



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 331-2016

COCKBURN FLOOD AND WASTEWATER PUMPING STATION – 2016 UPGRADES

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	4
Form G1: Bid Bond and Agreement to Bond	5
Form G2: Irrevocable Standby Letter of Credit and Undertaking	7

PART B - BIDDING PROCEDURES

B1. Contract Title	1
B2. Submission Deadline	1
B3. Site Investigation	1
B4. Enquiries	1
B5. Confidentiality	1
B6. Addenda	2
B7. Substitutes	2
B8. Bid Components	3
B9. Bid	4
B10. Prices	4
B11. Disclosure	5
B12. Qualification	5
B13. Bid Security	6
B14. Opening of Bids and Release of Information	6
B15. Irrevocable Bid	7
B16. Withdrawal of Bids	7
B17. Evaluation of Bids	7
B18. Award of Contract	8

PART C - GENERAL CONDITIONS

C0. General Conditions	1
------------------------	---

PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Extra Work Allowance	1
D4. Definitions	2
D5. Contract Administrator	2
D6. Contractor's Supervisor	2
D7. Ownership of Information, Confidentiality and Non Disclosure	2
D8. Notices	3
D9. Furnishing of Documents	3

Submissions

D10. Authority to Carry on Business	3
D11. Safe Work Plan	3
D12. Insurance	4
D13. Performance Security	4
D14. Subcontractor List	5
D15. Detailed Work Schedule	5

Schedule of Work

D16. Commencement	5
D17. Critical Stages	6
D18. Substantial Performance	6
D19. Total Performance	6
D20. Liquidated Damages	6
D21. Scheduled Maintenance	6

Control of Work

D22. Job Meetings	7
D23. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	7
D24. The Workplace Safety and Health Act (Manitoba) – Qualifications	7

Measurement and Payment

D25. Payment	7
--------------	---

Warranty

D26. Warranty	7
Form H1: Performance Bond	8
Form H2: Irrevocable Standby Letter of Credit	10
Form J: Subcontractor List	12

PART E - SPECIFICATIONS

General

E1. Applicable Specifications and Drawings	1
--	---

General Requirements

E2. Miscellaneous	4
E3. Hazardous Materials	5
E4. Equipment Supplied by Others	5
E5. Equipment and Materials	5
E6. Security	5
E7. Salvage	5
E8. Dangerous Work Conditions	6
E9. Waterway By-Law	6
E10. Protection of Existing Trees	7
E11. Temporary Use of City Equipment	7
E12. Existing Pumping Station Operation During Construction	7
E13. Temporary Shutdown of the Wastewater Pumping (Lift) Station	8
E14. Work Plan	9
E15. Mobilization and Demobilization	9
E16. Landscaping	10
E17. Structural and Architectural Work	10
E18. Mechanical Work	11
E19. Electrical Work	11
E20. Automation Work	13
E21. Additional Work	15
E22. Expedited Shop Drawings	15

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 COCKBURN FLOOD AND WASTEWATER PUMPING STATION – 2016 UPGRADES

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, May 31, 2016.

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 May 18, 2016 to provide Bidders access to the Site.

(a) Bidders must wear CSA approved safety footwear and a hard hat while at the wastewater pumping facility.

B3.2 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D5.1.

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, 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 B17.
- 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.

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 B17.1(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), prices on Form B: Prices shall not include the Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.
- 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. DISCLOSURE

B11.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B11.2 The Persons are:

- (a) N/A

B12. QUALIFICATION

B12.1 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.

B12.2 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>

B12.3 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);

B12.4 Further to B12.3(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/>).

B12.5 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.

B12.6 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.

B13. BID SECURITY

B13.1 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.

B13.1.1 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.

B13.1.2 All signatures on bid securities shall be original.

B13.1.3 The Bidder shall sign the Bid Bond.

B13.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.

B13.2 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.

B13.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B13.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

B13.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.

B13.3 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.

B14. OPENING OF BIDS AND RELEASE OF INFORMATION

B14.1 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.

B14.1.1 Bidders or their representatives may attend.

B14.2 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>

B14.3 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>

B14.4 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.

B15. IRREVOCABLE BID

B15.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.

B15.2 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.

B16. WITHDRAWAL OF BIDS

B16.1 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.

B16.1.1 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.

B16.1.2 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.

B16.1.3 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 B16.1.3(b), declare the Bid withdrawn.

B16.2 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 B15.2 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.

B17. EVALUATION OF BIDS

B17.1 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 B12 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B7.

- B17.2 Further to B17.1(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.
- B17.3 Further to B17.1(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.
- B17.4 Further to B17.1(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.
- B17.4.1 Further to B17.1(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.

B18. AWARD OF CONTRACT

- B18.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B18.2 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.
- B18.2.1 Without limiting the generality of B18.2, 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.
- B18.3 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 B17.
- B18.3.1 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
- 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 demolition of the existing HVAC and electrical equipment, and the installation of new electrical service, electrical distribution, automation, and HVAC equipment.

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

- (a) Removal of the existing 4160:600V service transformers in the transformer vault,
- (b) Demolition of the existing 600V distribution equipment and pump motor starters,
- (c) Demolition of the existing 120/240V distribution equipment including lighting, receptacles, and associated conduit and cabling.
- (d) Demolition of the existing automation control panel,
- (e) Coordination with Manitoba Hydro to provide a new 4160V service to the station,
- (f) Coordination with Manitoba Hydro to provide a temporary 600V service to the station to power the sanitary lift station pumps,
- (g) Construction of a new concrete pad outside the station for the new electrical service equipment.
- (h) Installation of a new outdoor 5kV fusible disconnect and metering compartment,
- (i) Installation of a new 4160:600V service transformer and 600V CSTE,
- (j) Conversion of the existing transformer vault to an electrical room, complete with new insulation, vapor barrier, plywood surfaces and paint,
- (k) Installation of new 600V distribution equipment and HVAC in the new electrical room,
- (l) Installation of a new automation control panel in the electrical room,
- (m) Connection of the new automation control panel to existing field instruments,
- (n) Installation of new field instruments where indicated on the drawings,
- (o) Installation of new insulation, vapour barrier, plywood surfaces and paint on the main floor of the station,
- (p) Installation of new HVAC equipment for the main area of the station, complete with a supply fan, duct heater, and actuated dampers,
- (q) Installation of a new ceiling-level insulated cover for the roof hatch to prevent heat loss through the roof hatch,

D3. EXTRA WORK ALLOWANCE

D3.1 Description:

- (a) The extra work allowance is intended to address additional upgrade work authorized by the Contract Administrator that may be required due to uncertainties involved in working in an older facility, some areas of which will not be visible until project work is underway.
- (b) The City reserves the right to delete any or all of the Cash Allowance from the Contract if the Work intended to be covered by the Cash Allowance is not required, or if the Works intended are found to be more extensive than the provisional Cash Allowance.

D3.2 Method of Measurement and Basis of Payment:

- (a) Cost of repairs shall be evaluated by the methods outlined in C7.4 and a Change Order prepared by the Contract Administrator. Cost of the Change Order will be paid on the Progress Estimate and deducted from the Cash allowance. If the valuation of the authorized work exceeds the Value of the Cash Allowance, the Contract Value will be adjusted by the shortfall.

D4. DEFINITIONS

D4.1 When used in this Bid Opportunity:

- (a) "**MCC**" means Motor Control Centre;
- (b) "**RTU**" means Remote Terminal Unit;
- (c) "**PLC**" means Programmable Logic Controller;
- (d) "**HVAC**" means Heating, Ventilation, and Air Conditioning.

D5. CONTRACT ADMINISTRATOR

D5.1 The Contract Administrator is SNC-Lavalin Inc., represented by:

Ian Parkinson, P. Eng
Manager, Water Treatment

Telephone No. 204 786-8080 ext. 274

Facsimile No. 204 786-7934

D5.2 At the pre-construction meeting, Mr. Parkinson will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D5.3 Bids Submissions must be submitted to the address in B8.8.

D6. CONTRACTOR'S SUPERVISOR

D6.1 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.

D7. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

D7.1 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.

D7.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.

D7.3 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.

D7.4 A Contractor who violates any provision of D7 may be determined to be in breach of Contract.

D8. NOTICES

- D8.1 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.
- D8.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D8.3, D8.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the facsimile number identified in D5.1.
- D8.3 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
- D8.4 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

D8.5 Bids Submissions must be submitted to the address in B8.8

D9. FURNISHING OF DOCUMENTS

- D9.1 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

D10. AUTHORITY TO CARRY ON BUSINESS

- D10.1 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.

D11. SAFE WORK PLAN

- D11.1 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.
- D11.2 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>
- D11.3 Notwithstanding B12.4 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.

D12. INSURANCE

D12.1 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) if applicable, 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 \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence.
- (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.

D12.2 Deductibles shall be borne by the Contractor.

D12.3 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.

D12.4 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.

D13. PERFORMANCE SECURITY

D13.1 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.

D13.1.1 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.

D13.2 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.

D14. SUBCONTRACTOR LIST

D14.1 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.

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;
- 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:

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.

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 D10;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D11;
 - (iv) evidence of the insurance specified in D12;
 - (v) the performance security specified in D13;
 - (vi) the Subcontractor list specified in D14; and
 - (vii) 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 twenty (20) Working Days of receipt of the letter of intent.

D16.4 The City intends to award this Contract by June 17, 2016.

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. CRITICAL STAGES

D17.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

- (a) The 4160V service equipment, 600V distribution equipment, and the new automation control panel must be put into service by December 16, 2016.
- (b) The flood pumps must be put back into service by January 27, 2017.

D18. SUBSTANTIAL PERFORMANCE

D18.1 The Contractor shall achieve Substantial Performance by January 27, 2017.

D18.2 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.

D18.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D19. TOTAL PERFORMANCE

D19.1 The Contractor shall achieve Total Performance by February 28, 2017.

D19.2 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.

D19.3 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.

D20. LIQUIDATED DAMAGES

D20.1 If the Contractor fails to achieve Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Calendar Day for each and every Calendar Day following the days fixed herein for same during which such failure continues:

- (a) Critical Stages – One thousand five hundred dollars (\$1500);
- (b) Substantial Performance – One thousand dollars (\$1000);
- (c) Total Performance – Three hundred dollars (\$300).

D20.2 The amounts specified for liquidated damages in D20.1 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.

D20.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D21. SCHEDULED MAINTENANCE

D21.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

- (a) Landscape Maintenance as specified in CW 3510 of the City of Winnipeg's Standard Construction Specifications.

D21.2 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

D22. JOB MEETINGS

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

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

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

D23.1 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).

D24. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

D24.1 Further to B12.4, 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 B12.4.

MEASUREMENT AND PAYMENT

D25. PAYMENT

D25.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D26. WARRANTY

D26.1 Warranty is as stated in C13.

FORM H1: PERFORMANCE BOND
(See D13)

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. 331-2016

COCKBURN FLOOD AND WASTEWATER PUMPING STATION – 2016 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 D13)

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 331-2016

COCKBURN FLOOD AND WASTEWATER PUMPING STATION – 2016 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 (2007 Revision), International Chamber of Commerce Publication Number 600.

(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 45 00	Quality Control
01 51 00	Temporary Utilities
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
03 05 10	Cast-in-Place – Concrete
03 20 00	Concrete Reinforcing
05 50 00	Metal Fabrications
07 21 13	Board Insulation
07 26 00	Vapour Retarders
07 92 10	Joint Sealing
09 91 23	Painting
10 44 20	Fire Extinguishers
23 05 00	Common Work Results for HVAC
23 05 54	Mechanical Identification
23 05 93	Testing, Adjusting and Balancing for HVAC
23 07 13	Duct Insulation
23 09 33	Electric and Electronic Control System for HVAC
23 31 14	Metal Ducts - Low Pressure to 500 Pa
23 33 00	Air Duct Accessories
23 33 15	Dampers - Operating
23 34 00	HVAC Fans
23 37 13	Louvers
23 37 14	Diffusers, Registers and Grilles
23 41 00	Particulate Air Filtration
23 55 01	Duct Heaters
23 82 40	Unit Heaters - Electric
26 05 01	Common Work Results - Electrical
26 05 14	Power Cable and Overhead Conductors (1001 V)
26 05 21	Wires and Cables (0-1000 V)
26 05 27	Grounding - Primary
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 Fittings
26 05 36	Cable Trays for Electrical Systems
26 05 44	Installation of Cables in Trenches and in Ducts
26 08 05	Acceptance Testing
26 12 17	Dry Type Transformers Up To 600 V Primary
26 12 19	Pad Mounted, Liquid Filled, Medium Voltage Transformers
26 24 01	Service Equipment
26 24 17	Panelboards Breaker Type
26 24 19	Motor Control Centres
26 27 26	Wiring Devices
26 28 21	Moulded Case Circuit Breakers
26 29 10	Motor Starters to 600 V
26 50 00	Lighting
26 52 01	Unit Equipment for Emergency Lighting
27 30 00	Voice Communications
31 23 10	Excavating, Trenching and Backfilling
40 05 01	Common Work Results - Automation
40 80 08	Factory Acceptance Test
40 80 11	Automation Commissioning
40 90 01	Field Pushbuttons, Switches, and Indicators
40 91 00	Automation - Process Measurement Devices
40 92 00	Automation - Primary Control Devices
40 94 43	Programmable Logic Controllers (PLCs)
40 95 13	Control Panels
40 99 90	Maintenance and Support

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
1-0127A-D0001	Cover Sheet
1-0127A-A0001-001	Panel Layout, Control Panel CP-A81
1-0127A-A0001-002	Panel Layout, Control Panel CP-A81
1-0127A-A0002	Power Distribution, Control Panel CP-A81
1-0127A-A0003	RTU I/O Wiring Diagram, Control Panel CP-A81, Discrete Inputs I1-I16
1-0127A-A0004	RTU I/O Wiring Diagram, Control Panel CP-A81, Discrete Inputs I17-I32
1-0127A-A0005	RTU I/O Wiring Diagram, Control Panel CP-A81, Discrete Inputs I43-I48
1-0127A-A0006	RTU I/O Wiring Diagram, Control Panel CP-A81, Discrete Inputs I49-I64
1-0127A-A0007	RTU I/O Wiring Diagram, Control Panel CP-A81, Discrete Inputs I65-I80
1-0127A-A0008	RTU I/O Wiring Diagram, Control Panel CP-A81, Discrete Inputs I81-I96
1-0127A-A0009	RTU I/O Wiring Diagram, Control Panel CP-A81, Discrete Outputs Q1-Q16
1-0127A-A0010	RTU I/O Wiring Diagram, Control Panel CP-A81, Analog Inputs AI1-AI8
1-0127A-A0011	RTU I/O Wiring Diagram, Control Panel CP-A81, Analog Inputs AI9-AI13
1-0127A-A0012	RTU I/O Wiring Diagram, Control Panel CP-A81, Analog Inputs AI14-AI21
1-0127A-A0013	RTU I/O Wiring Diagram, Control Panel CP-A81, Analog Outputs AQ1-AQ4
1-0127A-A0014	Control Schematic, Control Panel CP-A81, Lift Pump Control
1-0127A-A0015	Control Schematic, Control Panel CP-A81, Flood Pump Control
1-0127A-A0016	Annunciator Panel, Control Panel CP-A81, Lamp Layout
1-0127A-A0017	Loop Diagram, MCC-A72 600 Volt Power Status, ESL-A721
1-0127A-A0018	Loop Diagram, Electrical Room High/Low Temperature, TS-A653
1-0127A-A0019	Loop Diagram, MCC-A71 TVSS, XS-A712
1-0127A-A0020	Loop Diagram, MCC-A72 TVSS, XS-A722
1-0127A-A0021	Loop Diagram, Air Filter Plugged Switch, PDSH-A610
1-0127A-A0022	Junction Box Layout, Intrinsically Safe Junction Box JBA-A83
1-0127A-A0023	Connection Diagram, CSO Panel JBA-S82
1-0127A-A0024	Panel Layout, Ventilation Panel JBA-A84
1-0127A-A0025	Power Distribution, Ventilation Panel JBA-A84
1-0127A-A0026	Loop Diagram, Station Occupancy Switch, HS-A600
1-0127A-A0027	Loop Diagram, HVAC Damper Control, XV-A601-1, XV-A601-2, XV-A601-3
1-0127A-A0028	Loop Diagram, Room Differential Pressure Transmitter, PDT-A601
1-0127A-A0029	Loop Diagram, HCE-A61 Heater Control, TY-A610

1-0127A-A0030	Loop Diagram, Electrical Room Supply Fan, SF-A65
1-0127A-A0031	Loop Diagram, Transformer XFMR-A70 High Temperature, TSH-A701
1-0127A-A0032	Loop Diagram, Transformer XFMR-A70 Low Oil Level, LSL-A702
1-0127A-A0033	Network Diagram
1-0127F-A0001	Loop Diagram, Seal Water Loss, PSL-F526
1-0127F-A0002	Loop Diagram, Flood Station Hi Wet Well, LSH-F500
1-0127F-A0003	Loop Diagram, Flood Station Low Instrument Air, PSL-F524
1-0127F-A0004	Loop Diagram, Main Floor High/Low Temperature, TS-F622
1-0127F-A0005	Loop Diagram, Flood Wet Well Level Transmitter, LT-F500
1-0127F-A0006	Loop Diagram, Flood Pump P-F01 Seal Water Flow, FSL-F011
1-0127F-A0007	Loop Diagram, Flood Pump P-F02 Seal Water Flow, FSL-F021
1-0127F-A0008	Loop Diagram, Flood Pump P-F03 Seal Water Flow, FSL-F031
1-0127L-A0001	Loop Diagram, Sanitary High Wet Well, LSH-L500
1-0127L-A0002	Loop Diagram, Sanitary Flood Switch, LSH-L523
1-0127L-A0003	Loop Diagram, Sanitary Low Instrument Air, PSL-L524
1-0127L-A0004	Loop Diagram, Sanitary Low Temperature, TSL-L525
1-0127L-A0005	Loop Diagram, Comminutor Chamber Flood Switch, LSH-L481
1-0127L-A0006	Loop Diagram, Wet Well Level Transmitter "A", LIT-L500-A
1-0127L-A0007	Loop Diagram, Wet Well Level Transmitter "B", LIT-L500-B (Future)
1-0127L-A0008	Loop Diagram, P-L01 and P-L02 Flow Meter, FIT-L101
1-0127S-A0001	Loop Diagram, Weir Overflow, LSH-S529
1-1027A-E0001	Electrical Single Line Diagram, Demolition
1-1027A-E0002	Electrical Single Line Diagram
1-1027A-E0003	Electrical Site Plan
1-1027A-E0004	Electrical and Lighting Plan Layout, Main Floor and Comminutor Motor Room, Demolition
1-1027A-E0005	Electrical and Lighting Plan Layout, Main Floor and Comminutor Motor Room, New Work
1-1027A-E0006	Electrical and Lighting Plan Layout, Flood Pump and Lift Pump Rooms
1-1027A-E0007	Electrical and Lighting Plan Layout, Wastewater Lift Motor Room
1-1027A-E0008	Hazardous Location Plan
1-0127A-E0009	Electrical Schedules
1-1027A-E0010	Grounding Installation Details
1-1027A-E0011	MCC Elevation and Details, MCC-A71
1-1027A-E0012	MCC Elevation and Details, MCC-A72
1-1027A-E0013	Motor Starter Schematic, SF-A61, Main Supply Fan
1-1027A-E0014	Installation Details, Service Equipment
1-1027A-E0015	Installation Details, 600V Power Cabling
1-1027A-E0016	Panel Layout, JB-A72, Temporary Generator Connection
1-1027F-E0001	Motor Starter Schematic, MS-F01, Flood Pump
1-1027F-E0002	Connection Diagram, MS-F01, Flood Pump
1-1027F-E0003	Motor Starter Schematic, MS-F02, Flood Pump
1-1027F-E0004	Connection Diagram, MS-F02, Flood Pump
1-1027F-E0005	Motor Starter Schematic, MS-F03, Flood Pump
1-1027F-E0006	Connection Diagram, MS-F03, Flood Pump
1-1027F-E0007	Motor Starter Schematic, SF-F62, Flood Motor Cooling Fan
1-1027L-E0001	Motor Starter Schematic, MS-L01, Wastewater Lift Pump
1-1027L-E0002	Connection Diagram, MS-L01, Wastewater Lift Pump
1-1027L-E0003	Motor Starter Schematic, MS-L02, Wastewater Lift Pump
1-1027L-E0004	Connection Diagram, MS-L02, Wastewater Lift Pump
1-1027A-M0001	Mechanical Floor Plan, Main Floor, Demolition
1-1027A-M0002	Mechanical Floor Plan, Main Floor
1-1027A-M0003	Mechanical Floor Plan, Main Floor
1-0127A-B0001	Architectural Plan, New Work
1-0127A-B0002	Architectural Sections, New Work
1-0127A-S0001	Structural Foundation, New Work
1-0127A-S0002	Mechanical Opening & Details
1-1027A-P0001	Process & Instrumentation Diagram, HVAC & Misc.

<u>Filename.</u>	<u>Document Code</u>	<u>Document Name/Title</u>
331-2016_Test_Forms.pdf		Electrical Testing Forms
331-2016_IO_List.pdf	632354-0000-48EL-0001	I/O List
331-2016_Instrument_List.pdf	632354-0000-48EL-0002	Instrument List
331-2016_Lamacoid_Schedule.pdf	632354-0000-40EL-0001	Lamacoid Schedule

E1.4 The following are included for reference:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
1299	Cockburn Street Pumping Station, Forcemain Upgrading
E-501	CSO Outfall Monitoring, Cockburn Electrical Site Plan
E-502	CSO Outfall Monitoring, Cockburn Electrical Site Plan
E-503	CSO Outfall Monitoring, Cockburn Electrical Details
E-504/1	CSO Outfall Monitoring, Cockburn Electrical Details
E-504/2	CSO Outfall Monitoring, Cockburn Electrical Details
LD-932	Cockburn St. Pumping Station, Slope Stabilization and Outfall Remedial Works, Modifications to Existing Gate Chamber & Low Level Outfall
LD-959	Cockburn St. Pumping Station, Architectural Improvements & Site Landscaping, Site Plan, Building Plan & Section
LD-960	Cockburn St. Pumping Station, Architectural Improvements & Site Landscaping, Building: Elevations
LD-961	Cockburn St. Pumping Station, Architectural Improvements & Site Landscaping, Building: Details
LD-963	Cockburn St. Pumping Station, Structural Details
R-137	Flood Pumping Station, Cockburn Street, Location, Profile & Details
R-138	Flood Pumping Station, Cockburn Street, Sections
R-139	Flood Pumping Station, Cockburn Street, Details
R-140	Flood Pumping Station, Cockburn Street, Details
R-141	Cockburn Flood Pumping Station, Comminator, Sump & Sewage Pumping Station, for G.W.S.D
R-142	Cockburn Flood Pumping Station, Electrical
R-143	Flood Pumping Station, Cockburn Street, Superstructure
R-144	Flood Pumping Station, Cockburn Street, Pump Alteration Data
R-145	Cockburn Street Flood Pumping Station, 20" Pump Installation
R-146	Cockburn Street Flood Pumping Sta., Revised Arch Repairs – Existing Sewer
SCD-135	Steel Bollard

GENERAL REQUIREMENTS

E2. MISCELLANEOUS

- E2.1 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.
- E2.2 Exercise care where cutting holes in existing concrete elements so as not to damage existing reinforcing.
- (a) 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.
- E2.3 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 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.

E2.4 The Contractor shall abide by the Arc Flash PPE requirements of CSA-Z462, Workplace Electrical Safety, and the arc flash labels on existing facility equipment.

E2.5 Wire nuts

- (a) Wire nuts are not permitted in conduit bodies; and
- (b) Wire nuts are permitted in junction boxes for lighting and receptacle wiring only. Wire nuts are not permitted for automation wiring.

E2.6 All conduit routes shall be approved by the Contract Administrator prior to installation of new conduit.

E3. HAZARDOUS MATERIALS

E3.1 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.

E4. EQUIPMENT SUPPLIED BY OTHERS

E4.1 The City will supply the following equipment:

- (a) Cellular Modem within control panel CP-A81.

E4.2 Manitoba Hydro will supply the following equipment:

- (a) 5kV utility meter and associated potential and current transformers. Contractor to install metering equipment into new 5kV metering compartment.

E5. EQUIPMENT AND MATERIALS

E5.1 The Contractor shall supply all equipment and materials necessary to execute the work, except for the equipment and material indicated as "Existing" and to be re-used on the Drawings. Also note equipment to be supplied by others in E4.

E5.2 Existing equipment and materials may be re-used only as specifically indicated in these specifications, as shown on the Drawings or as approved by the Contract Administrator.

E6. SECURITY

E6.1 The Contractor is responsible for all material and equipment stored on the site.

E6.2 Provide a chain-link fence around the construction site and lock after working hours. Supply five (5) copies of the key to the City.

E6.3 The Contractor is responsible for ensuring the security of the pumping station.

E6.4 Provide and pay for responsible security personnel to guard the site and contents of site after working hours whenever the pumping station or any associated piece of equipment is not locked and fully secure.

E7. SALVAGE

E7.1 All salvaged equipment and materials as determined by the Contract Administrator shall remain property of the City unless specifically noted otherwise. The Contractor shall deliver salvaged

equipment and materials to the City of Winnipeg's "Y Yard" outdoor storage compound located at the North East corner of the intersection of Dugald Road and Van Bellegham Avenue, Winnipeg, Manitoba.

- E7.2 The Contractor shall notify the Contract Administrator at least 48 hours prior to delivery of salvaged equipment to allow for arrangements to be made to receive the salvaged equipment. All deliveries shall be made between 8:00 am and 3:30 pm on Business days.
- E7.3 The Contactor shall remove and haul all rejected salvage from the site and legally dispose of it.
- E7.4 Removal and delivery of salvageable and non-salvageable equipment and material shall be considered incidental to the Contract Work and no additional payment will be made for such Work.

E8. DANGEROUS WORK CONDITIONS

- E8.1 Further to clause C 6.26 of the General Conditions, the Contractor shall be aware that underground chambers, manholes, and sewers are considered a confined space and shall follow the "Guidelines for confined Entry Work" as published by the Manitoba Workplace Safety and Health Division.
- E8.2 The Contractor shall be aware of the potential hazards that can be encountered in underground chambers, manholes and sewers such as explosive gases, toxic gases and oxygen deficiency. The Contractor's Safe Work Plan should address these issues.
- E8.3 The air in a confined space must be tested before entry and continuously during the time that personnel are inside the space. Equipment for continuous monitoring of gases must be explosion-proof and equipped with a visible and audible alarm. The principal tests are for oxygen deficiency, explosion range and toxic gases. Testing equipment must be calibrated in accordance with manufacturer's specifications.
 - (a) The Contractor is responsible for all testing requirements.
- E8.4 The Contractor shall ventilate all confined spaces including underground chambers, tunnels, pipes and shafts as required and approved by the Manitoba Workplace Safety and Health Act (the "Act"). If no ventilation is supplied, a worker must wear a respirator or supplied air to enter the confined space.
- E8.5 Workers must wear a respirator or supplied air at all times when entering an underground chamber, manhole or sewer where live sewage is present.
- E8.6 The Contractor shall provide a photo-ionization detector (PID) and toxic gas detector on site at all times to monitor potential hydrocarbon vapours and hydrogen sulphide in the confined spaces. The gas detector and safety equipment conforming to the Act shall be made available to the Contract Administrator for his use during inspections.
- E8.7 The Contract Administrator may issue a stop work order to the Contractor if the above guidelines are not being followed. The Contractor shall not resume operations until the Contract Administrator is satisfied the Contractor is following the appropriate procedures. The Contractor shall have no claim for extra time or costs due to the stop work order for not following these safety guidelines.

E9. WATERWAY BY-LAW

- E9.1 The Contractor shall note that all Works within 107 metres (350 feet) of a riverbank are within the jurisdiction of the Waterway By-Law. The City of Winnipeg, Water and Waste Department, will apply and pay for any Waterway Permits for the project, as required. The Contractor shall adhere to restrictions imposed on the permit.
- E9.2 Under no circumstances will stockpiling of any material be permitted within 107 metres of a riverbank or dike.

- (a) The Contractor is responsible for removing excavated materials from the Site immediately.
- (b) The Contractor is responsible for utilizing and placing any backfill brought to the Site immediately.

E10. PROTECTION OF EXISTING TREES

- E10.1 Do not remove existing trees and take the following precautionary steps to avoid damage from construction activities to existing boulevard trees within the limits of the construction area.
 - E10.1.1 Do not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.
 - E10.1.2 Strap mature tree trunks with 25 x 150 x 2400 wood planks. Smaller trees shall be similarly protected using appropriately sized wood planks.
 - E10.1.3 Excavations shall be carried out in a manner to minimize damage to existing root systems. Where roots must be cut to facilitate an excavation they shall be neatly pruned at the face of the excavation.
 - E10.1.4 Work on site shall be carried out in a manner to minimize damage to existing tree branches. Where damage to tree branches does occur, the Contractor shall neatly prune the damaged branch.
 - E10.1.5 American elm trees shall not be pruned between April 1st and August 1st and Siberian elm trees between April 1st and July 1st of any year under provisions of The Dutch Elm Disease Act.
- E10.2 All damage to existing trees due to construction activities shall be repaired to the requirements and satisfaction of the City of Winnipeg, Parks and Recreation Department, Forestry Branch at the Contractor's expense.
- E10.3 Costs for protection of trees shall be considered incidental to the Contract Work and shall be done at the Contractor's expense.

E11. TEMPORARY USE OF CITY EQUIPMENT

- E11.1 City facilities, systems and equipment shall not be used during construction without the Contract Administrator's written permission. The Contract Administrator reserves the right to withdraw said permission if, in his opinion, proper care and maintenance are not provided.

E12. EXISTING PUMPING STATION OPERATION DURING CONSTRUCTION

- E12.1 The facility related to the Work is critical to the transport of wastewater for the City of Winnipeg. Under no condition shall any equipment associated with the station pumping be shut down without prior permission of the Contract Administrator.
- E12.2 The Cockburn Pumping Station is a combination flood pumping and wastewater pumping (lift) station. The Contractor is advised that the flood pumping equipment at the Cockburn Pumping Station will be allowed to be taken out of operation after August 1, 2016, and after the Contractor's schedule of activities to complete the Work is approved by the Contract Administrator. The Contractor shall plan his construction activities to allow for the minimum amount of disruption time to normal operating status of the stations.
 - (a) Work on site may begin prior to August 1, 2016 as long as the operation of the flood station or lift station equipment is not affected. For example, the contractor may begin the installation of the service equipment outside the station prior to August 1, 2016.
- E12.3 The flood pumping equipment at the Cockburn Pumping Station shall be put back into service on or prior to the date of Substantial Performance indicated in D18.1. Under no circumstance shall the flood pumping station be allowed to remain out of service after the date of Substantial Performance as the spring snow melt presents a risk of flooding basements in the area. The

Contractor may not use payment of liquidated damages, as per D20.1, as a means to justify the failure of placing the flood pumping equipment in service by the date of Substantial Performance.

- E12.4 The existing Combined Sewer Overflow (CSO) equipment at the station shall remain in service to the greatest extent possible to allow the City to monitor wastewater overflows. Relocation of the CSO panel is within the scope of the Work, and shall be scheduled and coordinated with the Contract Administrator to ensure minimum interruption to the CSO monitoring equipment.
- E12.5 The Contractor shall cooperate with and provide full access at all times for City personnel to carry out maintenance and operational duties.
- (a) No additional payments will be made for providing access to City forces on the site or any potential affect City crews might have on the Contractor's work.

E13. TEMPORARY SHUTDOWN OF THE WASTEWATER PUMPING (LIFT) STATION

- E13.1 The wastewater pumping (lift) station equipment shall remain in service throughout the Work to the greatest extent possible to continue pumping wastewater to the wastewater treatment plant(s).
- E13.2 Temporary shutdown of the wastewater pumping (lift) station will be allowed for the following work activities:
- (a) Temporary electrical service shutdowns,
 - (b) Re-feeding the existing lift pump motor starters,
 - (c) Connection of new lift pump motor starters and associated electrical cabling to the existing lift pump motors,
 - (d) Re-connection or modifications to the lift pump controls.
- E13.3 A 600V temporary service shall be provided to power the lift station equipment as this equipment is currently powered from the existing 4160V service that requires replacement.
- E13.4 There are two (2) wastewater lift pumps at the Cockburn Pumping Station. Where a shutdown of the lift pumps are required, only one (1) pump should be shutdown at a time while the other pump remains in service.
- E13.5 Both wastewater lift pumps may be simultaneously shut down to perform the work if required, and upon the approval of the Contract Administrator. Note that up to 42 hours of available storage time may be available for shutting down both pumps. However, this duration is subject to unforeseen flow conditions (e.g. a water main break in the area, etc.).
- E13.6 Sequence work such that a minimum amount of shut-down time at the Station is used for the above mentioned activities.
- E13.7 Prepare and submit shutdown plans a minimum of 48 hours prior to the proposed shutdown.
- E13.8 All gate operation and other control relating to the wastewater process will be by the City.
- E13.9 The allowable shutdown times for the Cockburn Station indicated herein are approximate and the Contractor must monitor the upstream system at all times to ensure the stored level of wastewater will not exceed the critical basement elevation.
- E13.10 Schedule work activities requiring station shutdown to be done at night, if required by the Contract Administrator, when flow amounts are generally reduced, to maximize the amount of shutdown time available and reduce the risks associated with station shutdown.
- E13.11 Schedule several work activities to be completed in the same shutdown where possible to minimize the number of station shutdowns.

- E13.12 Water and Waste Department, Collection System personnel will be available to provide assistance to the Contractor for temporary shutdown of the wastewater pumping station to facilitate completion of the Work.
- E13.13 There will be no charge to temporarily shutdown the wastewater pumping station for the work activity listed.
- E13.14 If an unreasonable number of station shutdowns are required to complete the same work activity due to the Contractor's method of operation, a fee of \$300.00 per hour for Collection System personnel may be charged to the Contractor and deducted from future Progress Payments.
- E13.15 The Contract Administrator reserves the right to cancel a planned station shutdown if in his opinion, flow conditions or the weather forecast would not allow for a shutdown of sufficient duration to complete the work activity. The Contractor shall reschedule the work activity to a more suitable time.
- E13.16 Consecutive back-to-back station shutdowns will not be allowed until the sewer system has returned to normal.

E14. WORK PLAN

- E14.1 The Contractor is required to develop and submit a detailed work plan to the City for review. The work plan is to include:
- (a) The proposed construction sequence to be followed including all methods to be employed to ensure that no damage occurs to existing structures or adjacent properties within or adjacent to an excavation.
 - (b) A description of all proposed methods of construction to be implemented.
 - (c) Specialized equipment that may be used.
 - (d) Any design revisions proposed to accommodate the Contractor's proposed method of construction.
 - (e) Water control methods to be utilized during construction, including the Contractor's proposed method for draw down and depressurization of the groundwater till pressures in the area of the excavation and any required surface runoff control measures.
 - (f) The Contractor shall respond to any concerns that may be raised by the Contract Administrator's review of the Contractor's construction methods submission.

E15. MOBILIZATION AND DEMOBILIZATION

- E15.1 Description:
- E15.1.1 Mobilization and demobilization will include but not be limited to start-up costs, equipment set-up and removal, storage facilities set-up and removal and site cleanup.
- E15.2 Measurement and Payment:
- E15.2.1 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. The remaining amount will be paid out upon demobilization.
- E15.2.2 The Contractor is eligible for payment of mobilization services when the Contract Administrator is satisfied that:
- (a) The Contractor has met all the Commencement requirements specified in D16.
 - (b) The contractor has mobilized equipment and initiated work on Site.
- E15.2.3 The Contractor is eligible for payment of demobilization services when the Contract Administrator is satisfied that:

- (a) The Contractor has achieved Substantial Performance;
- (b) the Contractor has demobilized; and
- (c) the Contractor has restored and cleaned up the site.

E16. LANDSCAPING

E16.1 Description:

E16.1.1 This specification shall cover surface restoration and associated items of Work for existing surfaces disturbed by construction activities.

E16.2 Construction Methods:

E16.2.1 Restoration of all existing surface areas disturbed by construction activities including but not limited to excavations for new electrical service equipment and associated conduit and cabling, operation of construction equipment, placement of field office or equipment trailer, snow clearing and where construction materials were stockpiled, shall be restored as follows:

- (a) Grassed areas: sodding using imported topsoil in accordance with CW 3510.
- (b) Gravel surfaces: in accordance with CW 3150.
- (c) Asphalt surfaces: match existing base course and asphalt thickness or provide a minimum of 150 millimetres of base course and 75 millimetres of Type 1A Asphaltic concrete whichever is greater, in accordance with CW 3410.
- (d) Pavement slabs in accordance with CW 3310.
- (e) Interlocking pavement stones: CW 3330.

E16.3 Measurement and Payment:

E16.3.1 Payment will be based on Form B, Item 2, as accepted and measured by the Contract Administrator.

- (a) The Contractor is eligible for payment when the Contract Administrator is satisfied that the Contractor has met all the requirements as specified in E20.

E17. STRUCTURAL AND ARCHITECTURAL WORK

E17.1 Mechanical Openings:

E17.1.1 Frame out new mechanical rough openings on walls of building as indicated on the mechanical and structural drawings, and infill existing openings or portions of openings no longer needed.

E17.1.2 Supply and repair brick-work to match existing brick size and finish.

E17.2 Interior Architectural Works:

E17.2.1 Supply and install new steel stud framing around building perimeter. Infill with new Roxul mineral fiber insulation and vapour barrier as indicated on drawings and in specifications. Cover with plywood as indicated on drawings, prime and paint ANSI 70 grey. Existing insulation below main floor and in comminutor motor room to remain.

E17.2.2 Supply and install new steel stud framing around electrical vault perimeter. Infill with new Roxul mineral fiber insulation and vapour barrier as indicated on drawings and in specifications. Cover with plywood as indicated on drawings, prime and paint ANSI 70 grey.

E17.2.3 Supply and install new sprayfoam insulation in building attic above main building and above electrical vault as indicated on drawings. Cover with fire protective coating as indicated on the drawings.

E17.2.4 Supply and install new segmented, insulated, removable lifting well ceiling closure in main building as indicated on drawings.

E17.2.5 Demolish and remove existing wooden 'shed' around staircase on the main floor, as well as the handrail that is attached to the shed.

E17.3 Structural Works:

E17.3.1 Supply materials and construct new electrical equipment foundation c/w micropiles and associated cap/slab as per drawings and specifications.

E17.4 Measurement and Payment:

E17.4.1 Payment will be based on Form B, Item 3, as accepted and measured by the Contract Administrator.

- (a) A maximum of 95% may be submitted for progress payments prior to the total completion of the associated services, including the provision of as-built drawing mark-ups and O&M manuals.

E18. MECHANICAL WORK

E18.1 Scope of Work:

- (a) Provide new ventilation and heating system for the main building including, but not limited to the following:
 - (i) Demolition of the existing supply fan and associated ductwork in the superstructure.
 - (ii) Supply and installation of new supply fan, electric duct heater, and filter section. See Section 23 34 00.
 - (iii) Supply and installation of mixing section with dampers and controls. See Section 23 09 33.
 - (iv) Supply and installation of new, insulated ductwork. See Section 23 07 13 and Section 23 31 14.
 - (v) Supply and installation of new outdoor air and exhaust openings complete with new louvers. See Section 23 37 13.
 - (vi) Supply and installation of new electric unit heaters. See Section 23 82 40.
- (b) Provide new ventilation and heating system for the new electrical room (existing transformer vault) including but not limited to the following:
 - (i) Supply and installation of new, insulated ductwork. See Section 23 07 13 and Section 23 31 14.
 - (ii) Supply and installation of new outdoor air and exhaust openings complete with new louvers. See Section 23 37 13.
 - (iii) Supply and installation of a new electric unit heater. See Section 23 82 40.
- (c) Remove the existing rain water leader on the main floor of the station, and in-fill existing openings.
- (d) Supply and installation fire extinguishers as shown on the drawings. See Section 10 44 20.

E18.2 Measurement and Payment:

E18.2.1 Payment will be based on Form B, Item 4, as accepted and measured by the Contract Administrator.

- (a) A maximum of 95% may be submitted for progress payments prior to the total completion of the associated services, including the provision of as-built drawing mark-ups and O&M manuals.

E19. ELECTRICAL WORK

E19.1 Supply and install temporary electrical provisions as required to complete the work as specified.

- E19.2 Coordinate with Manitoba Hydro to perform a 4160V service upgrade and removal of the existing 120/240V service. All costs from Manitoba Hydro for the 4160V service upgrade will be directly billed to the City, not the Contractor.
- E19.3 Coordinate with Manitoba Hydro to obtain a temporary 600V service to power the sanitary lift station pumps and associated controls while the main 4160V service is off.
- (a) The fee from Manitoba Hydro for installation and removal of the temporary 600V service, as well as the monthly power usage fee, will be directly billed to the City, not the Contractor.
 - (b) The Contractor is responsible for providing acceptable service entrance equipment and a metering enclosure, and connect the temporary service in a manner to provide power to the lift station starters and controls. Manitoba Hydro will supply the temporary 600V meter.
- E19.4 Remove the following existing equipment:
- (a) Customer-owned 5kV and 120/240V service equipment and cabling,
 - (b) Medium voltage service transformers in the transformer vault,
 - (c) 600V splitter in the transformer vault,
 - (d) Flood and lift station motor starters and associated disconnect switches,
 - (e) 600:120/240V transformer and 120/240V panelboard, and associated disconnect switch,
 - (f) Lighting,
 - (g) Switches,
 - (h) Receptacles,
 - (i) Pull boxes,
 - (j) Telephone cabling,
 - (k) Conduit, junction boxes, wiring, and any other component of the existing electrical distribution within the station.
- E19.5 Supply and install:
- (a) Temporary generator connection enclosure, JB-A72.
 - (b) Light fixtures,
 - (c) Switches,
 - (d) Receptacles,
 - (e) Pull boxes,
 - (f) Field junction boxes,
 - (g) Cable tray,
 - (h) Conduit, and
 - (i) Telephone cabling.
- E19.6 Supply, install, and test the following:
- (a) Medium voltage service equipment, including:
 - (i) 5kV fusible disconnect,
 - (ii) 5kV metering compartment,
 - (iii) 4160:600V oil filled, pad-mount transformer complete with high temperature and low oil level switches,
 - (iv) 600V customer service termination enclosure (CSTE).
 - (b) 600V motor control centres, MCC-A71 and MCC-A72.
 - (c) 600-120/208V transformer, XFMR-A73.

- (d) 120/208V panelboard, PNL-A73,
 - (e) Emergency lighting systems,
 - (f) Grounding rods, ground wells, and associated conductors,
- E19.7 Test the following existing motors:
- (a) Existing sanitary lift station motors, MTR-L01 and MTR-L02,
 - (b) Existing flood station motors, MTR-F01, MTR-F02, and MTR-F03.
- E19.8 Note to bidders: some of the work in the hazardous locations (sewer or wetwells) will typically require the use of a self-contained breathing apparatus and fall-arrest equipment.
- E19.9 Commission all electrical equipment.
- E19.10 Install arc flash labels supplied by the Contract Administrator.
- E19.11 Measurement and Payment:
- E19.11.1 Payment will be based on Form B, Item 5, as accepted and measured by the Contract Administrator.
- (a) A maximum of 95% may be submitted for progress payments prior to the total completion of the associated services, including the provision of as-built drawing mark-ups and O&M manuals.

E20. AUTOMATION WORK

- E20.1 Supply, install, test, and commission the complete automation system and all instrumentation.
- E20.2 Remove the following existing equipment:
- (a) Flood station Control Panel, and turn over to the City.
- E20.3 Relocate the following existing equipment to the new electrical room:
- (a) Combined Sewer Overflow (CSO) Termination Panel, CSO flow meter transmitter, and associated Junction Boxes.
- E20.4 Supply, install, and test the following:
- (a) Qty 1, Electrical Room High Temperature Switch (TSH-A652),
 - (b) Qty 1, Electrical Room High/Low Temperature Switch (TS-A653),
 - (c) Qty 1, Flood Station Hi Wetwell level switch (LSH-F500),
 - (d) Qty 1, Flood Station Main Floor High Temperature Switch (TSH-F621),
 - (e) Qty 1, Flood Station Main Floor High/Low Temperature Switch (TS-F622),
 - (f) Qty 3, Flood Station Seal Water Flow Switches (FSL-F011, FSL-F021, FSL-F031),
 - (g) Qty 3, Flood Station Seal Water Solenoids (XV-F011, XV-F021, XV-F031),
 - (h) Qty 1, Sanitary (Lift) Station Hi Wetwell level switch (LSH-L500),
 - (i) Qty 1, Sanitary (Lift) Station Low Temperature Switch (TSL-L525),
 - (j) Qty 1, Air Filter Plugged Switch (PDSH-A610),
 - (k) Qty 1, Duct Temperature Sensor (TE-A611),
 - (l) Qty 1, Differential Pressure Transmitter (PDT-A601),
 - (m) Qty 1, Sanitary Lift Pumps Clamp-on Discharge Flowmeter (FIT-L101),
 - (n) Qty 10, Pump emergency stop pushbutton stations,
 - (o) Control Panel, CP-A81, and

- (p) Ventilation Panel, JBA-A84.
- E20.5 Install miscellaneous junction boxes as indicated on the drawings.
- E20.6 Program and commission the PLC in control panel CP-A81.
 - (a) The Functional Requirements Specification will be provided to the Contractor at a later date. The Functional Requirements include mapping of physical inputs and outputs to DNP3 registers. No ladder logic or function block programming for pump or HVAC control is required.
- E20.7 Connect and test signaling between the existing Combined Sewer Overflow (CSO) termination panel and the new control panel, as per the drawings.
- E20.8 Contractor to maintain and re-use the following existing equipment. Existing instruments shall be fully tested for operation, and adjusted as necessary.
 - (a) Level transmitters for the flood wetwell and lift wetwell level measurement (LT-F500 and LIT-L500-A),
 - (b) Flood Station Seal water pressure switch (PSL-F526),
 - (c) Flood Station Low Instrument Air pressure switch (PSL-F524),
 - (i) Note: the City may be installing a new bubbler level transmitter for the flood station, in which case the Contractor will be required to connect to a new switch supplied by the City.
 - (d) Sanitary (Lift) Station Flood switch (LSH-L523),
 - (i) Note: the City has installed two float switches at this location for redundancy. One float switch may be removed.
 - (e) Sanitary (Lift) Low Instrument Air pressure switch (PSL-L524),
 - (i) Note: the City may be installing a new bubbler level transmitter for the sanitary lift station, in which case the Contractor will be required to connect to a new switch supplied by the City.
 - (f) Comminutor Chamber Flood Switch (LSH-L481), and
 - (g) Weir Overflow switch (LSH-S529).
- E20.9 Note to bidders: some of the work in the hazardous locations (sewer or wetwells) will typically require the use of a self-contained breathing apparatus and fall-arrest equipment.
- E20.10 Install, test, and commission the HVAC system automation components, including but not limited to the following:
 - (a) Connecting the HVAC temperature controller (TIC-A610), room pressure controller (PDIC-A601), temperature sensors, temperature switches, differential pressure transmitter, and damper actuators,
 - (b) Configuring the temperature and differential pressure controllers,
 - (c) Verifying operating of the inline duct heater,
 - (d) Verifying damper operation in occupied and unoccupied modes,
 - (e) Setting and verifying the operation of the temperature switch for control of the electrical room fan, SF-A65,
 - (f) Setting and verifying operation of the temperature switch for control of the flood pump motor cooling fan, SF-F62, and
 - (g) Verifying operation of the unit heaters and associated thermostat controls.
- E20.11 Measurement and Payment:
 - E20.11.1 Payment will be based on Form B, Item 6, as accepted and measured by the Contract Administrator.

- (a) A maximum of 95% may be submitted for progress payments prior to the total completion of the associated services, including the provision of as-built drawing mark-ups and O&M manuals.

E21. ADDITIONAL WORK

E21.1 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.

E21.2 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.

E21.3 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.

E21.4 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) Rates and Mark-up factors shall correspond to Form B, unless specifically authorized by the Contract Administrator.

E21.5 Measurement and Payment

E21.5.1 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 7.

- (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 the Subcontractor(s).

E21.5.2 Additional labour will be reimbursed at the rate specified on Form B. The rate will not be adjusted for Subcontractors or individuals with specialized skills, without specific approval of the Contract Administrator.

E22. EXPEDITED SHOP DRAWINGS

E22.1 In order to expedite Shop Drawings with critical timeliness, the Lowest Responsive Bidder, as outlined in B17, will be permitted, after receiving written approval from the Contract Administrator, to arrange for the preparation of Shop Drawings for the following items with critical timeliness:

- (a) Service entrance equipment including:
 - (i) 5kV fusible disconnect switch, FDS-A70
 - (ii) 5kV utility metering compartment,
 - (iii) Medium voltage transformer, XFMR-A70,
 - (iv) Customer Service Termination Enclosure, CSTE-A70.
- (b) Motor Control Centres, MCC-A71 and MCC-A72,

E22.2 If Award is made to the lowest responsive bidder then no payment for the preparation of Shop Drawings will be made.

- E22.3 If no Contract is awarded, then the City of Winnipeg will pay the requested Bidder up to a maximum of five hundred dollars (\$500.00) for each of the requested submissions noted above, for the preparation and delivery of Shop Drawings. Delivery of the Shop Drawings to the City and payment of the above amounts will constitute full and final consideration of each party to the other, and neither party will have any further liability to the other with respect to this Bid Opportunity.