



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 822-2015

COMMUNICATOR CHAMBER PIPING AND VALVE UPGRADES

TABLE OF CONTENTS

PART A - BID SUBMISSION

Form A: Bid	1
Form B: Prices	4
Form G1: Bid Bond and Agreement to Bond	6
Form G2: Irrevocable Standby Letter of Credit and Undertaking	8

PART B - BIDDING PROCEDURES

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

PART C - GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

General

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

Submissions

D9. Authority to Carry on Business	3
D10. Safe Work Plan	3
D11. Insurance	3
D12. Performance Security	3
D13. Subcontractor List	4

Schedule of Work

D14. Commencement	4
D15. Critical Stages	4
D16. Substantial Performance	5
D17. Total Performance	5
D18. Liquidated Damages	5

Control of Work

D19. Job Meetings	5
D20. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	6

D21. The Workplace Safety and Health Act (Manitoba) – Qualifications	6
Measurement and Payment	
D22. Invoices	6
D23. Payment	6
Warranty	
D24. Warranty	6
Form H1: Performance Bond	7
Form H2: Irrevocable Standby Letter of Credit	9
Form J: Subcontractor List	11

PART E - SPECIFICATIONS

General

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

General Requirements

E2. Hazardous Materials	1
E3. Specific requirements	2
E4. Gate Valves (Equipment Supplied by the City)	2
E5. Equipment and Materials	2
E6. Security	2
E7. Salvage	3
E8. Dangerous Work Conditions	3
E9. Waterway By-law	3
E10. Protection of Existing Trees	4
E11. Temporary Use of City Equipment	4
E12. Mobilization and Demobilization	4
E13. Flow Control And Temporary By-Pass Pumping	5
E14. Temporary Shutdown of The Pumping Station	7
E15. Work Plan	8
E16. Structural Works	8
E17. Cast-in-Place Concrete Construction	8
E18. Mechanical Work	10
E19. Wet Well Cleanout	12
E20. Site Restoration	12

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 COMMUNOTOR CHAMBER PIPING AND VALVE UPGRADES

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, October 7, 2015.

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

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

B3. SITE INVESTIGATION

B3.1 Further to C3.1, a Site meeting will be held at each location to provide Bidders access to the Site. The Site meetings will start at 9:00 am at the locations shown below.

(a) Conway Lift Station (Conway St and Portage Ave) – October 1, 2015 at 9:00am

(b) Ferry Lift Station (Ferry Rd and Assiniboine Ave) – October 1, 2015 after Conway

(c) Riverbend Lift Station (First lane West of Riverbend Cres and Portage Ave) – October 1, 2015 after Ferry

(d) Cockburn Lift Station (Cockburn St S and Churchill Dr) – October 2, 2015 at 9:00am

(e) Hawthorne Lift Station (Hawthorne Ave and Kildonan Dr) – October 2, 2015 after Cockburn

B3.1.1 Proponents must register for the site investigation by contacting the Contract Administrator in D4.1.

B3.2 The Bidder is advised that everyone attending the site investigation must wear CSA approved safety footwear and a hard hat while in the wastewater pumping facility.

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, to constitute a responsive Bid.

B8.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.

B8.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.

B8.5 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.

B8.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B17.1(a).

B8.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B8.8 Bids shall be submitted to:

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

B9. BID

B9.1 The Bidder shall complete Form A: Bid, making all required entries.

B9.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

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

B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.

B9.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.

B9.4 Paragraph 12 of Form A: Bid shall be signed in accordance with the following requirements:

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

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

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

B10. PRICES

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

B10.1.1 Notwithstanding C12.2.3(c), prices on Form B: Prices shall not include the Manitoba Retail Sales Tax (MRST, also known as PST), which shall be extra where applicable.

- B10.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B10.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B11. DISCLOSURE

- B11.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.
- B11.2 The Persons are:
- (a) N/A

B12. QUALIFICATION

- B12.1 The Bidder shall:
- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and
 - (b) be financially capable of carrying out the terms of the Contract; and
 - (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.
- B12.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>
- B12.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) have successfully carried out work similar in nature, scope and value to the Work; and
 - (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract;
 - (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba); and
 - (d) have previously carried out confined space entry work of a similar nature to the work specified in a wastewater lift station or facility with similar safety related characteristics.
- B12.4 Further to B12.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
- (a) a copy of their valid Manitoba COR certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or

- (b) a copy of their valid Manitoba SECOR™ certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Small Employer Certificate of Recognition Program (SECOR™) administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
- (c) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/>).

B12.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.

B12.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B13. BID SECURITY

B13.1 The Bidder shall provide bid security in the form of:

- (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or
- (b) an irrevocable standby letter of credit, in the amount of at least ten percent (10%) of the Total Bid Price, and undertaking issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form included in the Bid Submission (Form G2: Irrevocable Standby Letter of Credit and Undertaking); or
- (c) a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.

B13.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.

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

B13.1.3 The Bidder shall sign the Bid Bond.

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

B13.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

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

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

B13.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

B14. OPENING OF BIDS AND RELEASE OF INFORMATION

- B14.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.
- B14.1.1 Bidders or their representatives may attend.
- B14.1.2 Bids determined by the Manager of Materials, or his/her designate, to not include the bid security specified in B13 will not be read out.
- 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/>
- 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/>
- B14.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B15. IRREVOCABLE BID

- B15.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B15.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

B16. WITHDRAWAL OF BIDS

- B16.1 A Bidder may withdraw his/her Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B16.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B16.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B16.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B16.1.3(b), declare the Bid withdrawn.
- B16.2 A Bidder who withdraws his/her Bid after the Submission Deadline but before his/her Bid has been released or has lapsed as provided for in B15.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative

Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

B17. EVALUATION OF BIDS

B17.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation there from (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B12 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B7.

B17.2 Further to B17.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.

B17.3 Further to B17.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is responsible and qualified.

B17.4 Further to B17.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices adjusted, if necessary, as follows:

- (a) If the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder is within the budgetary provision for the Work, no adjustment will be made to the Total Bid Price; or
- (b) if the lowest evaluated responsive Bid submitted by a responsible qualified Bidder exceeds the budgetary provision for the Work, the Total Bid Prices of all responsive Bids submitted by responsible and qualified Bidders will be adjusted by progressively deducting:
 - (i) Item 5, Hawthorne Lift Station, in its entirety;
 - (ii) Item 4, Cockburn Lift Station, in its entirety;
 - (iii) Item 3, Riverbend Lift Station, in its entirety;
 - (iv) Item 2, Conway Lift Station, in its entirety;

in the order listed, until a Total Bid Price within the budgetary provision is achieved.

B17.4.1 Further to B17.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B18. AWARD OF CONTRACT

B18.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B18.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B18.2.1 Without limiting the generality of B18.2, the City will have no obligation to award a Contract where:

- (a) the prices exceed the available City funds for the Work;
- (b) the prices are materially in excess of the prices received for similar work in the past;
- (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;

- (d) only one Bid is received; or
- (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

B18.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B17.

B18.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of installation of new gate valves and piping in the Comminutor Chambers at five Wastewater Pumping Stations: Cockburn, Conway, Ferry, Hawthorne, and Riverbend.

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

- (a) Temporary Bypass pumping and flow control.
- (b) Removal of existing hydraulic gate valves.
- (c) Partial removal of existing concrete flume.
- (d) Installation of 500mm (20") gate valves, piping, and fittings.
- (e) Wet well cleanout.

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) "**ANSI**" means American National Standards Institute;
- (b) "**ASME**" means American Society of Mechanical Engineers;
- (c) "**ASTM**" means American Society for Testing and Materials;
- (d) "**AWWA**" means American Waterworks Association.

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is:

Newton Conti, P.Eng.
Design and Specification Engineer
Telephone No. 204-986-3179
Email nconti@winnipeg.ca

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

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

D5. CONTRACTOR'S SUPERVISOR

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

D6. OWNERSHIP OF INFORMATION, CONFIDENTIALITY AND NON DISCLOSURE

- D6.1 The Contract, all deliverables produced or developed, and information provided to or acquired by the Contractor are the property of the City and shall not be appropriated for the Contractors own use, or for the use of any third party.
- D6.2 The Contractor shall not make any public announcements or press releases regarding the Contract, without the prior written authorization of the Contract Administrator.
- D6.3 The following shall be confidential and shall not be disclosed by the Contractor to the media or any member of the public without the prior written authorization of the Contract Administrator;
- (a) information provided to the Contractor by the City or acquired by the Contractor during the course of the Work;
 - (b) the Contract, all deliverables produced or developed; and
 - (c) any statement of fact or opinion regarding any aspect of the Contract.
- D6.4 A Contractor who violates any provision of D6 may be determined to be in breach of Contract.

D7. NOTICES

- D7.1 Except as provided for in C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.
- D7.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D7.3, D7.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the facsimile number identified in D4.1.
- D7.3 Notwithstanding C21, all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following facsimile number:
The City of Winnipeg
Chief Financial Officer
Facsimile No.: 204 949-1174
- D7.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following facsimile number:
The City of Winnipeg
Legal Services Department
Attn: Director of Legal Services
Facsimile No.: 204 947-9155

D7.5 Bids Submissions must be submitted to the address in B8.8

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>

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, broad form property damage cover 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) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.

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 If the bid security provided in his/her Bid was not a certified cheque or draft pursuant to B13.1(c), the Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in 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 the General Conditions for the return of the executed Contract.

SCHEDULE OF WORK

D14. COMMENCEMENT

D14.1 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.

D14.2 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; and
 - (vi) the Subcontractor list specified in D13.
- (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.

D14.3 The Contractor shall not commence the Work on the Site before November 1, 2015 or as approved by the Contract Administrator.

D14.4 The City intends to award this Contract by October 30, 2015.

D14.4.1 If the actual date of award is later than the intended date, the dates specified for Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D15. CRITICAL STAGES

D15.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

- (a) The Contractor must ensure that all five (5) Comminutor Chamber gate valves and all related piping, and fittings etc. must be installed and ready for active service by March 1, 2016. All temporary pumping and bypass must be removed by this date.

D16. SUBSTANTIAL PERFORMANCE

- D16.1 The Contractor shall achieve Substantial Performance by March 11, 2016.
- D16.2 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 re-inspected.
- D16.3 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.

D17. TOTAL PERFORMANCE

- D17.1 The Contractor shall achieve Total Performance by March 25, 2016.
- D17.2 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 re-inspected.
- D17.3 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.

D18. LIQUIDATED DAMAGES

- D18.1 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 Stage – One thousand dollars (\$1000);
 - (b) Substantial Performance – Five hundred dollars (\$500);
 - (c) Total Performance – Two hundred fifty dollars (\$250).
- D18.2 The amounts specified for liquidated damages in D18.1 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.
- D18.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D19. JOB MEETINGS

- D19.1 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.

D19.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

D20. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D20.1 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).

D21. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

D21.1 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

D22. INVOICES

D22.1 Further to C12, the Contractor shall submit an invoice for each portion of Work performed. to:

The City of Winnipeg
Corporate Finance - Accounts Payable
4th Floor, Administration Building, 510 Main Street
Winnipeg MB R3B 1B9

Facsimile No.: 204-949-0864
Email: CityWpgAP@winnipeg.ca

D22.2 Invoices must clearly indicate, as a minimum:

- (a) the City's purchase order number;
- (b) date of delivery;
- (c) delivery address;
- (d) type and quantity of work performed;
- (e) the amount payable with GST and MRST shown as separate amounts; and
- (f) the Contractor's GST registration number.

D22.3 The City will bear no responsibility for delays in approval of invoices which are improperly submitted.

D22.4 Bids Submissions must be submitted to the address in B8.8

D23. PAYMENT

D23.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D24. WARRANTY

D24.1 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. 822-2015

COMMUNICATOR CHAMBER PIPING AND VALVE 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. 822-2015
COMMINUTOR CHAMBER PIPING AND VALVE UPGRADES

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

This credit is subject to the Uniform Customs and Practice for Documentary Credit (2007 Revision), International Chamber of Commerce Publication Number 600.

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
	Cover Sheet
1-0127L-G0001-001	Drawing Index
1-0127L-G0002-001	Cockburn Lift Station Site Plan – Cockburn Street S and Churchill Drive
1-0127L-M0001-001	Cockburn Lift Station Comminutor Chamber – Cockburn Street S and Churchill Drive
1-0131L-G0001-001	Conway Lift Station Site Plan – Conway Street and Portage Avenue
1-0131L-M0001-001	Conway Lift Station Comminutor Chamber – Conway Street and Portage Avenue
1-0141L-G0001-001	Ferry Road Lift Station Site Plan – Ferry Road and Assiniboine Avenue
1-0141L-M0001-001	Ferry Road Lift Station Comminutor Chamber – Ferry Road and Assiniboine Avenue
1-0145L-G0001-001	Hawthorne Lift Station Site Plan – Hawthorne Avenue and Kildonan Drive
1-0145L-M0001-001	Hawthorne Lift Station Comminutor Chamber – Hawthorne Avenue and Kildonan Drive
1-0178L-G0001-001	Riverbend Lift Station Site Plan – Lane West of Riverbend Crescent and Portage Avenue
1-0178L-M0001-001	Riverbend Lift Station Comminutor Chamber – Lane West of Riverbend Crescent and Portage Avenue

- E1.4 The following are included for reference:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
298	Ferry Rd – Comminutor and Pumping Station
299	Ferry Rd – Comm. & Pumping Sta. Reinforcing Steel Design Dwg.
314	Riverbend – Comm. & Pumping Sta. Substructure – General Layout
329	Hawthorne – Comm. & Pump Sta. General Layout of Substructure
331	Hawthorne – Comm. & Pump Sta. Electrical Ventilation, Piping, & Eyebolt Installations
332	Hawthorne – Comm. & Pump Sta. Reinforcing Details
404	St. James Interceptor – Conway Comminutor and Pumping Station
R-141	Cockburn Flood Pumping Station – Comminutor, Sump, & Sewage Pumping Station for G.W.S.D

GENERAL REQUIREMENTS

E2. HAZARDOUS MATERIALS

- E2.1 If asbestos or other hazardous materials are encountered during the Work of the Contract, the Contractor shall stop all work and notify the Contract Administrator immediately. Removal of

hazardous materials shall be dealt with by the City and the Contractor shall await further instruction by the Contract Administrator.

E3. SPECIFIC REQUIREMENTS

- E3.1 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 list of all tasks necessary to complete the scope of installations given on the drawings or specifications.
- E3.2 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.
- E3.3 The Contractor shall exercise care where installing anchors into existing concrete elements so as not to damage existing reinforcing. All anchors shall be installed utilizing carbide tip drill bits. The existing reinforcing shall be located utilizing a reinforcing bar locator and marked out on the surface of the concrete. The drill holes shall be advanced to the required depth for installation of the anchors. Should reinforcement be encountered while drilling, terminate the hole and reposition to clear the reinforcement. Do not use core bits that can easily intercept and damage/cut the reinforcing during drilling.
- E3.4 The Contractor shall abide by the Arc Flash PPE requirements of CSA-Z462, Workplace Electrical Safety, and arc flash labels on existing facility equipment.

E4. GATE VALVES (EQUIPMENT SUPPLIED BY THE CITY)

- E4.1 The City has already purchased five (5) 500mm gate valves complete with operators, stem, and wall brackets. They will be made available to the Contractor for installation on this project.
- E4.2 The Contractor shall pick-up the City supplied gate valves from their storage building at 598 Plinguet St. Any concerns regarding the suitability of the gate valves shall be identified before the contractor accepts them from the City. Once the valves are accepted by the Contractor he will be responsible for their care. Any damage during transport and installation will be the Contractor's responsibility.
- E4.3 The Contractor shall assemble and install the gate valves.

E5. EQUIPMENT AND MATERIALS

- E5.1 The Contractor shall supply all equipment and materials necessary to execute the work, except for those in E4
- E5.2 Existing equipment and materials may be re-used only as specifically indicated in these specifications, as shown on the Drawings or as approved by the Contract Administrator.

E6. SECURITY

- E6.1 The Contractor is responsible for all material and equipment stored on the site.
- E6.2 The Contractor is responsible for ensuring the security of the pumping station and related temporary pumping systems.

E7. SALVAGE

- E7.1 All salvaged equipment and materials as determined by the Contract Administrator shall remain property of the City unless specifically noted otherwise. The Contractor shall deliver salvaged equipment and materials to the City of Winnipeg's "Y Yard" outdoor storage compound located at the North East corner of the intersection of Dugald Road and Van Bellegham Avenue, Winnipeg, Manitoba or to a location approved by the Contract Administrator.
- E7.2 The Contractor shall notify the Contract Administrator at least 48 hours prior to delivery of salvaged equipment to allow for arrangements to be made to receive the salvaged equipment. All deliveries shall be made between 8:00 am and 3:30 pm on Business days.
- E7.3 The Contractor shall remove and haul all rejected salvage from the site and legally dispose of it.
- E7.4 Removal and delivery of salvageable and non-salvageable equipment and material shall be considered incidental to the Contract Work and no additional payment will be made for such Work.

E8. DANGEROUS WORK CONDITIONS

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

E9. WATERWAY BY-LAW

- E9.1 The Contractor shall note that all Works within 107 metres (350 feet) of a riverbank are within the jurisdiction of the Waterway By-Law. The City of Winnipeg, Water and Waste Department,

will apply and pay for any Waterway Permits for the project, as required. The Contractor shall adhere to restrictions imposed on the permit.

E9.2 Under no circumstances will stockpiling of any material be permitted within 107 metres of a riverbank or dike.

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

E10. PROTECTION OF EXISTING TREES

E10.1 Do not remove existing trees and take the following precautionary steps to avoid damage from construction activities to existing boulevard trees within the limits of the construction area.

E10.1.1 Do not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.

E10.1.2 Strap mature tree trunks with 25 x 150 x 2400 wood planks. Smaller trees shall be similarly protected using appropriately sized wood planks.

E10.1.3 Excavations shall be carried out in a manner to minimize damage to existing root systems. Where roots must be cut to facilitate an excavation they shall be neatly pruned at the face of the excavation.

E10.1.4 Work on site shall be carried out in a manner to minimize damage to existing tree branches. Where damage to tree branches does occur, the Contractor shall neatly prune the damaged branch.

E10.1.5 Work on site shall be carried out in a manner to minimize damage to existing tree branches. Where damage to tree branches does occur, the Contractor shall neatly prune the damaged branch.

E10.1.6 American elm trees shall not be pruned between April 1st and August 1st and Siberian elm trees between April 1st and July 1st of any year under provisions of The Dutch Elm Disease Act.

E10.2 All damage to existing trees due to construction activities shall be repaired to the requirements and satisfaction of the City of Winnipeg, Parks and Recreation Department, Forestry Branch at the Contractor's expense.

E11. TEMPORARY USE OF CITY EQUIPMENT

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

E12. MOBILIZATION AND DEMOBILIZATION

E12.1 Description

E12.1.1 Mobilization and demobilization will include but not be limited to start-up costs, equipment set-up and removal, storage facilities set-up and removal and site cleanup.

E12.2 Measurement and Payment

E12.2.1 A maximum of 50% of Form B, Item 1 or 5% of the Total Bid Price, whichever is less, may be submitted for progress payment upon mobilization. The remaining amount will be paid out upon demobilization.

E12.2.2 The Contractor is eligible for payment of mobilization services when the Contract Administrator is satisfied that:

- (a) The Contractor has met all the Commencement requirements specified D14.
- (b) The contractor has mobilized equipment and initiated work on Site.

E12.2.3 The Contractor is eligible for payment of demobilization services when the Contract Administrator is satisfied that:

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

E13. FLOW CONTROL AND TEMPORARY BY-PASS PUMPING

E13.1 Description

E13.1.1 The project involves work inside the comminutor chamber, therefore the station may need to be completely shut-down for an extended period to permit rehabilitation works to be completed. During this period the Contractor will be required to take over responsibility for pumping wastewater for the duration of the shutdown.

E13.2 The Contractor must provide the Contract Administrator a 24 hour contact person who can address any issues with the temporary pumping system.

E13.3 Provide a complete fully automatic pumping system that includes a minimum of two submersible pumps, each with a capacity equal to or greater than the listed PDWF (Peak Dry Weather Flow) for that station. Both pumps are to be installed, connected to power and discharge piping and available for operation at all times. A replacement pump of equal capacity shall be immediately provided if one of the two original pumps has to be removed from the site for repairs. The PDWF for the stations are:

- (a) Cockburn – 47.0 l/s
- (b) Conway – 50.0 l/s
- (c) Ferry – 101.0 l/s
- (d) Riverbend – 40.0 l/s
- (e) Hawthorne – 74.0 l/s

E13.4 A combination of smaller sized pumps may be used concurrently if the total discharge flow of the pumps meets the PDWF volumes identified providing replacement pumps are available on-site to maintain the PDWF volume.

E13.5 Surface mount, vertical lift suction pumps are not acceptable.

E13.6 The temporary pumping system must be approved by the Contract Administrator prior to installation.

E13.7 Provide a flow control plan to the Contract Administrator for review before construction starts. It shall provide detailed information for pumping equipment to be used including pump capacity and dimensions, depth of submergence, pump controls and installation details. Also include discharge piping details, arrangements to protect manhole openings required to run piping and power to the pumps and power supply details.

E13.8 Power supply to the temporary by-pass pumps may be obtained from the following locations:

- (a) Existing wall mounted CSTE; contractor would be required to provide a suitably sized circuit breaker or fused disconnect switch complete with weatherproof enclosure. Location of breaker or disconnect to be determined by contractor. Wall mount enclosure to the existing lift station or provide a self-supporting stand would be acceptable.
- (b) Load side of existing pad mounted transformer: contractor would be required to provide a suitably sized circuit breaker or fused disconnect switch, utility meter socket and enclosure

for metering transformers. All equipment to be housed within a weatherproof enclosure and wall mounted to the existing lift station or mounted on a self-supporting stand.

- E13.9 All power supply connections shall be approved by the Contract Administrator before set-up. All power outages shall be approved by the Contract Administrator. Provide on-site power generation where power outages are expected for a duration of 30 minutes or longer.
- E13.10 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 on the pumping station site.
- E13.11 Provide a check valve on the by-pass pumping discharge pipe of each pipe.
- E13.12 Power supply for the pumps must be suitably sized for pumping equipment complete with all required automatic controls. Pumps shall alternate duty cycle. Should one pump not perform, the second pump shall start. Under this condition, an alarm shall be raised to the contractor's representative and the City's emergency contact number.
- E13.13 If the first pump cannot maintain level, the second pump shall come on. That is the temporary pumping system shall have the capability to run the design capacity pumps and full standby capacity pumps at the same time.
- E13.14 Fittings, couplings and appurtenances to be used for repairs to existing sewers to be approved products for underground use in the City of Winnipeg.
- E13.15 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 elevations for monitoring and removal.
- E13.16 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.
 - (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.
- E13.17 Provide all pumping and dyking inside the sewers required to install temporary pumping systems, sewer plugs or other temporary measures required to install the temporary pumping system.
- E13.18 System Operation
- E13.18.1 On a rise in the manhole water level to a predetermined point, the temporary pumping system shall come on automatically. Maintain the level of sewage in existing sewers below the critical basement elevation. The Contract Administrator will provide a mark at a convenient location for reference. Critical Basement elevation for the stations are:
- (a) Cockburn – 226.543 m
 - (b) Conway – 229.622 m
 - (c) Ferry – 227.612 m
 - (d) Riverbend – 229.228 m
 - (e) Hawthorne – 224.318 m

- E13.19 Monitor the upstream system at all times to ensure the stored level of wastewater does not exceed the critical basement elevations listed in E13.18.1.
- E13.20 Provide an alarm when the water level rises to 150 mm above pump start elevation. Send this alarm via cell phone to the contractor's office and at the same time to the designated City emergency contact number.
- E13.21 Each installed pump shall have the capacity to pump the expected PDWF listed in E13.3 to the discharge manhole.
- E13.22 Sewers can receive flow of an undetermined amount from watermain breaks, snow melt, rain and other unforeseen sources. The Contractor will be responsible to monitor the flow in the sewer and adjust work activities accordingly, such as putting the spare standby by-pass pump into operation to handle any excessive flows due to unforeseen flow above the amount identified for PDWF.
- E13.23 There shall be no claim for additional costs or time due to increased standby pumping operations from high wet weather flows.
- E13.24 Cooperate and coordinate with the City to allow full access at all times for City staff to carry out maintenance and operational duties on the site.
- E13.25 The Contractor shall ensure temporary by-pass 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.
- E13.26 Temporary 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.
- E13.27 All wastewater system gate operation on the site shall be by the City only.

E14. TEMPORARY SHUTDOWN OF THE PUMPING STATION

- E14.1 Prepare and submit shutdown plans a minimum of 48 hours prior to the proposed shutdown.
- E14.2 All gate operation and other control relating to the wastewater process will be by the City.
- E14.3 Allowable shutdown times for the stations indicated on the Drawings is approximate and the Contractor must monitor the upstream system at all times to ensure the stored levels of wastewater will not exceed the critical basement elevation indicated on the drawings.
- E14.4 Schedule work activities requiring station shutdown to be done at night, if required by the Contract Administrator, when flow amounts are generally reduced, to maximize the amount of shutdown time available and reduce the risks associated with station shutdown.
- E14.5 Temporary by-pass pumping, as described in E12, must be installed and operational at all times during construction and ready to be put into service if liquid level in the sewer system reaches the critical basement elevation shown on the drawings or as determined by the Contract Administrator.
- E14.6 Water and Waste Department, Collection System personnel will be available to provide assistance to the Contractor for shutdown of the wastewater pumping station to facilitate transition of station pumping to the Contractor's temporary pumping system.
- E14.7 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.

E14.8 Consecutive back-to-back station shutdowns will not be allowed until the sewer system has returned to normal.

E15. WORK PLAN

- E15.1 The Contractor is required to develop a detailed work plan and submit to the Contract Administrator for review. The work plan is to include:
- (a) The proposed construction sequence to be followed including all methods to be employed to ensure that no damage occurs to existing structures or adjacent properties within or adjacent to the work.
 - (b) A description of all proposed methods of construction to be implemented.
 - (c) Specialized equipment that may be used.
 - (d) Any design revisions proposed to accommodate the Contractor's proposed method of construction.
 - (e) The Contractor shall respond to any concerns that may be raised by the Contract Administrator's review of the Contractor's construction methods submission.

E16. STRUCTURAL WORKS

E16.1 Scope of Work

- (a) Comminutor Chamber
 - (i) Demolish concrete as required and remove existing embedded comminutor ring.
 - (ii) Install new embedded thimble.
 - (iii) Install pipe supports as required for new 500 mm piping.
 - (iv) Install valve stem and stem brackets.
 - (v) Install new infill concrete.

E17. CAST-IN-PLACE CONCRETE CONSTRUCTION

E17.1 Description

E17.1.1 This specification will cover construction of cast-in-place concrete and shall supplement, revise and amend CW 2160.

E17.2 Materials

- (a) Concrete Mix Design
 - (i) The Contractor shall be responsible for the design and performance of all concrete mixes supplied under this Specification. Concrete shall be supplied in accordance with the requirements of CSA A23.1-04, with the minimum properties as provided below:

Sewage Exposure Concrete

Class of Exposure S-1

Maximum Size of Aggregate 19 mm

Cement Type Type 50

Maximum Water/Cementing Materials Ratio 0.45

Compressive Strength at 28 Days 35 MPa

Slump (before admixtures) 80 mm +/- 20 mm

Air Content 6.5% +/- 1.5%

Lean Mix Concrete

Maximum Size of Aggregate 19 mm

Cement Type Type 10

Compressive Strength at 28 Days 5-10 MPa

Slump/Flow (Prior to adding admixture) 100 mm +/- 50 mm

Air Content n/a

Maximum Water/Cementing Materials Ratio 0.49

- (b) Provide a "Mix Design Statement" for each type of concrete to be used certifying constituent materials and mixing proportions to the Contract Administrator at least 2 weeks prior to delivery of Concrete to the Site. Supply reasonable evidence to the Contract Administrator that the mix proportions selected will produce concrete meeting the specified strength, workability and yield.
- (c) Admixtures
 - (i) All admixtures shall be compatible.
 - (ii) Air entraining agent shall meet ASTM C260.
 - (iii) Chemical water reducing admixtures shall meet ASTM C494.
- (d) Grout
 - (i) Grout shall be Sika Grout 212 SR for wastewater exposed areas and Sika Grout 212 HP for dry areas.
- (e) Reinforcing Steel
 - (i) Bar accessories:
 - ◆ To be made of a non-corroding material
 - ◆ Shall not stain, blemish or spall the concrete surface for the life of the concrete
 - ◆ Shall be approved by the Contract Administrator
 - ◆ Bar chairs shall be PVC.
- (f) Bonding Agent shall be Sika Latex R, Acryl 60, Intralok or approved equivalent in accordance with B6.
- (g) Shop Drawings:
 - (i) Provide shop drawings in accordance with this specification.
 - (ii) Submit shop drawings for reinforcing steel a minimum of two (2) weeks prior to the fabrication of any reinforcing steel.

E17.3 Construction Methods

E17.3.1 Construction Method Submission

- (a) No Work shall commence on construction of cast-in-place concrete until after the Contract Administrator's review of the Contractors Construction Method submission.
- (b) The Contractor shall prepare for the Contract Administrators review a Construction Method submission detailing:
 - (i) Construction sequence to be followed including all methods to be employed.
 - (ii) Specialized equipment to be used.
 - (iii) Any design revisions proposed to accommodate the Contractor's proposed construction method.

- (c) The Contractor shall respond to any concerns that may be raised by the Contract Administrator after review of Construction Method submission.

E17.3.2 Cast-in-place Concrete Construction

- (a) Construct cast in place concrete in accordance with CW 2160, except as supplemented, revised or amended in this specification and as indicated in the construction notes on the Drawings.
- (b) Adjust the location of reinforcing steel adjacent to openings to frame those openings in accordance with good practice, and maintain the bar spacing intent.
- (c) Do not use welded splices for reinforcing steel.
- (d) Order all wall reinforcement steel in lengths to best suit the spacing of walers so that reinforcing bars will not be bent or misformed in order to remove the walers.

E18. MECHANICAL WORK

E18.1 Description

- E18.1.1 Remove the existing gate valve, piping, equipment, and materials as required and install new piping, gate valve, and other equipment and materials as shown on the drawings and specifications.
- E18.1.2 All equipment and materials shall be supplied by the Contractor except as listed in E4.
- E18.1.3 Resolve all conflicts on-site before fabricating or installing any materials or equipment.
- E18.1.4 Accuracy of dimensions for new piping, flanges, valves and other equipment items is the Contractor's responsibility. Any fit issues between Site conditions and new materials to be installed are the Contractor's responsibility.

E18.2 Piping and Fittings

- (a) Unless noted otherwise, all piping shall be Class 52 ductile iron or ASTM A53 Carbon steel Grade B Schedule 80 wall thickness.
- (b) Ductile Iron fittings shall conform to AWWA C110.
- (c) Fabricated fittings shall conform to ASTM A53 carbon steel grade B, Schedule 80 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.

E18.3 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.

E18.4 Pipe Supports and Hangers

- (a) Pipe supports and hangers to be as shown on the Drawings.

E18.5 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.

E18.6 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 Pipe and Fittings.

E18.7 Cast-in-Place Concrete

- (a) Concrete to be in accordance with CW 2160 and CSA A23.1.
- (b) Concrete mix design shall be in accordance with performance alternative and shall have the following properties:
 - (i) Class of exposure: S-1
 - (ii) Minimum compressive strength at 28 days: 35 MPa
 - (iii) Maximum slump: 80mm (± 20 mm) (before admixtures)
 - (iv) Air Content: 5%–8%
 - (v) Maximum Water/Cement Ratio: 0.40
- (c) Lean-Mix concrete design for proportioning of fine aggregate, coarse aggregate, cement, and water shall be as follows:
 - (i) Cement: Type 50
 - (ii) Minimum compressive strength at 28 days: 15 MPa
 - (iii) Slump: 80mm
 - (iv) Air Content: nil
 - (v) Maximum Water/Cement Ratio: 0.49

E18.8 Grout

- (a) Grout to be Sika 212 SR for wet areas and Sika 212 for dry areas.

E18.9 Bonding Agent

- (a) Bonding agent to be Sika Latex R or approved equal in accordance with B7.

E18.10 Pipe Paint

- E18.10.1 Provide a 3 year warranty from project substantial performance date for painting the Comminutor room wastewater piping.
- E18.10.2 For painting pipe interior, use Devoe Devgrip 238 abrasion resistant coating or equal.
- E18.10.3 Conform to Devoe and Intergard requirements regarding:
 - (a) Surface preparation including sand blasting.
 - (b) Conditions under which painting system can be applied.
 - (c) Prime and final coat thicknesses.
- E18.10.4 For painting piping material exterior surface, use prime coat Interzinc 52 (2.5 mil) and then apply a finish coat Intergard 345 high build epoxy (6 mil) or equal in accordance with B7.
- E18.10.5 Confirm exterior finish coat colour with the Contract Administrator before proceeding.
- E18.10.6 Perform surface preparation and painting off site. Then deliver finished products to the Site for final assembly. Only touch-up surface preparation and painting will be permitted on-site.
- E18.10.7 Handle piping with care during delivery to Site, storage and installation so as to minimize touch-up required.
- E18.10.8 After piping system installation is complete, touch up paint to original condition.

E18.10.9 Do not paint on raised flange faces where gaskets will be applied.

E18.11 Welding

- (a) Piping and fitting welds shall be full penetration butt type in accordance with ANSI/ASME B31.9. Welders shall be fully qualified and licensed by Provincial Authorities. Welds which do not penetrate fully will not be accepted.
- (b) Weld steel flanges on both the inside and the outside in conformance with AWWA Standard C207.
- (c) All pipe and equipment shall be adequately protected from on-site welding procedures.

E18.12 Concrete Work

- (a) Make neat openings in walls and floor slabs using concrete coring and cutting equipment and methods.
- (b) Fill openings left in concrete after removal of piping or other equipment with watertight, non-shrink grout. Finish new surfaces flush with the existing surface and match the surrounding surface texture. Primer and paint shall be applied in accordance with painting specifications if the surrounding surfaces have a paint finish.
- (c) Mix and apply grout in accordance with the manufacturer's instructions.
- (d) Mix and apply bonding agent in accordance with the manufacturer's instructions.
- (e) Neatly grout any concrete surface that has been broken and had the aggregate exposed with a smooth finish similar in texture to that of the surrounding concrete.
- (f) Apply concrete bonding agents between new concrete or grout and existing concrete surfaces. Remove all loose, pitted and scaled concrete and apply bonding agent in accordance with the manufacturer's instructions
- (g) De-scale exposed reinforcing steel and have all rust removed before applying grout.

E18.13 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.

E19. WET WELL CLEANOUT

- E19.1 The Contractor shall be responsible for the clean out of the wet well at completion of construction. Clean out shall be done by mechanical or manual methods and shall remove grit, tallow and other build-ups to the satisfaction of the Contract Administrator.
- E19.2 The current level of accumulation in the wet wells is not known. Higher levels of accumulation, above that anticipated by the Contractor will not be eligible for additional payments.
- E19.3 The Contractor shall also ensure that all construction material and debris are removed from the wet well after completing the works.
- E19.4 Schedule upstream work that may produce debris prior to wet well final cleanout.
- E19.5 Provide evidence of the wet well clean out in the form of photographs, or other suitable means, acceptable to the Contract Administrator.

E20. SITE RESTORATION

E20.1 Description

- E20.1.1 This specification shall cover surface restoration and associated items of Work for existing surfaces disturbed by construction activities.

E20.2 Construction Methods

E20.2.1 Restoration of all existing surface areas disturbed by construction activities including but not limited to; 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) Miscellaneous concrete slabs (median slab, sidewalk, bullnose: in accordance with CW3235.
- (f) Concrete curb and gutter: in accordance with CW 3240.