THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 639-2017

COMMUNITY ROW WASTEWATER PUMPING STATION – 2017 UPGRADES

TABLE OF CONTENTS

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 COMMUNITY ROW WASTEWATER PUMPING STATION – 2017 UPGRADES

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, August 11, 2017.

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 10:00 am on August 4, 2017 to provide Bidders access to the Site.

B3.2 The Bidder is advised that they are responsible for providing their own safety equipment for the site visit. At a minimum, a hard hat, safety boots, and safety glasses are required.

B3.3 The Bidder shall not be entitled to rely on any information or interpretation received at the Site investigation unless that information or interpretation is the Bidder's direct observation, or is provided by the Contract Administrator in writing.

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

B4.2 If the Bidder finds errors, discrepancies or omissions in the Bid Opportunity, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B4.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B4.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Bid Opportunity will be provided by the Contract Administrator only to the Bidder who made the enquiry.

B4.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B4 unless that response or interpretation is provided by the Contract Administrator in writing.

B5. CONFIDENTIALITY

B5.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:

(a) was known to the Bidder before receipt hereof; or

(b) becomes publicly known other than through the Bidder; or

(c) is disclosed pursuant to the requirements of a governmental authority or judicial order.

B5.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Bid Opportunity to the media or any member of the public without the prior written authorization of the Contract Administrator.

B6. ADDENDA

B6.1 The Contract Administrator may, at any time prior to the Submission Deadline, issue addenda correcting errors, discrepancies or omissions in the Bid Opportunity, or clarifying the meaning or intent of any provision therein.

B6.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B6.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/bidopp.asp

B6.2.2 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B6.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B7. SUBSTITUTES

B7.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.

B7.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.

B7.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.

B7.4 The Bidder shall ensure that any and all requests for approval of a substitute:

(a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;

(b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;

(c) identify any anticipated cost or time savings that may be associated with the substitute;

(d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;

(e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.

B7.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.

B7.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, 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.

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.

B10.2 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) Pinchin Ltd.

B11.3 Additional Material:

(a) Asbestos Laboratory Certificate of Analysis

(b) Analysis for Lead Concentration in Paint Chips

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) Written confirmation of a safety and health certification meeting SAFE Work Manitoba's SAFE Work Certified Standard (e.g., COR™ and SECOR™) or

(i) 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

(ii) 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

(b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/.

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 The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).

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.

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 installation of wastewater pumping units in the Community Row Wastewater Pumping Station, installation of a new below-grade manhole and valve on the bypass sewer, construction of a building addition on the north side of the station for housing a standby natural gas generator, miscellaneous structural and architectural improvements to the existing Pumping Station, and the installation of electrical, HVAC mechanical, automation, and instrumentation equipment.

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

(a) “ASTM” means American Society for Testing and Materials;

(b) “AWWA” means Aerican Water Works Association;

(c) ”MCC” means Motor Control Centre;

(d) ”MH” means Manhold;

(e) ”PDWF” means Peak Dry Weather Flow;

(f) ”PLC” means Programmable Logic Controller;

(g) “PWWF” means Peak Wet Weather Flow;

(h) “SCADA” means Supervisory Control and Data Acquisition,

(i) “VFD” means Variable Frequency Drive.

D4. CONTRACT ADMINISTRATOR

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

Brian Cleven, P. Eng
Project Manager, Electrical and Automation Engineer

Telephone No. 204 786-8080
Email Address brian.cleven@snclavalin.com

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

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

D5. CONTRACTOR'S SUPERVISOR

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

D6. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

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

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

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

(a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;

(b) the Contract, all deliverables produced or developed; and

(c) any statement of fact or opinion regarding any aspect of the Contract.

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

D7. NOTICES

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

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

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

The City of Winnipeg
Chief Financial Officer

Facsimile No.: 204 949-1174

D7.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following facsimile number:

The City of Winnipeg
Legal Services Department
Attn: Director of Legal Services

Facsimile No.: 204 947-9155

D7.5 Bids Submissions must not be submitted to the above facsimile numbers. Bids must be submitted in accordance with B8.

D8. FURNISHING OF DOCUMENTS

D8.1 Upon award of the Contract, the Contractor will be provided with five (5) complete sets of the Bid Opportunity. If the Contractor requires additional sets of the Bid Opportunity, they will be supplied to him/her at cost.

SUBMISSIONS

D9. AUTHORITY TO CARRY ON BUSINESS

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

D10. SAFE WORK PLAN

D10.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D10.2 The Safe Work Plan should be prepared and submitted in the format shown in the City's template which is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at http://www.winnipeg.ca/matmgt/Safety/default.stm

D10.3 Notwithstanding 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.

D11. INSURANCE

D11.1 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.

D11.2 Deductibles shall be borne by the Contractor.

D11.3 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.

D11.4 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.

D12. PERFORMANCE SECURITY

D12.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:

(a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or

(b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or

(c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.

D12.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.

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

D13. SUBCONTRACTOR LIST

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

D14. DETAILED WORK SCHEDULE

D14.1 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.

D14.2 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.

D14.3 Further to D14.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:

(a) Construction and demolition of the temporary access roadway on the north side of the Station,

(b) Temporary bypass pumping operations,

(c) Driveway modification on the south side of the Station,

(d) Electrical service upgrade,

(e) Station interior demolition, broken down by discipline,

(f) Building addition on the north side of the station,

(g) Process mechanical work,

(h) Mechanical HVAC work,

(i) Electrical work,

(j) Automation work,

(k) Site restoration and cleanup,

(l) Submission of O&M Manuals and As-Built drawings.

D14.4 Further to D14.2(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

D15. COMMENCEMENT

D15.1 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.

D15.2 The Contractor shall not commence any Work on the Site until:

(a) the Contract Administrator has confirmed receipt and approval of:

(i) evidence of authority to carry on business specified in D9;

(ii) evidence of the workers compensation coverage specified in C6.15;

(iii) the Safe Work Plan specified in D10;

(iv) evidence of the insurance specified in D11;

(v) the performance security specified in D12;

(vi) the Subcontractor list specified in D13;

(vii) the detailed work schedule specified in D14.

(b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D15.3 The Contractor shall commence the Work on the Site within fourteen (14) Working Days of receipt of the letter of intent.

D15.4 The City intends to award this Contract by October 11, 2017.

D15.4.1 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.

D16. WORKING DAYS

D16.1 Further to C1.1(jj), the Contract Administrator's determination of whether or not atmospheric and Site conditions are such that a Working Day is deemed to have elapsed may be based at one time on one type of work while at another time a Working Day may be based on another type of work. When more than one type of major work is involved, the quantity of equipment that must be able to work in order to meet the requirements of a Working Day may vary considerably from that specified in the General Conditions.

D16.2 In the event that incidental work is behind schedule which, in the opinion of the Contract Administrator, should have been or could have been carried out by the Contractor in conjunction with or immediately following work of a major type, the City hereby reserves the right to charge Working Days on the incidental work until such time as it is up to schedule.

D16.3 When the major type of work involves restoration of the site to the condition it was prior to rainfall, Working Days shall not be charged.

D16.4 The Contract Administrator will furnish the Contractor with a daily record for each major type of work showing various information concerning the equipment, the time it worked, could have

worked and Working Days charged. This report is to be signed each day by an authorized representative of the Contractor.

D17. CRITICAL STAGES

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

(a) Installation of temporary access roadway on the north side of the Station must be completed by November 30, 2017.

(b) Three (3) new pumping units must be put into active service by March 2, 2018.

(c) The new standby natural gas generator and transfer switch must be put into active service by March 30, 2018.

D18. SUBSTANTIAL PERFORMANCE

D18.1 The Contractor shall achieve Substantial Performance by May 1, 2018.

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 June 30, 2018.

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 Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:

(a) Critical Stages – One thousand five hundred dollars ($1,500);

(b) Substantial Performance – One thousand dollars ($1,000);

(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 D12)

KNOW ALL MEN BY THESE PRESENTS THAT

_____
(hereinafter called the "Principal"), and

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

_____

_____ dollars ($_____.____)

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

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

BID OPPORTUNITY NO. 639-2017

COMMUNITY ROW WASTEWATER PUMPING STATION – 2017 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 D12)

_____
(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 639-2017

COMMUNITY ROW WASTEWATER PUMPING STATION – 2017 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)

FORM J: SUBCONTRACTOR LIST
(See D13)

COMMUNITY ROW WASTEWATER PUMPING STATION – 2017 UPGRADES

Name	Address

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:

Specification No.		Specification Title
Division 01	**-**	**General Conditions**
01 33 00		Submittal Procedures
01 45 00		Quality Control
01 51 00		Temporary Utilities
01 52 00		Construction Facilities
01 56 00		Temporary Barriers and Enclosures
01 61 00		Common Product Requirements
01 73 03		Execution Requirements
01 74 11		Cleaning
01 78 00		Closeout Submittals
01 89 76		Concrete Paving
Division 03	**-**	**Concrete**
03 05 10		Cast-In-Place Concrete
03 20 00		Concrete Reinforcing
Division 04	**-**	**Masonry**
04 05 00		Masonry
Division 05	**-**	**Metals**
05 50 00		Metal Fabrications
Division 06	**-**	**Wood, Plastics and Composites**
06 10 11		Rough Carpentry
06 17 53		Shop-Fabricated Wood Trusses
Division 07	**-**	**Thermal and Moisture Protection**
07 21 13		Board Insulation
07 21 16		Blanket Insulation
07 26 00		Vapour Retarders

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 29 23	Variable Frequency Drives
26 32 10	Natural Gas Generator
26 50 00	Lighting
26 52 01	Unit Equipment for Emergency Lighting

Division 27 - Communications

27 30 00	Voice Communications

Division 31 - Earthwork

31 23 10	Excavating, Trenching and Backfilling

Division 40 - Automation

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
40 95 13	Control Panels
40 95 20	Human Machine Interface
40 99 01	Training
40 99 90	Maintenance and Support

Filename	Document Code	Document Name/Title
639-2017_Asbestos_Analysis		Pinchin Ltd. Asbestos Laboratory Certificate of Analysis
639-2017_Forms		Forms
639-2017_FRS	644548-0000-48ER-0001	Functional Requirements Specification
639-2017_Geotechnical_Report		Geotechnical Report
639-2017_HMI_Plan	612620-0015-40ER-0001	HMI Layout and Animation Plan
639-2017_Lead_Paint_Analysis		Analysis for Lead Concentration in Paint Chips
639-2017_Tag_Naming_Standard	612620-0014-40ER-0001	Tag Naming Standard

Drawing No.	Drawing Name/Title
1-0130L-D0001	Cover Sheet
1-0130L-D0002	Drawing Index
1-0130L-A0001 Sheet 001	Panel Layout, Control Panel CP-L81
1-0130L-A0001 Sheet 002	Panel Layout, Control Panel CP-L81
1-0130L-A0002 Sheet 001	Power Distribution, Control Panel CP-L81
1-0130L-A0002 Sheet 002	Power Distribution, Control Panel CP-L81
1-0130L-A0003 Sheet 001	IO Wiring Diagrams, Control Panel CP-L81, Discrete Inputs
1-0130L-A0003	IO Wiring Diagrams, Control Panel CP-L81, Discrete Inputs

Sheet 002	
1-0130L-A0003	IO Wiring Diagrams, Control Panel CP-L81, Discrete Inputs
Sheet 003	
1-0130L-A0004	IO Wiring Diagrams, Control Panel CP-L81, Discrete Outputs
1-0130L-A0005	IO Wiring Diagrams, Control Panel CP-L81, Analog Inputs
Sheet 001	
1-0130L-A0005	IO Wiring Diagrams, Control Panel CP-L81, Analog Inputs
Sheet 002	
1-0130L-A0006	IO Wiring Diagrams, Control Panel CP-L81, Analog Outputs
1-0130L-A0007	Network Diagram, Control Panel CP-L81
1-0130L-A0008	Panel Layout, Ventilation panel JBA-L86
1-0130L-A0009	Power Distribution, Ventilation Panel JBA-L86
1-0130L-A0010	Junction Box Layout, JBA-L83, Intrinsically Safe Barrier Panel
1-0130L-A0013	Loop Diagram, Wet Well High Level Switch, LSH-L500
1-0130L-A0014	Loop Diagram, Wet Well Level Transmitters and Level Controller, LIT-L500-A, LIT-L500-B, LIC-L500
1-0130L-A0016	Loop Diagram, Station Flood Level Switch, LSH-L523
1-0130L-A0017	Loop Diagram, 600V Power Fail, ESL-L721
1-0130L-A0018	Loop Diagram, Generator Transfer Switch, ATS-L72
1-0130L-A0019	Loop Diagram, Transient Voltage Surge Suppressor, XS-L711
1-0130L-A0020	Loop Diagram, Pump P-L01 Flow Transmitter, FIT-L011
1-0130L-A0021	Loop Diagram, Pump P-L02 Flow Transmitter, FIT-L021
1-0130L-A0022	Loop Diagram, Pump P-L03 Flow Transmitter, FIT-L031
1-0130L-A0023	Loop Diagram, Seal Water Flow Switches, FSL-L012, FSL-L022, FSL-L032
1-0130L-A0024	Loop Diagram, Downstream Interceptor High Level Switch, LSH-S950
1-0130L-A0025	Loop Diagram, Generator GEN-L72 Running and Alarm Status
1-0130L-A0026	Loop Diagram, Occupancy Switches, HS-L600-A, HS-L600-B
1-0130L-A0027	Loop Diagram, HVAC Dampers and Supply Fan, FV-L621, FV-L622, FV-L623, SF-L62
1-0130L-A0028	Loop Diagram, Duct Temperature Sensor and Duct Heater, TE-L631, HCE-L63
1-0130L-A0029	Loop Diagram, Main Floor Temp., Pump Room Low Temp Switch, TT-L601, TSL-L602
1-0130L-A0030	Loop Diagram, Generator Cooling Dampers, TV-L662-A, TV-L662-B, TV-L663, TV-L664
1-0130L-A0031	Loop Diagram, Generator Room Temperature Sensor, TE-L665
1-0130L-A0032	Loop Diagram, Generator Combustion Air Damper, XV-L661
1-0130L-A0033	Loop Diagram, Gas Detector Alarm and Fault, AIT-L550
1-0130L-A0034	Loop Diagram, Supply Fan Air Filter Plugged Switch, PDSH-L611
1-0130L-B0001	Building Removals, Exterior Plan and Elevations
1-0130L-B0002	Pumphouse - Exterior, Plan & Elevations
1-0130L-B0003	Pumphouse, Plan and Elevations
1-0130L-B0004	Sections and Details
1-0130L-B0005	Sections and Elevations, Air handling Unit AHU-L65
1-0130L-C0001	Site Plan, Temporary Bypass Pumping
Sheet 001	
1-0130L-C0001	Site Plan, Temporary Bypass Pumping
Sheet 002	
1-0130L-C0002	Site Plan, Civil Works
1-0130L-E0001	Electrical Single Line Diagram
1-0130L-E0002	Site Plan, Electrical Service Equipment Layout
1-0130L-E0003	Electrical and Lighting Plan Layout, Main Floor, Demolition
1-0130L-E0004	Electrical and Lighting Plan Layout, Main Floor, New Work
1-0130L-E0005	Electrical and Lighting Plan Layout, Motor Room, Demolition and New Work
1-0130L-E0006	Electrical and Lighting Plan Layout, Pump Room, Demolition and New Work
1-0130L-E0007	Hazardous and Wet Location Plan
1-0130L-E0008	Electrical Schedules
1-0130L-E0009	MCC Elevation and Details, MCC-L72E
1-0130L-E0010	Electrical Details
1-0130L-E0011	Motor Starter Schematic, VFD-L01, Wastewater Lift Pump P-L01

1-0130L-E0012	Connection Diagram, VFD-L01, Wastewater Lift Pump P-L01
1-0130L-E0013	Motor Starter Schematic, VFD-L02, Wastewater Lift Pump P-L02
1-0130L-E0014	Connection Diagram, VFD-L02, Wastewater Lift Pump P-L02
1-0130L-E0015	Motor Starter Schematic, VFD-L03, Wastewater Lift Pump P-L03
1-0130L-E0016	Connection Diagram, VFD-L03, Wastewater Lift Pump P-L03
1-0130L-E0017	Connection Diagram, Automatic Transfer Switch ATS-L72
1-0130L-M0001	Plan, Mechanical, Main Floor, Motor Room & Pump Room - Demolition
1-0130L-M0002	Section, Mechanical, Motor Room & Pump Room - Demolition
1-0130L-M0003	Plan, Mechanical, Motor Room & Pump Room - New Work
1-0130L-M0004	Section, Mechanical, Motor Room & Pump Room - New Work
1-0130L-M0005	Details, Mechanical, Motor Room - New Work - Pipe Supports
1-0130L-M0006	Plan, Mechanical - Utilities, Main Floor, Motor Room & Pump Room - New Work
1-0130L-M0007	Sections, Mechanical - Utilities, Motor Room & Pump Room - New Work
1-0130L-M0008	Details, Wetwell Sight Glass
1-0130L-M0009	Plan & Sections, Mechanical - Natural Gas and Exhaust, Main Floor - New Work
1-0130L-M0010	Main Floor Plan, HVAC, Removals
1-0130L-M0011	Main Floor Plan, HVAC, New Work
1-0130L-M0012	Sections, HVAC
1-0130L-M0013	Plan, Sections & Schedules, HVAC
1-0130L-S0001	Notes, Sheet 1
1-0130L-S0002	Notes, Sheet 2
1-0130L-S0003	Building Addition Foundation, Plans
1-0130L-S0004	Building Addition Foundation, Sections
1-0130L-S0005	Building Addition Foundation, Details
1-0130L-S0006	Building Addition Wall, Plan and Elevations
1-0130L-S0007	Building Addition Wall, Details
1-0130L-S0008	Motor Room Floor Reinforcing, Plan and Sections
1-0130L-S0009	Pump Room Level, New Work and Repairs, Plan, Elevations and Details
1-0130L-P0001 Sheet 001	Process & Instrumentation Diagram, Wastewater Pumping
1-0130L-P0001 Sheet 002	Process & Instrumentation Diagram, Wastewater Pumping
1-0130L-P0002	Process & Instrumentation Diagram, HVAC & Miscellaneous

Reference Drawing No.	Drawing Name/Title
396	Charleswood Interceptor, Special Manhole, Roblin Blvd. & Comm. Row
398	Charleswood Interceptor, Community Row, Junction Chamber
399	Charleswood Interceptor, Location Plan – Profile & Details of Community Row Pumping Station and Connections
400	Charleswood Interceptor, Pumping Station at Community Row & Roblin Blvd.
400A	Charleswood Interceptor, Reinforing Details for Pumping Station at Community Row & Roblin Blvd.
400B	Charleswood Interceptor, Pumping Station at Community Row & Roblin Blvd.
401	Charleswood Interceptor, Superstructure Details for pumping Sta. At Comm. Row
405	Charleswood Interceptor, Community Row – Gate Chamber
1125	Community Row Pumping Station, Temporary Pumping
1126	Community Row Pumping Station, Site Plan
S-263	Charleswood Interceptor, Community Row Construction Easement

E2. SOILS INVESTIGATION REPORT

E2.1 Further to C3.1, the document titled “Geotechnical Investigation, Proposed Pumping Station Addition, 5719 Roblin Blvd, Winnipeg, Manitoba”, dated June 19, 2017, and prepared by SNC-Lavalin Inc., is included with this Bid Opportunity.

E3. ASBESTOS AND LEAD PAINT ANALYSIS REPORTS

E3.1 The "Asbestos Laboratory Certificate of Analysis", dated June 16, 2017, and "Analysis for Lead Concentration in Paint Chips" report, dated June 19, 2017, and prepared by Pinchin Ltd., are included with this Bid Opportunity.

(a) The Contractor is advised that no asbestos was found in the Community Row Wastewater Pumping Station.

(b) The Contractor is advised that elevated concentrations of lead where found to be contained in the paint and therefore appropriate lead precautions are required when stripping the paint.

GENERAL REQUIREMENTS

E4. HAZARDOUS MATERIALS

E4.1 Further to E3, if asbestos or other hazardous materials (not including lead paint) 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 via a Contract Change Order or by the City, and the Contractor shall await further instruction by the Contract Administrator.

E5. SPECIFIC REQUIREMENTS

E5.1 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.

E5.2 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.

E5.3 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.

E5.4 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.

E5.5 Wire nuts

(a) Wire nuts are not permitted in conduit bodies,

(b) Wire nuts are permitted in junction boxes for lighting and receptacle wiring only, and

(c) Wire nuts are not permitted for any automation or HVAC wiring.

E5.6 All conduit routes shall be approved by the Contract Administrator prior to installation of new conduit.

E6. SURVEYING

E6.1 There are surveying requirements within the Work. All surveying requirements are the responsibility of the Contractor, and will be paid for by the Contractor.

(a) The Contractor shall provide all survey and layout work necessary to accurately layout and position the new construction to the lines and elevations shown on the drawings. There will be no field survey resources provided by the City or the Contract Administrator at any time to assist with the construction or layout activities. Elevations and dimensions as shown on the current project drawings are considered accurate and should be followed for the field work. The Contract Administrator, at their sole discretion, may undertake a confirmatory survey of the Contractor's work if considered necessary as construction progresses.

(b) The Contractor is responsible for providing accurate UTM coordinates for any new underground structures, underground valves, or underground piping to allow for the Contract Administrator to produce record drawings in accordance with the City of Winnipeg CAD-GIS standard.

(i) The CAD-GIS standard is available on the CAD-GIS Standards page at The City of Winnipeg, Water & Waste Division website at http://winnipeg.ca/waterandwaste/dept/cad_gis.stm.

E7. PRE-CONSTRUCTION PHOTOGRAPHS

E7.1 The Contractor is responsible for taking photographs and/or video of the surrounding structures, houses and landscaping in order to establish the condition of the area around the pumping station prior to commencement of the Work. The pictures and/or video must be submitted to and approved by the Contract Administrator prior to the commencement of the Work.

E8. EQUIPMENT SUPPLIED BY OTHERS

E8.1 The City will supply the following equipment:

E8.1.1 Process Mechanical:

(a) Three (3) 450 l/s (7,132 US gpm) dry-pit pumping units complete with pump supports and suction elbows, for installation as indicated in the Specifications and Drawings.

(b) Three (3) 93.3 kW (125 hp) pump motors and driveshaft assemblies, for installation as indicated in the Specifications and Drawings.

(c) Three (3) 400 mm (16 inch) pump suction gate valves, for installation as indicated on the Specifications and Drawings.

(d) Three (3) 400 mm (16 inch) pump discharge gate valves, for installation as indicated on the Specifications and Drawings.

(e) Three (3) 400 mm (16 inch) check valves, for installation as indicated in the Specifications and Drawings.

(f) Three (3) 120Vac pump seal water solenoid valves, for installation as indicated on the Specifications and Drawings.

(g) One (1) cellular modem for installation into control panel CP-L81.

E8.1.2 The Contractor will receive a minimum of 2 days notice prior to delivery of items. Any special equipment required to receive these items is the responsibility of the Contractor and is considered incidental to the Contract Work and shall be done at the Contractor's expense.

E8.1.3 Inspection of the installed pumping units will be performed by a qualified technical representative from the manufacturer of the pumping units. The cost of the initial inspection will be paid for by the City.

E8.1.4 Provide the Contract Administrator with seven (7) days notice of when pumps will be installed to allow for arrangements to be made with the pump supplier for initial start-up inspection.

E8.1.5 The Contract Administrator will supply arc flash stickers for the electrical equipment.

E9. EQUIPMENT AND MATERIALS

E9.1 The Contractor shall supply all equipment and materials necessary to execute the work, except for the equipment and material listed in E8 and as shown on the Drawings to be re-used.

E9.2 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.

E10. SECURITY

E10.1 The Contractor is responsible for all material and equipment stored on the site, including equipment and material listed in E8 once that material has been received by the Contractor.

E10.2 Provide a chain-link fence around the construction site and lock after working hours. Supply five (5) copies of the key to the City.

E10.3 The Contractor is responsible for ensuring the security of the pumping station.

E10.4 Provide and pay for responsible security personnel to guard the site and contents of site after working hours whenever:

(a) The pumping station or any associated piece of equipment is not locked and fully secure; or

(b) Temporary bypass pumping that is active and not contained within the Contractor's chain-link fence around the construction site.

E10.5 Costs for security shall be considered incidental to the Contract Work and shall be done at the Contractor's expense.

E11. SALVAGE

E11.1 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.

E11.2 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.

E11.3 The Contactor shall remove and haul all rejected salvage from the site and legally dispose of it.

E11.4 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.

E12. DANGEROUS WORK CONDITIONS

E12.1 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.

E12.2 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.

E12.3 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.

E12.4 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.

E12.5 Workers must wear a respirator or supplied air at all times when entering an underground chamber, manhole or sewer where live sewage is present.

E12.6 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.

E12.7 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.

E12.8 Scaffolding will be required to work at high elevations, such as the upper space of the motor level.

E13. PROTECTION OF EXISTING TREES

E13.1 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.

E13.1.1 Do not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.

E13.1.2 Strap mature tree trunks with 25 x 150 x 2400 wood planks. Smaller trees shall be similarly protected using appropriately sized wood planks.

E13.1.3 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.

E13.1.4 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.

E13.1.5 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.

E13.2 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.

E13.3 Costs for protection of trees shall be considered incidental to the Contract Work and shall be done at the Contractor's expense.

E14. TEMPORARY USE OF CITY EQUIPMENT

E14.1 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.

E15. EXISTING PUMPING STATION OPERATION DURING CONSTRUCTION

E15.1 The facility related to the Work is critical to the transport of wastewater for the City of Winnipeg. Under no condition shall the station pumping be shut down without prior permission from the Contract Administrator.

E15.2 The Contractor is advised that the existing Community Row Wastewater Pumping Station will be allowed to be taken out of operation only after the Contractor's schedule of activities, including provisions for temporary by-pass pumping operations, 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.

E15.3 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.

E16. TEMPORARY SHUTDOWN OF PUMPING OPERATIONS

E16.1 Temporary shutdown of pumping operations will be allowed for the following work activities:

(a) Reconnection of the electrical service,

(i) The Contractor will be required to provide a temporary generator as required to maintain pumping operations.

(b) Installation of the high level switch (LSH-S950) in the downstream interceptor sewer, and routing of the level switch cabling through the sewers. Work on this activity may have to stop for periods of time to allow for pumping operations to resume.

(c) Switch-overs between station pumps and temporary bypass pumps.

E16.2 Sequence work such that a minimum amount of shut-down time at the Station is used for the above mentioned activities.

E16.3 All shutdowns must be reviewed and approved by the Contract Administrator prior to the shutdown. Prepare and submit shutdown plans to the Contract Administrator a minimum of 48 hours prior to the proposed shutdown.

E16.4 Operation of all City-owned equipment (eg. gate valves) will be by the City unless prior approval is given to the Contractor.

E16.5 The Contractor shall monitor the upstream system at all times to ensure the stored level of wastewater will not exceed the critical basement elevation. This elevation will be provided to the Contractor.

E16.6 Schedule work activities requiring shutdown of pumping operations 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.

E16.7 Water and Waste Department, Collection System personnel will be available to provide assistance to the Contractor for temporary shutdown of the pumping operations to facilitate completion of the Work.

E16.8 There will be no charge to temporarily shutdown the wastewater pumping station to facilitate completion of the Work.

E16.9 If an unreasonable number of station shutdowns are required to complete the Work 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.

E16.10 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.

E16.11 Consecutive back-to-back station shutdowns will not be allowed until the sewer system has returned to normal.

E17. EXCAVATION

E17.1 Remove existing surface installations as shown on the project drawings, as required to allow the excavation work to proceed without damage to existing installations. For installations that are to be reinstalled after completion of the work, store all materials in a secure location, away from the work area.

E17.2 All excavation work to be in accordance with CW 2030.

E17.3 Remove excavated materials from the site immediately. Excavated material shall not be stockpiled on-site unless it will be used as backfill the same day it is excavated.

E17.4 Place bedding and fill in accordance with CW 2030.

E17.5 Hydrovac excavation is required for the removal of material in the vicinity of existing sewers.

E17.6 All working areas below grade shall be kept adequately and securely supported during and after excavation until the shoring and bracing is in place to prevent loss of ground and injury to any person from falling or caving material.

E18. PUMP START UP

E18.1 New pumps supplied by the City and installed by the Contractor shall not be started up by the Contractor without approval from the Contract Administrator. The Contractor shall provide the Contract Administrator his proposed schedule for each pump start up at least one week in advance in order to allow time for the Contract Administrator to make arrangements with the pump supplier to be present for the start up.

E18.2 If any new pumping equipment (pumps, motors, drive shafts, or valves) fails to operate or perform properly and has to be removed for service as determined by the Contract Administrator, the Contractor shall provide a quote for removal of the equipment and make arrangements with the pump supplier to have the equipment taken to the Supplier's shop. If the quotation is accepted by the Contract Administrator, the City will pay the Contractor the price indicated in the quotation for this Work.

E18.3 The Contractor shall be responsible for the re-installation of the pumping equipment once it has been repaired or replaced.

E18.4 The pumping equipment supplier and contact for this Contract is:

Power and Mine Supply Company Ltd
4 – 75 Meridian Drive
Winnipeg, Manitoba
Attention: Cam Wilson, P.Eng.
Telephone: (204) 694-9300

E19. WET WEATHER FLOWS

E19.1 In the event the flow in the sewer system is expected to exceed the amount indicated for PDWF due to wet weather runoff, the Contract Administrator may suspend work activities that interrupt pumping operations, such as temporary shutdowns. Suspension of these activities will continue until the high flow diminishes in the sewer system.

E19.2 In the opinion of the Contract Administrator, if suspension of work activities due to wet weather flows cause a delay in completion of the Work through no fault of the Contractor, the completion date of the Work will be adjusted accordingly.

E19.3 There shall be no claim for additional costs or time due to wet weather flows.

E20. MOBILIZATION AND DEMOBILIZATION

E20.1 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.

E20.2 Refer to Specification 01 52 00 Construction Facilities, and all other specifications that may apply.

E20.3 Measurement and Payment

E20.3.1 A maximum of 50% of Form B, “Mobilization and Demobilization”, 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.

E20.3.2 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 D15.

(b) The contractor has mobilized equipment and initiated work on Site.

E20.3.3 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.

E21. BYPASS MANHOLE AND VALVE ASSEMBLY

E21.1 Description:

E21.1.1 A man hole assembly shall be installed immediately south of the Station on the existing underground bypass pipe to allow temporary bypass pumping operations to take place for the duration of the upgrades. This manhole assembly shall be a standard COW manhole and shall include the installation of a buried gate valve on the bypass pipe at the new manhole assembly.

E21.2 Materials:

E21.2.1 The following items shall be procured and installed by the Contractor, and are shown on drawing 1-0130L-C0001.

(a) One (1) 375 mm (15 inch) gate valve complete with valve stem extension and valve box. Gate valve to conform to current AWWA C509 Standard for Resilient Seated Gate Valves. Valve to be epoxy coated cast iron with Buna-N encapsulated disc trim; O-ring type stem seals; counter-clockwise opening non-rising spindle; complete with valve box, extension spindle, 50 mm square nut, stone disc, and metal valve box cover.

(i) The Contractor is responsible for verifying the length of valve stem extension required.

(b) One steel mechanical joint to connect gate valve to existing 350 mm (15 inch) pipe.

(c) Precast reinforced concrete manhole to City of Winnipeg SD-010.

E21.3 Scope of Work

(a) Survey and locate all existing services and limits of proposed manhole excavation relative to existing structures. The contractor shall provide all survey and layout work necessary to accurately layout and position the new construction. The Contractor should complete a Geotechnical survey to ensure that the excavation is suitable for the manhole assembly. The Contract Administrator, at their sole discretion, may undertake a confirmatory survey of the Contractor's work if considered necessary.

(b) Design, supply and install shoring system necessary for opening the new excavation to the required depth and dimensions necessary to install the new manhole assembly.

(c) All excavations within 1.5 m of sewers to be soft dug, either hydro excavated or by hand, as necessary to avoid potentially damaging the existing sewers.

(d) Any service interruption shall conform to Section E15 and E16.

E21.4 Specifications

E21.4.1 Backfill

(a) Place and compact backfill material as indicated on the Drawings in accordance with CW2030. Do not place backfill material in a frozen state. Supply heating and hoarding in accordance with CW2160 if required to ensure material does not freeze before compaction is complete.

E21.4.2 Excavation Security Fence

(a) Further to Clause 3.1 of CW 1130, completely cover the excavation and provide a security fence to completely surround the excavation when unattended in accordance with the following:

(i) Security fence shall be chain link fence or approved equal, a minimum 1.80 metres high with metal support posts embedded far enough into the ground and spaced close enough together so the fence will not sag or collapse.

(ii) Attach fencing securely to posts.

(iii) Secure the gate or end of the fencing to a post with chain and a padlock.

(iv) Provide alternate security fence proposal to Contract Administrator for approval.

E21.5 Measurement and Payment

E21.5.1 Payment will based on Form B, "Bypass Manhole and Valve Assembly", 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.

E22. FLOW CONTROL AND TEMPORARY BYPASS PUMPING

E22.1 Description:

E22.1.1 This specification covers flow control in existing sewers and temporary bypass pumping of flow during the installation of the wastewater pumping units and station modifications at the Community Row Wastewater Pumping Station.

E22.1.2 There are two wastewater infeeds to the Community Row Wastewater Pumping Station. One infeed is a 900 mm (36") gravity main from Gate Chamber "A" located immediately north of the Pumping Station. The second infeed is a 900 mm (36") gravity main from

Junction Chamber “B” located south of the Pumping Station in the Community Row / Roblin Blvd. Intersection. Between Junction Chamber “B” and the pumping station wetwell, a 200 mm (4”) wastewater sewer pipe connects to the 900 mm gravity main.

E22.1.3 Community Row Pumping Station discharges to an existing Special Manhole “C” located at the south west corner of the Community Row / Roblin Blvd. intersection. The intent of the bypass pumping is to redirect all wastewater from Gate Chamber “A”, Junction Chamber “B”, and the 200 mm sewer, to this special manhole.

E22.1.4 It is expected that temporary bypass pumping will occur separately for each infeed.

(a) The flow from Gate Chamber “A” will discharge into the Special Manhole “C” via the new bypass manhole assembly; and,

(b) The flow from Junction Chamber “B” and the 200mm WWS will discharge into Special Manhole “C” via the existing overflow piping connecting Junction Chamber “B” to Special Manhole “C”.

E22.2 Materials

E22.2.1 Inflatable Rubber Sewer Plugs:

(a) Made of rubber, capable of remaining in place when inflated to the pressure required to withstand the expected sewer levels.

(b) Provided with an inflation/deflation hose, monitoring pressure valve, removal rope or cable and safety chain, all of sufficient length to reach ground elevation for monitoring and removal.

(c) Sewer Plugs must be installed in pairs at a minimum for redundancy.

E22.2.2 Temporary Bypass Pumping Equipment

(a) Non-clog, submersible pumping units, each sized to meet or exceed the required capacity. Complete with all required piping, fittings, level transmitters, float switches, and pump controls suitable for temporary installation in the gate and junction chambers.

(b) Pumps to be VFD driven and controlled by water level. Contractor to supply VFD’s and level monitoring equipment for temporary bypass pumping. On/off control of the bypass pumps is not acceptable due to operational limitations at the West End Water Pollution Control Centre (WEWPCC).

(i) A level transmitter (eg. ultra-sonic or radar level transmitter) will be required in Gate Chamber “A” and Junction Chamber “B” to provide level signals to the pump controllers for level control.

(c) Provide firm capacity pumping at Gate Chamber “A” and Junction Chamber “B” to 100% of Peak Dry Weather Flows, as described in E22.3.2. At minimum, one redundant pump is required at each bypass pumping point.

(d) Due to space restrictions, self-priming, non-submersible pumps of similar capacities can be considered.

(e) Allowable sound level at 7.0 meters distance is 65 dba.

(f) Provide model and capacity curves to the Contract Administrator for approval.

(g) Power supply to be suitably sized for pumping equipment complete with all required controls. Fuel to be in lockable, tamperproof container, approved by Contract Administrator.

(h) Provide and install temporary high level float switches within Gate Chamber “A” and Junction Chamber “B” where the temporary pumps are located. Connect the high level float switches to the existing RTU panel to provide high level alarming to the City’s Supervisory Control and Data Acquisition (SCADA) system. The Station’s control panel shall remain in service during temporary pumping operations to facilitate remote monitoring of the levels. Note that it is permitted to relocate the RTU panel as required to facilitate the Work. If the control panel is temporarily taken out of service

the Contractor shall provide on-site personnel to continually monitor the wastewater levels until such time that remote alarming to the City's SCADA system is restored.

E22.2.3 Fittings and Appurtenances

(a) Fittings, couplings and appurtenances to be used for repairs to existing forcemains and sewers to be approved products for underground use in the City of Winnipeg.

(b) The Contractor is responsible for all equipment required for the temporary bypass pumping connections.

E22.2.4 Bedding and Backfill

(a) Bedding and initial backfill material to be sand in accordance with CW 2030.

(b) Backfill excavations in pavement areas to be Class 3 in accordance with Clause 3.8.3 of CW 2030. Backfill in excavations in boulevard areas to be Class 5 in accordance with Clause 3.8.3 of CW 2030.

E22.3 Construction Methods

E22.3.1 General

(a) Maintain level of sewage in existing sewers below the critical basement elevation at all times.

(b) Provide a flow control plan to the Contract Administrator for review before construction starts.

(c) Diversion of wastewater flow directly or indirectly to the environment, Land Drainage Sewers or Storm Relief Sewers will not be allowed.

E22.3.2 Expected Wastewater Flow to the Community Row Wastewater Pumping Station

(a) Current station capacity at Community Row is approximately 533 l/s. This flow is based on inflows from both infeed lines. Since these two inflows will be pumped separately, temporary by pass pumping will require two flow rates. Estimated PDWF from the Gate Chamber "A" is 220 l/s; and the flows coming from Junction Chamber "B" is 313 l/s.

(b) Combined sewers can receive flow of an undetermined amount from watermain breaks, precipitation, snow melt and other unforeseen sources. The Contractor will be responsible to monitor the flow in the sewer and adjust or halt work activities accordingly due to unforeseen flow above the amount identified for PDWF.

E22.3.3 Inflatable Sewer Plugs

(a) Only inflatable rubber sewer plugs shall be used to plug sewers.

(b) Clean sewer pipe as required to properly install inflatable sewer plug(s) in accordance with the manufacturer's instructions to isolate the installation location. There must be a second plug installed at every point of isolation for redundancy. Installation of inflatable sewer plugs to be approved by the Contract Administrator before construction starts.

(c) Secure inflatable sewer plugs at or near the ground surface.

(d) Continuously monitor air pressure while sewer plug is in place and have proper inflation equipment available at all times.

(e) Inflatable sewer plugs will be installed to ensure forcemain isolation during shutdown of the forcemains as required during construction.

E22.3.4 Temporary Bypass Pumping

(a) For bypass pumping operations, provide a minimum of two submersible pumps at all times, each with a firm capacity equal to or greater than the listed PDWF for that station. Both pumps are to be installed and available for operation. A replacement pump with the required capacity shall be immediately provided if one of the two original pumps has to be removed from the site for repairs.

(i) A combination of smaller sized pumps may be used concurrently if the firm pumping capacity of the pumps meets the capacity requirements identified in E22.3.2 and providing replacement pumps are available on-site to maintain the PDWF volume.

(b) Installation locations of the temporary by-pass pumps must be approved by the Contract Administrator prior to installation.

(c) Provide detailed information for pumping equipment to be used including pump capacity and dimensions, depth of submergence, pump controls and installation details to the Contract Administrator for review before construction starts.

(d) Power supply to be approved by the Contract Administrator before set-up. Locate the power supply where it will not adversely affect local residences. Location to be approved by the Contract Administrator before construction starts.

(e) Provide suitable traffic ramps approved by the Contract Administrator if the by-pass pumping discharge pipe and power supply cables are laid across vehicle or pedestrian traffic areas.

(f) Provide a check valve on the by-pass pumping discharge pipe to prevent cycling when the pumping station is activated.

(g) The Contractor is advised that the pumping station will remain in service while the work is being completed, except for planned temporary shutdowns as described in E16. The Contractor shall cooperate and coordinate with the City to allow full access at all times for City staff to carry out maintenance and operational duties.

(h) Arrange construction activities and schedule to be able to remove temporary inflatable sewer plug(s) and restore pumping station operation at the end of by-pass pumping operations.

(i) The Contractor shall ensure temporary bypass pumping equipment and materials will be properly insulated and heated, if required, to be protected from freezing and to maintain proper functioning during cold weather.

(j) Temporary by-pass pumping equipment and materials shall remain on-site until station construction is completed as described in these Specifications and to the satisfaction of the Contract Administrator, and until the new pumps have operated for a minimum of 48 hours without incident.

E22.3.5 Responsibility

(a) The Contractor will take full responsibility for the temporary bypass pumping, including high water events.

(b) The Contractor will provide a 24-hour contact person who can address any issues with the bypass pumping.

(c) The Contractor is responsible for the Station upon mobilization.

E22.4 Measurement and Payment:

E22.4.1 Payment will be based on Form B, “Flow Control and Temporary Bypass Pumping”, 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.

E23. CIVIL AND LANDSCAPING WORK

E23.1 Temporary Access Roadway

(a) Construct and maintain a temporary access roadway along the unimproved road allowance from McCallum Crescent south to the site by means of the placement of granular fill having sufficient depth, width and gradation to sustain construction loads for the duration of the project, to the satisfaction of the Contract Administrator.

(b) At the conclusion of the work, completely remove and properly dispose of the granular fill and restore the road allowance in accordance with section E23.3

E23.2 Driveway Modification

(a) Modify the concrete paving/driveway as shown on the drawings

(b) Concrete in accordance with CW 3310.

(i) Type 1 concrete for pavements and commercial approaches.

(ii) Concrete Slab thickness: 200 mm

(iii) Reinforcing steel to be bar mat 'A' reinforcement in accordance with CW SD-217.

(c) Subgrade preparation, Base and Sub-base in accordance with CW 3110

(i) Sub-Base to be 150 mm thick of 50 mm crushed granular sub-base material.

(ii) Base to be 75 mm thick crushed granular base course.

(d) Tie into existing pavement with dowels and seal joint in accordance with CW 3230.

E23.3 Sidewalk

E23.3.1 Construct new concrete sidewalk as shown on the drawings in accordance with CW3325 and SD 228A.

E23.4 Site Grading

E23.4.1 Finish grade to be flush to the top of existing concrete/new sidewalk adjacent the east side of the existing building, and sloped to provide positive drainage away from the existing building and the new emergency generator enclosure.

E23.5 Site Restoration

E23.5.1 Restoration of all existing surface areas disturbed by construction activities including but not limited to; excavation for new MH assembly, 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.

(f) All private property adjacent the site disturbed by construction activities relating to the work to be restored to its pre-construction condition to the satisfaction of the Contract Administrator.

E23.6 Measurement and Payment:

E23.6.1 Payment will be based on Form B, "Civil and Landscaping Work", 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.

E24. WET WELL CLEANOUT

E24.1 The Contractor shall be responsible for the clean out of the wet well, initially to inspect the overall condition of the wet well walls and dividing wall, and throughout the duration of the

project to maintain a clean wet well and prevent debris from entering the pumps upon initial startup.

E24.2 Clean out shall be performed by mechanical or manual methods and shall remove grit, tallow and other buildup to the satisfaction of the Contract Administrator.

E24.3 The current level of accumulation in the Wet Well is not known. Higher levels of accumulation, above that anticipated by the Contractor, will not be eligible for additional payments.

E24.4 Schedule upstream work that may produce debris prior to wet well cleanout.

E24.5 The Contractor shall also ensure that all construction material and debris are removed from the wet well after completing the works and prior to station startup and commissioning.

E24.6 The Contractor shall be responsible to maintain a clean wet well during construction.

E24.7 Provide evidence of the Wet Well clean out in the form of photographs, or other suitable means, acceptable to the Contract Administrator.

E24.8 Costs for clean out of wet well shall be considered incidental to the Contract Work and no additional payment will be made beyond the amount indicated for Form B.

E24.9 Under no circumstances will the City pay for more than one clean out of the Wet Well. In the event that the areas are not clean at the end of the associated mechanical work, the Contractor is responsible for bearing the cost of re-cleaning.

E24.10 Measurement and Payment:

E24.10.1 Payment will be based on Form B, “Wet Well Cleanout”, 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.

E25. STRUCTURAL AND ARCHITECTURAL WORK

E25.1 Replacement of Facia, Soffits, and Eavestroughing (Existing Building)

E25.1.1 Remove and properly dispose of the facia, soffits, and eavestroughing.

E25.1.2 Repair or replace damaged wooden sub-facia.

E25.1.3 Install new prefinished facia and soffits on all but the north gable.

E25.1.4 Install eavestroughing incorporating combined drainage requirements (including but not limited to downspouts, splash pads) for the existing building and the new standby generator building.

E25.2 Replacement of Siding (Existing Building)

E25.2.1 Remove and properly dispose of existing vinyl siding on both gable ends, and install new prefinished vinyl siding on the south gable end in a colour and profile to the approval of the Contract Administrator.

E25.3 Replacement of Roof (Existing Building)

E25.3.1 Remove and properly dispose of existing roof shingles; ensure all nails and staples are removed and prepare surface for new membrane and metal roofing system.

E25.3.2 Properly modify roof north overhang to provide clearance for installation of new piling for standby generator building.

E25.3.3 Install new prefinished metal roofing system in a colour and profile approved by the Contract Administrator. Install to provide a weather-tight assembly allowing for differential movement between the existing building and the new standby generator building.

E25.4 New Mechanical Openings (Existing Building)

E25.4.1 Neatly provide required openings through the existing brick/block as indicated.

E25.4.2 Repair masonry as required.

E25.4.3 Supply and install framing for mechanical openings as indicated, provide weather-tight assembly.

E25.5 Interior Architectural Works (Existing Building)

E25.5.1 Remove all expanded-foam insulation throughout all levels on all surfaces.

(a) Replace main floor insulation with new interior stud wall, batt insulation, vapour barrier, and plywood sheathing. Prime and paint main floor walls with satin ANSI 70 grey. NOTE: North wall of existing building to receive strapping, sheathing, primer and paint only – vapour barrier and insulation is not required at this location.

(b) Replace below grade wall and ceiling insulation and first floor stairwell insulation with new Roxul Prorox SL 960 NA mineral fiber insulation covered by plywood sheathing. Prime and paint below grade plywood sheathing semi-gloss white. NOTE: surfaces below 2m of grade need not be insulated.

E25.5.2 Remove ceiling, compromised vapour barrier, and batt insulation. Install new complete vapor barrier and gap-free plywood ceiling, and insulate with new R20 batt insulation. Prime and paint the ceiling satin white.

E25.5.3 Remove paint from all concrete surfaces. NOTE: the existing paint is known to contain lead (refer to the included lead analysis report by Pinchin Inc). Scaffolding will be required. Dispose of resulting debris off site in accordance with the regulations of the authority having jurisdiction. Notify the Contract Administrator in the event of the discovery of damaged or unsound concrete. Prime and paint exposed walls and ceilings in semi-gloss white, in accordance with the contract documents (floors are not re-painted and are left bare).

E25.6 Interior Structural Works (Existing Building)

E25.6.1 Remove and dispose of all existing insert-mounted, plate-type lifting eyes from the pump room ceiling. NOTE: all cast-in-place, eyebolt-type lifting devices from the original construction are to remain.

E25.6.2 Install three (3) new plate mounted lifting devices on the pump room ceiling in accordance with the contract documents.

E25.6.3 Paint (safety yellow), label, test, document and certify for use each of one (1) existing main floor monorail crane, one (1) existing motor room jib crane, six (6) existing pump room eyebolt-type lifting devices, and three (3) new plate mounted lifting devices in accordance with the contract documents.

E25.6.4 Form and place dowels and reinforcing to reinstate motor room floor diaphragm directly over existing floor such that disused openings are covered and required openings for new pipes are accommodated. NOTE: Do not sawcut the pipe openings through existing floor until the new concrete floor diaphragm has cured for 21 days.

E25.6.5 Enlarge the existing rectangular pipe opening in Motor Room floor to the extents shown. Sawcut the existing floor to accommodate new pipes. Ensure that all rebar exposed by sawcutting is treated with epoxy paint. Use caution not to overcut corners.

E25.6.6 Install new pads and pedestals on the pump room floor in accordance with the drawings.

E25.6.7 Existing Roto-Trol float level indicator:

(a) Remove the existing Roto-Trol float level apparatus, including the 40 mm (1 ½") diameter copper pipe sleeve that forms the wall penetration.

(b) Patch the resulting hole with Xypex Patch'n Plug in accordance with the Manufacturer's written instructions.

E25.6.8 Clean, examine, and repair locations of efflorescence and moisture migration on existing concrete surfaces as indicated, in accordance with Xypex Specification Manual Repair Procedures.

E25.6.9 Apply Xypex concentrate (white) cementitious crystalline waterproofing material to the concrete surfaces indicated in accordance with the Manufacturer's written instructions.

E25.7 Exterior Architectural Works (Existing Building)

E25.7.1 Clean the exterior brick veneer of paints and impurities and apply anti-graffiti coating in accordance with the Manufacturer's written instructions. NOTE: the existing North wall is not included.

E25.7.2 Neatly gouge the embedded blocking (visible on North East corner) from within the concrete curb, and fill the resulting cavity with non-shrink grout.

E25.8 Construction of the new Standby Generator Building

E25.8.1 Mark the location of all underground structures, sewers, pipes and utilities. Wait for the City to confirm the locations. Do not proceed with construction prior to receiving approval from the Contract Administrator.

E25.8.2 Perform removals and relocations necessary to begin construction.

E25.8.3 Excavate site in preparation of construction of new foundation, and properly dispose of excavated material off the site.

E25.8.4 Install new (cast-in-place reinforced concrete) piles, grade beams, structural slab, and walls. NOTE: new walls to incorporate framing/blocking to accommodate installation of doors and louvers as required.

E25.8.5 Install new brick veneer cavity wall assembly.

E25.8.6 Install new prefabricated wooden roof trusses.

E25.8.7 Install new plywood roof sheathing and membrane.

E25.8.8 Install new prefinished metal roofing system in a colour and profile approved by the Contract Administrator. Install to provide a weather-tight assembly, allowing for differential movement between the existing building and the emergency generator enclosure.

E25.8.9 Install new prefinished vinyl siding on the north gable end in a colour and profile approved by the Contract Administrator.

E25.8.10 Install new prefinished facia and soffits.

E25.8.11 Install eavestroughing incorporating combined drainage requirements (including but not limited to downspouts, splash pads) for the existing building and the new emergency generator enclosure.

E25.8.12 Install new strapping and plywood sheathing. Prime and paint white. NOTE: strapping and sheathing is required on the north face of the brick veneer of the original building.

E25.8.13 Install new batt insulation, vapour barrier and plywood ceiling. Prime and paint white.

E25.8.14 Clean the brick veneer of paints and impurities and apply anti-graffiti coating in accordance with the Manufacturer's written instructions.

E25.8.15 Install new door and louver framing in accordance with the drawings. Install to provide a weather-tight assembly.

E25.8.16 Install new louvers (refer to Mechanical).

E25.9 Measurement and Payment:

E25.9.1 Payment will be based on Form B, “Structural and Architectural Work”, 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.

E26. PROCESS MECHANICAL WORK

E26.1 Description

E26.1.1 This Specification covers the process piping, equipment, and materials for the Community Row Wastewater Pumping Station.

E26.1.2 The Contractor shall remove the existing pumping units, motors, piping, equipment and materials as required and install new pumping units, piping, equipment and materials as shown on the drawings or as indicated by the Contract Administrator.

E26.1.3 Mechanical drawings indicate general layout only. The Contractor is responsible for confirming all dimensions prior to manufacture of piping.

E26.1.4 All equipment and material shall be supplied by the Contractor except as listed in E8.

E26.2 Materials

E26.2.1 Pumping Units

(a) Three (3) pumps shall be supplied by the City as indicated in E8.

E26.2.2 Pump Motors

(a) Three (3) pump motors complete with driveshaft assemblies shall be supplied by the City as indicated in E8.

E26.2.3 Gate Valves

(a) Three (3) 400 mm (16 inch) non-rising stem gate valves for the discharge side of the pump shall be supplied by the City as indicated in E8.

(b) Three (3) 400 mm (16 inch) rising stem gate valves for the suction side of the pump shall be supplied by the City as indicated in E8.

E26.2.4 Discharge Check Valves

(a) Three (3) 400 mm (16 inches) check valves shall be supplied by the City as indicated in E8.

E26.2.5 Ductile Iron Piping and Fittings

(a) All piping shall be Class 52 ductile iron or ASTM Carbon steel Schedule 80 thickness.

(b) Cast Iron fittings shall conform to AWWA C110.

(c) Fabricated fittings shall conform to ASTM A53 carbon steel grade B, Schedule 800 wall thickness.

(d) Steel fittings shall be ASTM A234 grade B carbon steel, Schedule 80 wall thickness. Dimensions shall be to ANSI B16.9.

(e) All welded steel flanges shall be in conformance with AWWA C207, Class B.

(f) In order to maintain the required build schedule, schedule 10 304L stainless steel can be substituted with the agreement of the Contract Administrator.

(g) Submit shop drawings in accordance with Section 01 33 00.

E26.2.6 Large Diameter Flanges and Adaptor Flanges

(a) Thread-on flanges for Ductile Iron Pipe: AWWA C115 or ASME B16.1.

(b) Adaptor flanges: Ductile Iron, Grade 65-45-12, conforming to the current ASTM Standard A536 for Ductile Iron Castings. Bolt holes shall be drilled in accordance with AWWA C115 or ASME B16.1.

(c) Clamping screws on adaptor flanges shall be zinc-plated, heat treated steel with a minimum tensile strength of 28 MPa.

(d) Submit shop drawings in accordance with Section 01 33 00.

E26.2.7 Dismantling Joints

(a) Use Dresser style 131 dismantling joint with tie rods or equivalent in accordance with B7.

(b) Materials:

(i) Spool Piece: Steel – AISI C1010-C1015

(ii) Flange Adapter: Steel – AISI C1010-C1015

(iii) Tie Rods: Steel – ASTM A193 Grade B7

(iv) Nuts: ASTM A194 Grade 2H

(v) Gasket: Grade 27 BUNA S

(vi) Coatings: Fusion Bonded Epoxy

E26.2.8 Miscellaneous Metal Fabrications

(a) As per Section 05 50 00.

E26.2.9 Pipe Supports and Hangers

(a) Pipe supports and hangers to be as shown on the Drawings and in accordance with Section 05 50 00.

E26.2.10 Copper Water and Drain Piping

(a) As per Section 22 11 18

E26.2.11 Backflow Preventer, Hose Bibs, and Strainers

(a) As per Section 22 42 01.

E26.2.12 Sump Pump

(a) As per Section 22 10 10.

E26.2.13 Seal Water Control and Monitoring Unit

(a) John Crane Safeunit, or approved equal in accordance with B7, flow and pressure regulating unit with optional low flow alarm. TYPE SFD, compatible with City supplied pumps. Flow up to 8 L/min, pressure to 10 bar. Seal connections compatible with City supplied pumps. Include mounting bracket and DC-1 Alarm. Provide one (1) manufacturer-supplied mounting bracket for each of the three (3) pumps.

(i) Provide one (1) complete unit for each of the three (3) pumps, plus one (1) spare unit complete with DC-1 alarm (no spare mounting bracket required).

E26.2.14 Fasteners

(a) Flange nuts and bolts shall be ASTM A276, Type 316 stainless steel sized to requirements of flange. Thread-on bolts to extend past nut a minimum of 6 millimetres.

(b) Anchors shall be Kwik-bolt or Rawl Stud ASTM A276, Type 316 stainless steel. Embedment depth and size, where not shown on the Drawings, to be as required for load being carried or resisted.

E26.2.15 Gaskets

(a) Flange gaskets shall be full faced rubberized cloth gaskets, 3mm in thickness.

(b) Rubber gaskets for adaptor flanges shall conform to AWWA C111, Standard for Rubber-gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings.

E26.2.16 Paint

(a) As per Section 09 91 23.

E26.2.17 Ball valves

(a) Bronze body type: shall have a bronze body, follower and bronze, brass, or chrome plated ball, Buna-N seal and seat, threaded joints, and a hand operating lever.

E26.2.18 Sight Glass

(a) Two (2) new sight glass units will be installed in the lift station at the pump room level. Sight glass will be installed complete with flush lines, breather tube and level transmitter.

(i) Sight glass piping and fittings to be Schedule 80 PVC.

(ii) Level Transmitter: Supply and Installation falls under the Automation Work line item on Form B.

E26.2.19 PVC Piping and Fittings:

(a) Schedule 80 PVC piping and fittings to ASTM D1785 - Standards for PVC Plastic Pipe.

(b) PVC Ball Valves (for use with PVC pipe only): shall have a PVC body conforming to the current ASTM Standard D1784, Standard for PVC Rigid PVC compound; ASTM D1785, Standard for PVC Plastic Pipe; ASTM D2467, Standard for PVC Pipe Fittings (Schedule 80); and shall have an EPDM or Teflon seat, a hand operating lever and integral threaded union joints.

(c) PVC Sight Glass Pipe: Transparent PVC pipe, 50mm (2”) diameter.

(d) Solvent welded joints: Primer and solvent cement shall conform to the current ASTM

E26.3 Construction Methods

E26.3.1 General

(a) Install the new station piping and pumping equipment as indicated in this specification and shown on the Drawings. Make no changes, revisions or substitutions to the layout without obtaining written approval from the Contractor Administrator.

(b) Be aware of and contend with the wastewater in the existing forcemain when preparing to make the required piping modifications.

(c) Prior to pumping unit installation, provide a portable sewage pump and discharge hose to remove remaining wastewater in the wet well. The wastewater shall be directed to the upstream manhole or to a sewage hauler for disposal.

E26.3.2 Flow Control and Temporary By-Pass Pumping

(a) Provide flow control measures and temporary by-pass pumping in accordance with E22 of this Specification.

E26.3.3 Locating Ground Services

(a) The contractor shall be responsible for locating all services.

(b) Costs for locating the services shall be considered to incidental to the Contract Work.

E26.3.4 Existing Pump Level Controls and Alarms

(a) Maintain and protect existing pump controls and float type alarms, located in the wet well or in the other areas of the Station, during the execution of the work until all the new equipment is ready for installation.

E26.3.5 Pumping Units and Piping Installation

(a) The existing pumping station contains three (3) pumps complete with motors and drive shafts and related piping. These pumps will be replaced with three (3) new pumps complete with new motors and new drive shafts and related piping.

(b) Remove all existing piping as indicated in the Specifications and on the Drawings and replace with new piping.

(c) The Contractor will provide the installation plan to the Contract Administrator at least seven (7) days prior to commencement for approval.

(d) After new pumps and piping have been installed; all pipes and pipe welds shall be cleaned and prepared for application of primer and paint in accordance with Section 09 91 23.

E26.3.6 Miscellaneous Metal Fabrications

(a) As per Section 05 50 00.

E26.3.7 Paint

(a) As per Section 09 91 23.

E26.3.8 Cleanup

(a) Cleanup construction debris and materials inside the Station, including the wet-well at the end of each day and before pumping station operation is restored.

E26.3.9 Relocation of Water Service

(a) The existing water service shall be relocated from its current location in the motor room to the control room above ground. The City will provide a new water meter to be installed by the Contractor. The Contractor is responsible to supply and install a reduced pressure backflow preventer to Section 224201 and as shown on the drawings.

E26.4 Measurement and Payment:

E26.4.1 Payment will be based on Form B, “Process Mechanical Work”, 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.

E27. MECHANICAL BUILDING SERVICES WORK

E27.1 Scope of Work

(a) Provide new ventilation, cooling and heating system in accordance with the drawings and specifications, 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 and filter sections, and new air conditioning unit complete with economizer and heating coil. See Section 23 34 00.

(iii) Supply and installation of new wall mounted air conditioner for the main floor. See Section 23 34 00.

(iv) Supply and installation of mixing section with dampers and controls. See Section 23 09 33.

(v) Supply and installation of new, insulated ductwork. See Section 23 07 13 and Section 23 31 14.

(vi) Supply and installation of new outdoor air and exhaust openings complete with new louvers. See Section 23 37 13.

(vii) Supply and installation of a new electric unit heater. See Section 23 82 40.

(b) Supply and installation fire extinguishers as shown on the drawings. See Section 10 44 20.

(c) Coordinate with Manitoba Hydro for the provision of a new 34.5 kPa Natural gas service.

(i) All costs from Manitoba Hydro will be billed directly to the City, not the Contractor.

(d) Provide natural gas piping from Manitoba hydro meter to generator.

E27.2 Measurement and Payment:

E27.2.1 Payment will be based on Form B, “Mechanical Building Services Work”, 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.

E28. ELECTRICAL WORK

E28.1 Upgrade of the electrical service:

E28.1.1 Coordinate with Manitoba Hydro for the demolition of the existing pole-mounted transformers and associated pole(s), and installation of a new 500kVA pad-mount transformer.

(a) Manitoba Hydro will provide the pad for the transformer.

E28.1.2 Provide and install a new 600V Customer Service Termination Enclosure, CSTE.

(a) Coordinate with Manitoba Hydro for the procurement of the potential and current transformers, and the utility meter.

E28.1.3 All costs from Manitoba Hydro will be billed directly to the City, not the Contractor.

E28.1.4 Upgrade of the electrical service will likely cause interruption to pumping operations; refer to E16.

E28.2 Provide temporary 600V generation as required to maintain pumping operations.

E28.2.1 This may require long-term operation of one or more generators to provide power to a Station pump or the temporary bypass pump(s).

E28.2.2 The Contractor is responsible for all costs, including that for fuel, for temporary generation.

E28.3 Provide demolition of the existing 600V buried service cabling, MCC, pump variable frequency drives, pump motors, all cabling, lighting, light switches, receptacles, conduit, pull boxes, junction boxes, telephone cabling, the 600:120/240V transformer and panelboard, and all other items as indicated on the drawings and specifications.

E28.4 Provide demolition of the existing HVAC equipment (electrical cabling and controls, etc.).

E28.5 Provide and install new service cabling, 600V switchgear, 600V MCC, pump variable frequency drives, 600:120/208V transformer and panelboard, lighting, light switches, receptacles, conduit, pull boxes, junction boxes, telephone cabling, ground rods c/w ground wells, ground cabling, 600V standby natural gas generator, automatic transfer switch, carbon monoxide detector, and all other items as indicated on the drawings and specifications.

(a) The Contractor is responsible for coordinating with the generator supplier to determine circuit requirements for items such as the generator engine block heater, alternator strip heater, and battery charger. The Contractor is responsible for providing the required circuit breakers in Panelboard PNL-L73E for these circuits. No additional payment will be made for installation of additional required power circuits that are not already shown on the drawings.

(b) The Contractor is responsible for providing the required control signals between the automatic transfer switch and the generator control panel, as per the generator manufacturer’s recommendations. Some of these signals have been shown on drawing 1-0130L-E0017 (i.e. “Engine Start”, “On Utility Power”, and “On Generator Power”), but other control signals may be required as well. No additional payment will be made for connection of additional control signals that are required by the generator manufacturer.

E28.6 Scaffolding will be required for the installation of the new electrical service cables, core drilling for the new service cables, demolition of the existing pump motor feeder cables, installation of

the new pump motor feeder cables, and miscellaneous cables and conduits for lighting, receptacles, and controls.

E28.7 Provide temporary power and lighting to facilitate construction activities, including bypass pumping operations. It is expected a 600V supply will be required to provide power to the temporary bypass pump starters, unless the Contractor elects to utilize engine-powered pumps. Coordinate with bypass pumping operations to determine temporary electrical power requirements. Overhead cabling across Roblin Boulevard may be required to supply power to the bypass pumping equipment in Junction Chamber "B"; installation of overhead cabling requires coordination with City of Winnipeg Traffic Services. It is also expected that a temporary 600:120/240V or 600:120/208V supply will be required for powering temporary lighting and receptacles.

(a) Use of the existing electrical distribution equipment for temporary power is permitted.

(b) Provide temporary lighting and receptacles in all areas of the pumping station.

E28.8 Setup, testing, and commissioning of electrical equipment, including power meters and circuit breakers.

E28.9 The Contract Administrator will perform the electrical coordination and arc flash studies. The Contractor will be responsible for setting the circuit breaker trip settings as directed by the Contract Administrator, and for providing circuit breaker trip test results following the implementation of the circuit breaker settings.

E28.10 The Contractor is responsible for paying all permit and inspection fees, including those for "Special Inspections" required by the Office of the Fire Commissioner.

E28.11 Measurement and Payment:

E28.11.1 Payment will be based on Form B, "Electrical Work", 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.

E29. AUTOMATION WORK

E29.1 Demolish the existing Remote Terminal Unit (RTU) panel, bubbler-based level transmitter, level transmitter air piping into the wetwell, pump room flood switch, and other items as per the drawings and specifications.

(a) The existing RTU panel will need to remain in service until the new control panel (CP-L81) is commissioned so that the City is able to monitor critical station alarms (eg. high wetwell level, high level in Gate Chamber "A", and high level in Junction Chamber "B"). Refer to Section E22 for information regarding high-level alarming associated with bypass pumping operations. The RTU panel may be relocated to a temporary stand to facilitate construction activities. The Contractor is responsible for providing power to the RTU panel during construction.

E29.2 Supply and install the new control panel, CP-L81. Note that the cellular modem and antenna is to be supplied by the City.

E29.3 Program and configure the PLC and HMI as per the included Functional Requirements Specification and the following design standards that are also included with this Bid Opportunity:

(a) Tag Naming Standard (Rev. 00), and

(b) HMI Layout and Animation Plan (Rev. 01).

(i) The HMI Layout and Animation Plan was developed for the Sewage Treatment Plants, but the object symbology and colour scheme should be utilized.

E29.4 Conduct a Factory Acceptance Test (FAT) in accordance with the specifications. The Contract Administrator will be present for the FAT. Coordinate with the Contract Administrator to establish the date and time of the FAT.

E29.5 Coordinate with the City and Contract Administrator to integrate the existing interlock with the Perimeter Road Pumping Station, which supplies the West End Water Pollution Control Centre (WEWPCC). The City currently has wireless cellular modems installed at the Community Row Pumping Station and Perimeter Road Pumping Station (PRPS), with communication between the two via the McPhillips Control Centre. The Contractor is responsible for implementing and testing this interlock to the PRPS to the satisfaction of the City and the Contract Administrator. The purpose of the interlock is to shut down the pumps at Community Row Pumping Station in the event that the pumps are not operating at the PRPS.

E29.6 Install new float switches in the wetwell, pump room, and interceptor sewer. The Contractor is fully responsible for installation, including determination of acceptable routing, and providing the necessary junction boxes and cabling to connect the interceptor float switch to the control panel in the Community Row Pumping Station. No additional payment will be made due to any assumptions made regarding the difficulty associated with installing this float switch. Appropriate safety equipment, including possible need for a self contained breathing apparatus, is required when working in sewers.

E29.7 Supply and installation of two (2) differential pressure based level transmitters.

E29.8 Supply and installation of three (3) magnetic flow meters with remote transmitters.

E29.9 Supply and installation of other instrumentation as shown on the drawing and specifications.

E29.10 Supply and installation of a methane (natural gas) detector, interlocked with the standby generator to shutdown the generator upon a gas alarm.

E29.11 Verification of status signals from the generator control panel, and generator transfer switch.

E29.12 Supply and install the ventilation controls, including damper actuators, temperature controllers, sensors, fan filter differential pressure switch, supply fan current switch (ISL-L620) with associated junction box, and the Ventilation Panel (JBA-L86).

E29.13 Supply and install all miscellaneous automation equipment, cabling, and conduit as indicated on the drawings.

E29.14 Configure and test all instruments, pump controllers (VFDs), and HVAC controllers. Make adjustments as directed by the Contract Administration. Record all instrument and controller parameters on test forms, and include the geodetic elevation of all level sensors (i.e. float switches and differential-pressure based level transmitters). Provide markups on the Piping & Instrumentation Diagrams (P&IDs) with all level sensor elevations.

E29.15 Configure and test all PLC inputs and outputs by operating field devices. The Contractor is responsible for testing alarm and status signals back to the SCADA system at the City's Wastewater Collections Control Centre. This SCADA system monitors the Station PLC via the cellular and dial-up connections. Coordinate a date and time with the Contract Administrator for testing of I/O signals back to the City's SCADA system, with a minimum of 48 hours notice.

E29.16 Test all equipment control operation and equipment interlocks. This includes, but is not limited to, operation of the HVAC controls, generator controls, and pump controls.

E29.17 The Contractor is responsible for submitting a detailed Commissioning Plan to the Contract Administrator for review and approval prior to commissioning. This Commissioning Plan shall include all steps that will be performed during testing and commissioning of each piece of equipment. No additional payment will be made for any assumptions made regarding the level of detail required in the Commissioning Plan. During commissioning, the Contractor will be required to adhere to the Commissioning Plan and fill out the automation test forms provided in this Bid Opportunity, and to provide additional test forms and reports.

E29.18 Vibration during pump operation may be an issue for the nearby residence to the west of the Station. The Contractor will be responsible for determining and implementing “skip frequencies” in the VFD configuration to mitigate vibration to the greatest extent possible. This will require consultation with the City and Contract Administrator. If during commissioning the Contract Administrator agrees that the vibration issues cannot be mitigated by implementing “skip frequencies” then the Contract Administrator, at their sole discretion, may alleviate this requirement.

E29.19 Measurement and Payment:

E29.19.1 Payment will be based on Form B, “Automation Work”, 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.

E30. EXPEDITED SHOP DRAWINGS

E30.1 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) Customer Service Termination Enclosure, CSTE-L70,

(b) 600V Switchgear, SGR-L71,

(c) Motor Control Centre, MCC-L72E,

(d) Natural Gas Generator, GEN-L72,

(e) Automatic Transfer Switch, ATS-L72,

(f) Electromagnetic Flow Meters, FIT/FE-L011, FIT/FE-L021, FIT/FE-L031, and

(g) Direct buried gate valve (refer to E21.2.1(a) and drawing 1-0130L-C0001 Sheet 001).

E30.2 If Award is made to the lowest responsive bidder then no payment for the preparation of Shop Drawings will be made.

E30.3 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.