102B-E0004	Fire Alarm Riser Diagram, Service Building - Notification
SEP-2132	Service Building Expansion, Smoke Detectors – Loops B504, B507, B508
SEP-2135	Service Building Expansion, Smoke Detectors – Loops B533, B542
1-0102P-E0001	Plan Layout, Fire Alarm - Primary Clarifiers, Clarifiers 1 & 2
1-0102P-E0002	Plan Layout, Fire Alarm - Primary Clarifiers, Clarifier 3
1-0102P-E0003	Plan Layout, Fire Alarm - Primary Clarifiers, Penthouses & Storage Room
1-0102P-E0004	Plan Layout, Fire Alarm - Primary Clarifiers, Galleries 3 & 4
1-0102P-E0005	Plan Layout, Fire Alarm - Primary Clarifiers, Gallery 5
1-0102P-E0006	Fire Alarm Riser Diagram, Primary Clarifiers - Detection
1-0102P-E0007	Fire Alarm Riser Diagram, Primary Clarifiers - Notification
1-0102P-E0008	Main Conduit Routing, Primary Clarifiers
1-0102P-A0041	Instrument Loop Diagram, FACP-1 Main Alarms
SEP-1161	Primary Clarifier Expansion, Smoke Detector Monitoring and Alarm, Loop P534-XA
SEP-1162	Primary Clarifier Expansion, Smoke Detector Monitoring and Alarm, Loop P538-XA
1-0102R-E0002	Plan Layout, Fire Alarm - Oxygen Reactors, PSA Room & Junction Chamber
1-0102R-E0003	Plan Layout, Fire Alarm - Oxygen Reactors, Lower Level
1-0102R-E0004	Fire Alarm Riser Diagram, Oxygen Reactors
1-0102S-E0003	Plan Layout, Fire Alarm - Secondary Clarifiers, Truck Bays & Electrical Room
1-0102S-E0004	Plan Layout, Fire Alarm - Secondary Clarifiers, Clarifier 1
1-0102S-E0005	Plan Layout, Fire Alarm - Secondary Clarifiers, Clarifier 2
1-0102S-E0006	Plan Layout, Fire Alarm - Secondary Clarifiers, Clarifiers 1 & 2 Lower Level

1-0102S-E0007	Plan Layout, Fire Alarm - Secondary Clarifiers, Clarifier 3
1-0102S-E0008	Plan Layout, Fire Alarm - Secondary Clarifiers, Clarifier 3 Lower Level
1-0102S-E0009	Fire Alarm Riser Diagram, Secondary Clarifiers - Detection
1-0102S-E0010	Fire Alarm Riser Diagram, Secondary Clarifiers - Notification
1-0102S-E0024	Main Conduit Routing, Secondary Clarifiers
SEP-692	Secondary Clarifier Expansion, Smoke and High Temp. – Loops S501, S513, S502, S514
1-0102U-E0001	Plan Layout, Fire Alarm - UV Disinfection Facility
1-0102U-E0002	Fire Alarm Riser Diagram, UV Disinfection Facility
SEP-2436	Effluent Disinfection Facility, Electrical Plan – Site
SEP-2437	Effluent Disinfection Facility, Installation Details - Junction Box, Cable Tray and Cable
SEP-2439	Effluent Disinfection Facility, Floor Plan – Lighting and Power Distribution
UPS UPGRADES	
1-0102A-E0006	Single Line Diagram, Legend and Details
1-0102M-E0006	Plan Layout, Administration Building Electrical Room
1-0102M-E0007	Single Line Diagram, Administration Building
1-0102M-E0009	Plan Layout, Administration Building Computer Rooms
1-0102M-E0010	Wiring Diagram, UPS-M1
1-0102M-E0011	Panel Schedules, Administration Building Electrical Room
1-0102G-E0007	Plan Layout, Grit Building Electrical Room
1-0102G-E0008	Single Line Diagram, Grit Building Electrical Room
1-0102G-E0009	Plan Layout, Grit Building Control Room
1-0102G-E0010	Wiring Diagram, UPS-G1 & PCU-SA
1-0102G-E0011	Panel Schedules, Grit Building Electrical Room
1-0102G-E0025	Cable and Conduit Routing, Grit Building Lower Level
1-0102B-E0006	Plan Layout, Service Building Electrical Room and Generator Room
1-0102B-E0007	Single Line Diagram, Service Building
1-0102B-E0008	Panel Schedules, Service Building Electrical Room
1-0102P-E0009	Plan Layout, Primary Clarifier Electrical and Control Rooms
1-0102P-E0010	Single Line Diagram, Primary Clarifiers
1-0102P-E0012	Panel Schedules, Primary Clarifier Electrical Room
1-0102S-E0011	Plan Layout, Secondary Clarifier Control Room
1-0102S-E0012	Plan Layout, Secondary Clarifier Electrical Room
1-0102S-E0014	Single Line Diagram, Secondary Clarifiers
1-0102S-E0021	Wiring Diagram, UPS-S1 & PCU-SD,SE,SF,SG
1-0102S-E0022	Panel Schedules, Secondary Clarifier Electrical Room
1-0102S-E0023	Cable and Conduit Routing, Secondary Clarifiers
1-0102M-A0012	Instrument Loop Diagram, UPS-M1 Alarms
1-0102M-A0013	Junction Box Layout, JBA-UPS-M1
1-0102G-A0073	Instrument Loop Diagram, UPS-G1 Alarms
SEP-2129	Power Distribution Schematic, FDP-G -120 VAC, 24 VDC, AND 12 VDC
SEP-2130	Power Distribution Schematic, FDP-G - Miscellaneous
1-0102S-A0066	Instrument Loop Diagram, UPS-S1 Alarms
SEP-769	Power Distribution Schematic, FDP-S -120 VAC, 24 VDC, AND 12 VDC
GAS DETECTION UPGRADES	
1-0102G-A0044	Instrument Location Plan, Gas Detection - Wet Well
1-0102G-A0045	Instrument Location Plan, Gas Detection - Dry Well, Lower Level
1-0102G-A0046	Instrument Location Plan, Gas Detection - Screen Room & Grit Tank Room
1-0102G-A0047	Instrument Location Plan, Gas Detection - Standby Generator Building
1-0102G-A0048	Network Block Diagram, Gas Building Modbus Network

1-0102G-A0049	Gas Detection Schedules, GDC-G1, GDC-G2, GDC-G3
1-0102G-A0050	Wiring Diagram, GDC-G1 Gas Detection Controller
1-0102G-A0051	Junction Box Layout, JBA-GDC-G1
1-0102G-A0052	Wiring Diagram, GDC-G2 Gas Detection Controller
1-0102G-A0053	Junction Box Layout, JBA-GDC-G2
1-0102G-A0054	Wiring Diagram, GDC-G3 Gas Detection Controller
1-0102G-A0055	Junction Box Layout, JBA-GDC-G3
1-0102G-A0056	Instrument Loop Diagram, G501 Wet Well Gas Detection
1-0102G-A0057	Instrument Loop Diagram, G502 Dry Well Gas Detection
1-0102G-A0058	Instrument Loop Diagram, G501 Wet Well Gas Alarm & G607 Vent Failure
1-0102G-A0059	Instrument Loop Diagram, G503 Screen Room Gas Detection
1-0102G-A0060	Instrument Loop Diagram, G503 Grit Truck Bay Gas Detection
1-0102G-A0061	Instrument Loop Diagram, G504 Grit Tank Room Gas Detection
1-0102G-A0062	Instrument Loop Diagram, G503 Screen Room and Truck Bay Gas Alarm
1-0102G-A0063	Instrument Loop Diagram, G319 Standby Generator Building Gas Detection
1-0102G-A0064	Instrument Loop Diagram, G319 Standby Generator Building Gas Alarm
1-0102G-A0065	Instrument Loop Diagram, Ventilation Interlock
1-0102G-A0066	Instrument Loop Diagram, Common Fault Alarms
1-0102G-A0067	Instrument Loop Diagram, G501 Sample Panel Equipment
1-0102G-A0068	Terminal Layout, FDP-G and PCU-SA
1-0102G-A0069	Instrument Loop Diagram, G502 Dry Well Gas Alarms
1-0102G-A0070	Instrument Loop Diagram, G504 Grit Tank Room Gas Alarms
1-0102G-A0072	Panel Layout, NP-G1
1-0102G-A0086-001	Panel Layout, FDP-G Rear View
1-0102G-A0086-002	Panel Layout, FDP-G Rear View
1-0102G-A0087	Network Block Diagram, Grit Building Process Network
1-0102B-A0027	Instrument Location Plan, Gas Detectors - Boiler Room
1-0102B-A0028	Instrument Loop Diagram, B550 Boiler Room Gas Detection
1-0102B-A0029	Instrument Loop Diagram, B550 Boiler Room Gas Alarm
1-0102S-A0056	Instrument Location Plan, Gas Detectors - Secondary Clarifiers
1-0102S-A0057	Network Block Diagram, Secondary Clarifiers Modbus Network
1-0102S-A0058	Gas Detection Schedules, GDC-S1
1-0102S-A0059	Junction Box Layout, JBA-GDC-S1
1-0102S-A0060	Wiring Diagram, GDC-S1 Gas Detection Controller & NDV-S2 RS485/RS232 Converter
1-0102S-A0061	Instrument Loop Diagram, S590 Scrubber Room Gas Detection
1-0102S-A0062	Instrument Loop Diagram, S591 Truck Bay Gas Detection
1-0102S-A0063	Instrument Loop Diagram, S590 Scrubber Room Gas Alarm
1-0102S-A0064	Instrument Loop Diagram, S591 Truck Bay Gas Alarm
1-0102S-A0065	Instrument Loop Diagram, GDC-S1 Common Fault Alarm
1-0102A-A0004	Instrument Installation Details, Gas Detection Equipment, Ceiling Beam and Wall Mounted
1-0102A-A0005	Instrument Installation Details, Gas Detection Equipment, Miscellaneous
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SEP-832	MCC-1G, MCC-2G, MCC-3G, and MCC-4G Layout and Single Line
1-0102G-E0029	Wiring Diagram, MCC-1G & MCC-2G Metering
1-0102G-E0030	Wiring Diagram, MCC-3G & MCC-4G Metering
SEP-2101	Instrument Loop Diagram, G551 and G552
SEP-2102	Instrument Loop Diagram, G553 and G554

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1-0102A-E0007	Sign Layout, Typical Exit Signage
SEP-824	Lighting and Receptacles Floor Plan, Wet Well and Dry Well
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SEP-463	Lighting and Receptacles Floor Plan, Secondary Ventilation and Control Room
P&IDs	
1-0102A-A0001	P&ID, Legend and Details
1-0102A-A0001	P&ID, Legend and Details
1-0102A-A0001	P&ID, Legend and Details
1-0102M-A0011	P&ID, Miscellaneous
1-0102G-A0028	P&ID, Screen Room Ventilation Unit, G684-AHU
1-0102G-A0029	P&ID, Wet Well Exhaust Fans, G686-EF86 AND G687-EF87
1-0102G-A0032	P&ID, Miscellaneous
1-0102G-A0035	P&ID, 1000 KW Natural Gas Genset
1-0102G-A0036	P&ID, 1600A Automatic Transfer Switch, G311-ATS
1-0102G-A0037	P&ID, Electrical Distribution
1-0102G-A0071	P&ID, Gas Detection
1-0102B-A0013	P&ID, Instrument Air Header
1-0102B-A0020	P&ID, Grit Tank Exhaust Fans, B686-EF, B687-EF, B688-EF
1-0102B-A0024	P&ID, Miscellaneous
1-0102S-A0053	P&ID, Miscellaneous
AREA CLASSIFICATION DRAWINGS	
1-0102G-E0012	Electrical Classification Plan, Wet Well and Dry Well
1-0102G-E0013	Electrical Classification Plan, Grit Building Lower Level
1-0102G-E0014	Electrical Classification Plan, Grit Building Main Level, and Standby Generator Building
1-0102G-E0015	Electrical Classification Plan, Wet Well and Foyer
1-0102G-E0016	Electrical Classification Plan, Grit Building - Upper Level
1-0102B-E0009	Electrical Classification Plan, Service Building, Main and Lower Levels
1-0102B-E0010	Electrical Classification Plan, Service Building, Upper Level
1-0102P-E0013	Electrical Classification Plan, Primary Clarifier - Lower Level
1-0102P-E0014	Electrical Classification Plan, Primary Clarifier - Main Level
1-0102R-E0005	Electrical Classification Plan, Oxygen Reactors
1-0102S-E0018	Electrical Classification Plan, Secondary Clarifiers - Lower Level
1-0102S-E0019	Electrical Classification Plan, Secondary Clarifiers - Main Level
1-0102S-E0020	Electrical Classification Plan, Secondary Clarifier 2 Fan Room
1-0102U-E0005	Electrical Classification Plan, Effluent and Disinfection Building

FOR REFERENCE	
1-0102A-B0001	Facility Floor Plan – Lower Level
1-0102A-B0002	Facility Floor Plan – Upper Level

<u>Filename.</u>	<u>Document Code</u>	<u>Document Name/Title</u>
209-2011_Cable_Schedule.pdf	112577-0106-47EL-0001	Cable Schedule
209-2011_Electrical_Forms.pdf	112577-0106-47RA-0001	Electrical Forms
209-2011_FRS.pdf	112577-0106-48ER-0002	Functional Requirements Specification
209-2011_Instrument_List.pdf	112577-0106-48EL-0001	Instrument List
209-2011_Lamacoid_Schedule.pdf	112577-0106-47EL-0002	Lamacoid Schedule

GENERAL REQUIREMENTS

E2. HAZARDOUS MATERIALS

- E2.1 Non-friable abated asbestos has been identified in the drywall of the Administration Building. Ensure any applicable precautions are taken when working with drywall in the facility.
- E2.2 If asbestos or other hazardous materials are encountered during the Work of the Contract, the Contractor shall stop all work and notify the Contract Administrator immediately. Removal of hazardous materials shall be dealt with by the City and the Contractor shall await further instruction by the Contract Administrator.

E3. SCOPE OF WORK

E3.1 General Requirements

- (a) Include the following items in the unit price bid for General Requirements:
- (i) Mobilization;
 - (ii) Demobilization;
 - (iii) Insurance; and
 - (iv) Bonding.
- (b) The Contractor is eligible for payment of mobilization services (as per D22.1(a)) when the Contract Administrator is satisfied that:
- (i) The Contractor has met all the Commencement requirements specified D13.
 - (ii) The contractor has mobilized equipment and substantially initiated work on Site.

E3.2 Fire Alarm Upgrades

- (a) Supply and install a complete fire alarm system, as per the drawings. Work includes:
- (i) Decommission and remove the existing Administration Building Fire Alarm Panel.
 - (ii) Supply and install a new fire alarm panel in the Service Building.
 - (iii) Supply and install a new fire alarm panel in the Secondary Clarifier Building.
 - (iv) Verify the operation of all fire protection systems and provide all necessary inspection certificates.
 - (v) Demonstrate the operation of the Modbus TCP interface. Provide all equipment and software as required. Note that the connection of the Modbus TCP interface to the SEWPCC process control system is future work.

E3.3 Fire Alarm Training

- (a) Provide one training session for City electrical and instrumentation maintenance personnel, at the SEWPCC facility.
- (b) Duration of training to be three (3) hours long, including one fifteen minute coffee break.
- (c) Provide training session manuals that include the contents of the training session. These manuals must be prepared specifically for this project and include only relevant content.
- (d) Instruct City personnel on theory, construction, installation, operation and maintenance of the fire alarm system.
- (e) Training instructor is to be provided by a knowledgeable, qualified service technician or factory representative. The Contract Administrator reserves the right to reject the instructor based upon inadequate qualifications.
- (f) The Contract Administrator reserves the right to withhold payment of all or part of the associated payment, in the event that the quality of training provided is not of excellent quality.

E3.4 SEWPCC UPS Upgrades

E3.4.1 Administration Building

- (a) Phase 1
 - (i) Install temporary feeder cable for PNL-2X from XFMR-2X. SCHEDULE THE SHUTDOWN WITH THE CONTRACT ADMINISTRATOR.
 - (ii) Remove existing Toshiba 4000 Series UPS, splitter and disconnect switches in Administration Building.
- (b) Phase 2
 - (i) Supply and install UPS-M1 and maintenance bypass cabinet MTS-M1 in Administration Building.
 - (ii) Supply and install JBA-UPS-M1 and connect to UPS-M1. Supply and install wiring and conduit for connection to DCS.
 - (iii) Test UPS-M1 and associated electrical work.
 - (iv) Re-feed PNL-2X from MTS-M1 and remove existing wiring and conduit. SCHEDULE THE SHUTDOWN WITH THE CONTRACT ADMINISTRATOR.
 - (v) Coordinate with the City for removal of temporary small UPS units in Administration Building, which will be removed by the City.
 - (vi) Remove XFMR-2X and temporary feeder cable.

E3.4.2 Grit Building

- (a) Phase 1
 - (i) Supply and install UPS-G1 and maintenance bypass cabinet MTS-G1 in the Grit Electrical Room.
 - (ii) Supply and install JBA-UPS-G1 and connect to UPS-G1. Supply and install wiring and conduit for connection to the DCS.
 - (iii) Test UPS-G1 and associated electrical work.
 - (iv) Supply and install PNL-G10, splitter, and breakers in the Grit Electrical Room.
 - (v) Install new receptacles and connect loads to PNL-G10 as shown on the drawings. SCHEDULE THE WORK WITH THE CONTRACT ADMINISTRATOR.
 - (vi) Coordinate with the City for removal of temporary small UPS units in the Grit Building, which will be removed by the City.
- (b) Phase 2
 - (i) Rename XFMR-8G to XFMR-G9 and re-feed from PNL-3G. Remove existing wiring and conduit. SCHEDULE THE WORK WITH THE CONTRACT ADMINISTRATOR.

- (ii) Re-feed PCU-SA from PNL-G9 and PNL-G10. SCHEDULE THE WORK WITH THE CONTRACT ADMINISTRATOR.

E3.4.3 Primary Clarifier Area

- (a) Part of Grit Building Phase 1
 - (i) Remove XFMR-6P and associated wiring and conduit. Re-feed PNL-6P from CB-PNL-6P. SCHEDULE THE WORK WITH THE CONTRACT ADMINISTRATOR.

E3.4.4 Secondary Clarifier Area

- (a) Phase 1
 - (i) Install and wire new receptacles as shown on drawings.
 - (ii) Move loads indicated on drawings from PNL-7S to PNL-6S.
- (b) Phase 2
 - (i) Remove existing UPS-7S and associated wiring.
 - (ii) Supply and install UPS-S1 and maintenance bypass cabinet MTS-S1 in the Secondary Clarifier Electrical Room.
 - (iii) Supply and install JBA-UPS-S1 and connect to UPS-S1. Supply and install wiring and conduit for connection to the DCS.
 - (iv) Test UPS-S1 and associated electrical work.
 - (v) Re-feed PNL-6S from MTS-S1 and remove existing wiring and conduit. SCHEDULE THE WORK WITH THE CONTRACT ADMINISTRATOR.
 - (vi) Coordinate with the City for removal of temporary small UPS unit in the Secondary Lab, which will be removed by the City.
- (c) Phase 3
 - (i) Rename XFMR-6S to XFMR-7S and re-feed from PNL-3S. Remove existing wiring and conduit.
 - (ii) Re-feed PNL-7S from XFMR-7S.
 - (iii) Re-feed PCU-SD/SE/SF/SG from PNL-S6 and PNL-S7. SCHEDULE THE WORK WITH THE CONTRACT ADMINISTRATOR.

E3.5 NEWPCC UPS Supply

- (a) Supply and deliver four UPS units as per Section 26 33 53.
- (b) Installation and testing for the NEWPCC UPS units are not required.
- (c) Delivery to be to:
 - Attention Marc Goovaerts
 - NEWPCC
 - 2230 Main Street
 - Winnipeg, MB
- (d) Provide a separate O&M Manual for the NEWPCC UPS units.

E3.6 UPS Training

- (a) Provide one training session for City electrical and instrumentation maintenance personnel, at the SEWPCC facility.
- (b) Duration of training to be two (2) hours long, including one fifteen minute coffee break.
- (c) Provide training session manuals that include the contents of the training session. These manuals must be prepared specifically for this project and include only relevant content.
- (d) Instruct City personnel on theory, construction, installation, operation and maintenance of the UPS system

- (e) Training instructor is to be provided by a knowledgeable, qualified service technician or factory representative. The Contract Administrator reserves the right to reject the instructor based upon inadequate qualifications.
- (f) The Contract Administrator reserves the right to withhold payment of all or part of the associated payment, in the event that the quality of training provided is not of excellent quality.

E3.7 Power Meter Upgrades

- (a) Replace four (4) meters in the Grit Electrical Room MCCs. Connect the new meters to the Modbus network. Program / configure the meters to communicate with the DCS. Test and commission the operation of the meters. The following MCCs are included:
 - (i) MCC-1G.
 - (ii) MCC-2G.
 - (iii) MCC-3G.
 - (iv) MCC-4G.
- (b) Provide a Department of Labour inspection for all MCC modifications, and supply a certificate approving the modifications made.

E3.8 Gas Detection Upgrades

- (a) Demolish all existing gas detection units.
- (b) Provide a complete installation of the new gas detection sensors, transmitters, junction boxes, horns and strobes, and all associated systems.
- (c) Configure, test, and calibrate each sensor.
- (d) Complete the work so as to minimize the time that gas detection systems are not operational.
- (e) Completely test all Modbus communication links and verify correct operation.

E3.8.1 Wet Well and Dry Well Gas Detection

- (a) Supply, install and configure GDC-G1 gas detection controller and associated junction box in the Grit Motor Room. Supply and install associated gas detection equipment including:
 - (i) Methane detector, H₂S detector, horn and strobe in Wet Well area. Strobe in Wet Well Foyer.
 - (ii) Remote calibration stations for methane detector.
 - (iii) Sample panel ADP-G2 in the Grit Motor Room.
 - (iv) H₂S detector and O₂ detector in Dry Well.
- (b) Run stainless steel tubing from ADP-G2 to Wet Well to provide sample gas connections for ADP-G2.
- (c) Hang flexible tubing down into each Wet Well and connect to stainless steel tubing
- (d) Re-use wiring and conduit from GDC-G1 to FDP-G for hardwired alarms.
- (e) Supply and install new wiring and conduit from GDC-G1 to NP-G1 for Modbus RTU communications.

E3.8.2 Screen Room, Truck Bay and Grit Tank Room Gas Detection

- (a) Supply, install and configure GDC-G2 gas detection controller and the associated junction box in hallway G137. Supply and install associated gas detection equipment including:
 - (i) Methane detector, hydrocarbon detector, two H₂S detectors, two horns and two strobes in Screen Room and Truck Bay.
 - (ii) Methane detector, H₂S detector, horn and strobe in Grit Tank Room.
 - (iii) Remote calibration stations for methane detectors.

- (b) Re-use wiring and conduit from GDC-G2 to FDP-G for hardwired alarms.
- (c) Supply and install new wiring and conduit from GDC-G2 to NP-G1 for Modbus RTU communications.

E3.8.3 Standby Generator Room and Boiler Room Gas Detection

- (a) Supply, install and configure GDC-G3 gas detection controller and the associated junction box in Standby Generator Building. Supply and install associated gas detection equipment including:
 - (i) Methane detector, horn and strobe in Generator Room.
 - (ii) Methane detector, horn and strobe in Boiler Room.
 - (iii) Remote calibration stations for methane detectors.
- (b) Re-use wiring and conduit from GCP-6 to FDP-G for hardwired alarms. Install new wiring and conduit from GDC-G3 to GCP-6.
- (c) Supply and install new wiring and conduit from GDC-G3 to GDC-G2 for Modbus RTU communications.

E3.8.4 Secondary Area Gas Detection

- (a) Supply and install NDV-S1 (RS232/RS485 converter) in FDP-S. Configure new port on existing Modicon BM85 Bridge Multiplexer to communicate with GDC-S1. Completely test all Modbus communication links and verify correct operation.
- (b) Supply, install and configure GDC-S1 gas detection controller and associated junction box in Secondary Lab. Supply and install associated gas detection equipment including:
 - (i) Methane detector, H₂S detector, horn and strobe in Scrubber Room.
 - (ii) H₂S detector, horn and strobe in Truck Bay.
 - (iii) Remote calibration station for methane detector.
- (c) Re-use wiring and conduit from GDC-S1 to FDP-S for hardwired alarms.
- (d) Supply and install new wiring and conduit from GDC-S1 to NDV-S1 in FDP-S for Modbus RTU communications.

E3.9 Gas Detection Training

- (a) Provide one training session for City electrical and instrumentation maintenance personnel, at the SEWPCC facility.
- (b) Duration of training to be two and a half (2.5) hours long, including one fifteen minute coffee break.
- (c) Provide training session manuals that include the contents of the training session. These manuals must be prepared specifically for this project and include only relevant content.
- (d) Instruct City personnel on theory, construction, installation, operation and maintenance of the gas detection system
- (e) Training instructor is to be provided by a knowledgeable, qualified service technician or factory representative. The Contract Administrator reserves the right to reject the instructor based upon inadequate qualifications.
- (f) The Contract Administrator reserves the right to withhold payment of all or part of the associated payment, in the event that the quality of training provided is not of excellent quality.

E3.10 Repair the buried 75 mm (3") conduits from the Secondary Clarifier area to the UV Building. The conduits are identified as Conduit 3 & 4 on drawing SEP-2436.

- (a) Inspect the conduits.
 - (i) Utilize a conduit/pipe video camera snake from both ends of each of the conduit. Record video and lengths to obstructions. Mark locations of conduit collapse utilizing accurate means to avoid excess excavation.

- (ii) Identify location of the conduit failure to the Contract Administrator. Authorization for repair must be received prior to excavation.
- (b) Excavate the conduits, as approved by the Contract Administrator.
 - (i) Excavate conduits utilizing hydro-vac excavation. Do not disturb the existing cables or conduits. Care must be taken as the cables will be powered.
- (c) Repair the conduits, as approved by the Contract Administrator.
 - (i) Repair conduits by replacing sections with new PVC conduit.
 - (ii) Cover and fill the trench as per the drawings.
- (d) The base payment identified in Form B, Item 10 will cover all inspection, and excavation and replacement/repair of up to 3 meters of each of conduits 3 and 4, as identified on drawing SEP-2436. Include in the price the cost to repair and replace a 3m length of both conduits.
- (e) Should additional conduit repair be required, advise the Contract Administrator for a determination of the length to be repaired. Payment for additional repair of conduits will be made utilizing the rates in Form B, Items 14 and 15.

E3.11 Essential Lighting and Exits

- (a) Install additional essential lighting in the SEWPCC facility. Supply new fixtures or modify existing fixture wiring as per the drawings.
- (b) Supply and install additional exit lights in the SEWPCC facility as per the drawings.
- (c) Supply and install exit signage ("Running Person" and "Not An Exit" signs) in the SEWPCC facility as per the drawings.

E3.12 DCS Programming

- (a) Provide DCS Programming Services associated with the upgrades in this Bid Opportunity. The required DCS programming modifications are described in the Functional Requirements Specification (112577-0106-48ER-0001). The software modifications are to include the BRC (Bridge Controller), HPG 800 (Harmony Gateway), and HMI (PCV 5.4) modifications.
 - (i) The City plans to upgrade the HMI to PCV 5.5b within the timeframe of this project. Allow for either PCV 5.4 or 5.5b HMI programming.
 - (ii) The City will supply the existing software configuration to the Subcontractor responsible for the programming.
- (b) PCU SA is nearing processing capacity. Provide programming to optimize the software configuration logic to reduce the number of logic blocks. Implement as follows:
 - (i) Identify potential optimizations for all logic in PCU SA. Circle areas for optimization, and submit to the Contract Administrator for review.
 - (ii) The Contract Administrator will accept, reject, or identify additional areas for optimization.
 - (iii) Modify the logic to optimize, as approved and directed by the Contract Administrator.
 - (iv) Take care in ensuring that the new software configuration is functionally equivalent to the old software configuration. The software is critical to the operation of the facility.
- (c) Provide all required software licences to perform the work.
- (d) Submit PDF printouts of the completed programming logic for review. Make all changes as requested by the Contract Administrator.
- (e) Simulate and test the logic changes prior to loading at site.
- (f) Include costs of all travel to site for commissioning.
- (g) The following companies are approved to perform the DCS Programming:
 - (i) ABB
 - (ii) Or approved equal in accordance with B6.

E3.13 DCS Commissioning – On Site

- (a) Provide on-site DCS commissioning services.
- (b) Make changes as requested by the Contract Administrator.
- (c) The Contract Administrator reserves the right to only pay for hours actually expended on commissioning. The Contractor is responsible for costs associated with:
 - (i) On-site programming that is to be performed as part of E3.12.
 - (ii) Time utilized on-site by the DCS programmer / commissioning person due to the Contractor's error in scheduling or significant installation issues that prohibit the commissioning process from proceeding.
- (d) The following companies are approved to perform the DCS Commissioning:
 - (i) ABB
 - (ii) Or approved equal in accordance with B6.

E4. SPECIFIC REQUIREMENTS

E4.1 The Contractor shall provide all materials, fabrications, finishes, temporary installation, documentation, shop drawings, means and methods necessary to fully install all of the new works identified on the contract drawings in a safe manner, fit-for-purpose intended. The description of work provided herein is intended to be a general description of work activities, and is not intended to be an exhaustive listing of all tasks necessary to complete the scope of installations given on the drawings or specifications.

E4.2 Exercise care where cutting holes in existing concrete elements so as not to damage existing reinforcing.

- (a) Follow the requirements outlined on drawing 1-0102A-E0008
- (b) For reinforced concrete floors, locate existing reinforcing utilizing a reinforcing bar locator and mark out on the surface of the concrete prior to cutting.
 - (i) Mark the location of the proposed hole and all adjacent rebar.
 - (ii) Obtain approval from the Contract Administrator prior to cutting.

E4.3 The Contractor shall exercise care where installing anchors into existing concrete elements so as not to damage existing reinforcing. All anchors shall be installed utilizing carbide tip drill bits. The existing reinforcing shall be located utilizing a reinforcing bar locator and marked out on the surface of the concrete. The drill holes shall be advanced to the required depth for installation of the anchors. Should reinforcement be encountered while drilling, terminate the hole and reposition to clear the reinforcement. Do not use core bits that can easily intercept and damage/cut the reinforcing during drilling.

E5. ADDITIONAL WORK

E5.1 Additional work may be necessitated due to unforeseen circumstances that may arise during the course of the project due to:

- (a) Additions to the scope of Work by the Contract Administrator, beyond that defined herein.
- (b) Other issues that occur on site, which require significant Contractor time to address.

E5.2 Additional services will not be initiated for:

- (a) Reasons of lack of performance or errors in execution.
- (b) Scheduling changes initiated by the City, where at least 24 hours notice is given prior to the Contractor's scheduled time to be on site.

E5.3 Should it be determined that additional material or services are required, the Contract Administrator shall approve the work, prior to commencement of the additional work.

- E5.4 Additional labour will be reimbursed at the rate specified on Form B: Item 14. The rate will not be adjusted for Subcontractors or individuals with specialized skills, without specific approval of the Contract Administrator.
- E5.5 Additional material will be reimbursed by the actual base cost of the material, multiplied by a mark-up factor of 1.15, as indicated on Form B: Item 15.
- (a) The base cost is to be the wholesale cost of the material, regardless of the Contractor or Subcontractor supplying the material. In the event that a Subcontractor(s) is/are supplying the material, the Contractor is responsible for coordinating the split of the 1.15 mark-up between the Contractor and Subcontractor(s).
- E5.6 The Contract Administrator may also request a written quotation for the additional work. For any work, where a written quotation is provided, and subsequently authorized, the valuation of the work shall be as per the quotation, regardless of the actual cost to the Contractor.
- (a) Quotations shall indicate the labour hours and base cost of material, as well as mark-up factors.
- (b) Mark-up factors shall correspond to Form B Items 14 and 15, unless specifically authorized by the Contract Administrator.

E6. LOCATION AND ACCESS TO FACILITIES

- E6.1 The Work specified hereinafter will take place at the SEWPCC, located at 100 Ed Spencer Drive Winnipeg, MB, R2N 4G3.
- E6.2 Access to the facility will be between 7:45 am and 3:45 pm, Monday to Friday.
- E6.3 Inform the Contract Administrator at least 24 hours in advance where the Contractor intends to carry out Work outside normal working hours. Do not initiate work outside normal working hours without the Contract Administrator's approval except when the Work is unavoidable or absolutely necessary for:
- (a) Preventing injury to any person or saving the life of any person; or
- (b) Preventing damage to property where the circumstances placing the property in danger could not reasonably have been foreseen and where the immediate carrying out of such Work is necessary in order to prevent damage to that property; in which case the Contractor shall immediately advise the Contract Administrator in writing that such Work outside the normal working hours is necessary and of the reasons for this. He shall also state the nature and extent of Work to be carried out.
- E6.4 Coordinate activities with City personnel and any other contractors that may be working concurrently on the Site.
- E6.5 Additional details and requirements regarding facility access will be provided to the Contractor. The Contractor must comply with all City policies set forth in this document, and detailed instructions provided after the Work is awarded.

E7. FACILITY OPERATION REQUIREMENTS

- E7.1 The facilities related to the Work are critical to the treatment of wastewater for the City of Winnipeg. Under no condition shall equipment or power be shut down without prior permission of the Contract Administrator. Similarly, coordination and approval are required prior to returning the equipment back into service. The Contractor is responsible for preparing shutdown schedules in conjunction with the Contract Administrator and the City. The Contractor shall work within the schedule and any procedures given, and shall advise the Contract Administrator of any issues or concerns, prior to performing the Work.
- E7.2 The Work shall be scheduled and performed such that there is minimal disturbance to SEWPCC plant operation.

- E7.3 Hot work shall end no less than one (1) hour prior to end of shift and area inspected prior to daily departure by the Contractor's site supervisor and / or tradesman.
- E7.4 Some of the work will require shutdown of equipment. All equipment shutdown requirements require 24-48 hours notice. Coordinate the work to minimize the amount of time that equipment shutdown will be required. In addition, the Contractor shall be flexible to work around specific City operational requirements. Specific requirements that the Contractor is required to adhere to include:
- (a) All equipment will be isolated by City personnel.
 - (b) At most, two raw sewage pumps may be shut down at one time. However, pumps may only be shut down during the day, and during dry weather. During rainfall events, the Contractor must ensure that all pumps are available for operation. Provide temporary barriers as required to maintain a safe working environment.
 - (i) Ensure all pumps are ready for operation by 3:40 pm each day, except as scheduled with the Contract Administrator.
 - (c) Any electrical shutdowns affecting more than one branch circuit must be less than two hours in duration. Any longer shutdown which may be required must be coordinated with the Contract Administrator.
 - (d) In case of accidental equipment shutdown, the Contractor must notify SEWPCC staff immediately for their corrective action. Under no circumstances shall the Contractor start or restart equipment.
 - (e) Other process and safety requirements, as identified by the City or Contract Administrator.
- E7.5 It is possible that equipment failure within the SEWPCC, or another unforeseen condition, could cause an event where construction must be stopped immediately and equipment brought back online. The City, upon their sole discretion, may delay or stop the Work at any time, require the Contractor to return all or equipment into service as soon as possible, and reschedule the Work.