



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 459-2010

WATERMAIN SUPPLY UPGRADES LOGAN AND MCPHILLIPS

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 WATERMAIN SUPPLY UPGRADES LOGAN AND MCPHILLIPS

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, June 22, 2010.

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 Bidder may view the Site without making an appointment.

B3.2 The Bidder is advised that the site location is a key traffic corridor with heavy traffic volumes. Areas adjacent to the Site are commercial businesses and traffic access will need to be maintained at all times.

B4. BIDDERS' CONFERENCE

B4.1 Further to C3.1, the Contract Administrator will hold a Bidders' conference at AECOM, 99 Commerce Drive, Winnipeg Manitoba, from 9:00 to 10:00 on Wednesday June 16, 2010.

B4.2 The Bidder is advised that, at the Bidders' Conference, The Contract Administrator shall outline traffic and construction phasing requirements.

B4.3 The Bidder shall not be entitled to rely on any information or interpretation received at the Bidders' Conference unless that information or interpretation is provided by the Contract Administrator in writing.

B5. ENQUIRIES

B5.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

B5.2 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.

B5.3 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.

B5.4 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.

B5.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B5 unless that response or interpretation is provided by the Contract Administrator in writing.

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 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 sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B7.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.

- B7.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- 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 Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B16.
- B7.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B7.10 Notwithstanding B7.2 to B7.9, and in accordance with B8.6 deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B16.1(a).

B8. BID COMPONENTS

- B8.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;
 - (c) Bid Security
 - (i) Form G1: Bid Bond and Agreement to Bond, or Form G2: Irrevocable Standby Letter of Credit and Undertaking, or a certified cheque or draft;
- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.
- B8.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.
- B8.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.
- B8.5 Bidders are advised not to include any information/literature except as requested in accordance with B8.1.
- B8.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B16.1(a).
- B8.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.
- B8.8 Bids shall be submitted to:
- The City of Winnipeg
Corporate Finance Department
Materials Management Division
185 King Street, Main Floor
Winnipeg MB R3B 1J1

B9. BID

- B9.1 The Bidder shall complete Form A: Bid, making all required entries.
- B9.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- 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 own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers and the corporate seal, if the corporation has one, should be affixed;
 - (d) if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- 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 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B11. QUALIFICATION

- B11.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and
 - (b) be financially capable of carrying out the terms of the Contract; and
 - (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.
- B11.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
 - (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/debar.stm>
- B11.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
 - (a) have successfully carried out work similar in nature, scope and value to the Work; and
 - (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
 - (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);
- B11.4 Further to B11.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
 - (a) a valid COR certification number under the Certificate of Recognition (COR) Program administered by the Manitoba Construction Safety Association or by the Manitoba Heavy Construction Association's Safety, Health and Environment Program; or
 - (b) a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>)
- B11.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor, including:
 - (a) Details of three (3) projects including contact references that demonstrate the Bidder's or relevant Subcontractor's ability to successfully install large diameter pressure pipe (350 mm or larger) or AWWA C905 pipe; and
 - (b) Resumes of key project personnel who will be dedicated to this Project, detailing relevant experience in meeting the technical requirements of sub-clauses a) above. Key personnel shall be deemed to include General and/or Site Superintendents. A minimum of one (1) key personnel must have direct experience in the installation of AWWA C905 PVC pipe;
- B11.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.
- B12. BID SECURITY**
- B12.1 The Bidder shall provide bid security in the form of:
 - (a) a bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in

Manitoba, in the form included in the Bid Submission (Form G1: Bid Bond and Agreement to Bond); or

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

B12.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.

B12.1.2 All signatures on bid securities shall be original.

B12.1.3 The Bidder shall sign the Bid Bond.

B12.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.

B12.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

B12.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B12.1(c), it will be deposited and retained by the City as the performance security and no further submission is required.

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

B12.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

B13. OPENING OF BIDS AND RELEASE OF INFORMATION

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

B13.1.1 Bidders or their representatives may attend.

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

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

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

B14. IRREVOCABLE BID

- B14.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B14.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

B15. WITHDRAWAL OF BIDS

- B15.1 A Bidder may withdraw his Bid without penalty by giving written notice to the Manager of Materials at any time prior to the Submission Deadline.
- B15.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B15.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B15.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B15.1.3(b), declare the Bid withdrawn.
- B15.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B14.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

B16. EVALUATION OF BIDS

- B16.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation there from (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B11 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B7.
- B16.2 Further to B16.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.
- B16.3 Further to B16.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.
- B16.4 Further to B16.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.

B16.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

B16.4.2 Further to B16.1(a), in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B17. AWARD OF CONTRACT

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

B17.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.

B17.2.1 Without limiting the generality of B17.2, the City will have no obligation to award a Contract where:

- (a) the prices exceed the available City funds for the Work;
- (b) the prices are materially in excess of the prices received for similar work in the past;
- (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
- (d) only one Bid is received; or
- (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.

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

B17.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his 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 watermain upgrades and renewals at the intersection of Logan Avenue and McPhillips Street

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

- (a) Rehabilitation of existing feedermain chamber valves and piping, including sandblasting and painting.
- (b) Installation of 150 meters of 350 millimetre to 500 millimetre watermains.
- (c) Demolition of existing valve chambers.
- (d) Installation of four (4) City supplied 400 millimetre diameter AWWA C509 resilient wedge gate valves.
- (e) Installation of two (2) City supplied 500 millimetre AWWA C515 resilient wedge gate valves, including four (4) flange adaptors.
- (f) Pressure testing and disinfection of watermains.
- (g) Reconnection of existing watermains to the existing system.
- (h) Pavement restorations.

D3. DEFINITIONS

D3.1 When used in this Bid Opportunity:

- (a) "AWWA" means American Waterworks Association
- (b) "CSA" means Canadian standard Association
- (c) "NSF" means National Sanitation Foundation
- (d) "ASTM" means American Society for Testing and Materials; and
- (e) "CSA" means Canadian Standards Association

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is AECOM , represented by:

Mr. Frank Iwanchuk
Contract Administrator
99 Commerce Drive, Winnipeg Manitoba
Telephone No. (204) 477-5381
Facsimile No. (204) 284-2040

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

D5. CONTRACTOR'S SUPERVISOR

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

D6. NOTICES

- D6.1 Except as provided for in C23.2.2, all notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the Contractor shall be sent to the address or facsimile number identified by the Contractor in Paragraph 2 of Form A: Bid.
- D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3, D6.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D4.1.
- D6.3 Notwithstanding C21., all notices of appeal to the Chief Administrative Officer shall be sent to the attention of the Chief Financial Officer at the following address or facsimile number:

The City of Winnipeg
Chief Financial Officer
Administration Building, 3rd Floor
510 Main Street
Winnipeg MB R3B 1B9
Facsimile No.: (204) 949-1174

- D6.4 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following address or facsimile number:

The City of Winnipeg
Internal Services Department
Legal Services Division
Attn: City Solicitor
185 King Street, 3rd Floor
Winnipeg MB R3B 1J1
Facsimile No.: (204) 947-9155

D7. FURNISHING OF DOCUMENTS

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

SUBMISSIONS

D8. AUTHORITY TO CARRY ON BUSINESS

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

D9. SAFE WORK PLAN

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

D10. INSURANCE

- D10.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg and AECOM Canada Ltd. added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
 - (b) automobile liability insurance for owned automobiles used for or in connection with the Work in the amount of at least two million dollars (\$2,000,000.00) at all times during the performance of the Work and until the date of Total Performance;
- D10.2 Deductibles shall be borne by the Contractor.
- D10.3 The Contractor shall provide the City Solicitor with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than the date specified in C4.1 for the return of the executed Contract.
- D10.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D11. PERFORMANCE SECURITY

- D11.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:
- (a) a performance bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H1: Performance Bond), in the amount of fifty percent (50%) of the Contract Price; or
 - (b) an irrevocable standby letter of credit issued by a bank or other financial institution registered to conduct business in Manitoba and drawn on a branch located in Winnipeg, in the form attached to these Supplemental Conditions (Form H2: Irrevocable Standby Letter of Credit), in the amount of fifty percent (50%) of the Contract Price; or
 - (c) a certified cheque or draft payable to "The City of Winnipeg", drawn on a bank or other financial institution registered to conduct business in Manitoba, in the amount of fifty percent (50%) of the Contract Price.
- D11.1.1 Where the performance security is in the form of a certified cheque or draft, it will be deposited by the City. The City will not pay any interest on certified cheques or drafts furnished as performance security.
- D11.2 The Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D12. SUBCONTRACTOR LIST

D12.1 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.

D13. DETAILED WORK SCHEDULE

D13.1 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.

D13.2 The detailed work schedule shall consist of the following:

(a) a Gantt chart for the Work acceptable to the Contract Administrator.

D13.3 Further to D13.2(a), the 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) Rehabilitation of Offtake Chamber Piping
- (b) Installation of Temporary Pressurized Water Services
- (c) Installation of Temporary Pressure Plugs (identify all locations)
- (d) Installation of Watermains across Logan Avenue
- (e) Installation of Watermains across Midtown/McPhillips Feedermain
- (f) Installation of all other watermains
- (g) Pressure testing and disinfection
- (h) Reconnections of Watermains (identify all locations)
- (i) Pavement restoration

D13.4 Further to D13.2(a), 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.

D14. SECURITY CLEARANCE

D14.1 Each individual proposed to perform the following portions of the Work:

- (a) any Work on private property;
- (b) any Work within City facilities other than:
 - (i) an underground structure such as a manhole;
 - (ii) in areas and at times normally open to the public;
- (c) communicating with residents and homeowners in person or by telephone;

shall be required to obtain a Criminal Record Search Certificate from the police service having jurisdiction at his place of residence.

D14.2 Prior to the commencement of any Work specified in D14.1, and during the term of the Contract if additional or replacement individuals are proposed to perform Work, the Contractor shall supply the Contract Administrator with a Criminal Record Search Certificate obtained not earlier than one (1) year prior to the Submission Deadline, or a certified true copy thereof, for each individual proposed to perform such Work.

D14.3 Any individual for whom a Criminal Record Search Certificate is not provided, or for whom a Criminal Record Search Certificate indicates any convictions or pending charges related to

property offences or crimes against another person, will not be permitted to perform any Work specified in D14.1.

D14.4 Any Criminal Record Search Certificate obtained thereby will be deemed valid for the duration of the Contract subject to a repeated records search as hereinafter specified.

D14.5 Notwithstanding the foregoing, at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated criminal records search. Any individual who fails to provide a satisfactory Criminal Record Search Certificate as a result of a repeated criminal records search will not be permitted to continue to perform any Work specified in D14.1.

SCHEDULE OF WORK

D15. COMMENCEMENT

D15.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.

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 D8;
- (ii) evidence of the workers compensation coverage specified in C6.15;
- (iii) the Safe Work Plan specified in D9;
- (iv) evidence of the insurance specified in D10;
- (v) the performance security specified in D11;
- (vi) the Subcontractor list specified in D12;
- (vii) the detailed work schedule specified in D13; and
- (viii) the security clearances 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.

D15.2.1 Further to D15.2(a)(viii), subject to all other requirements being met, the Contractor may commence Work not involving access to private residences, businesses or City facilities prior to submitting the security clearances.

D15.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.

D15.4 The City intends to award this Contract by July 6, 2010.

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. CRITICAL STAGES

D16.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

- (a) Acceptable installation, testing and reconnection of all watermains by September 1, 2010.
- (b) Complete opening of traffic by September 3, 2010.

D17. SUBSTANTIAL PERFORMANCE

D17.1 The Contractor shall achieve Substantial Performance within thirty (30) consecutive Calendar Days of the commencement of the Work as specified in D15.

- D17.2 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.
- D17.3 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.
- D17.4 Work to be completed to achieve Accelerated Completion shall include:
- (a) Acceptable completion of all watermain installation, testing and reconnections and mains ready to be returned to service;
 - (b) Completion of all pavement repairs; and
 - (c) All roadways ready to be returned to Traffic Services control and completely open to traffic.

D18. TOTAL PERFORMANCE

- D18.1 The Contractor shall achieve Total Performance within thirty-five (35) consecutive Calendar Days of the commencement of the Work as specified in D15.
- D18.2 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.
- D18.3 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.

D19. LIQUIDATED DAMAGES

- D19.1 If the Contractor fails to achieve Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Calendar Day for each and every Calendar Day following the days fixed herein for same during which such failure continues:
- (a) Acceptable installation, testing and reconnection of all watermains - one thousand five hundred dollars (\$1,500);
 - (b) Complete opening of traffic – five thousand dollars (\$5,000);
 - (c) Substantial Performance – five thousand dollars (\$5,000);
 - (d) Total Performance – five hundred dollars (\$500).
- D19.2 The amounts specified for liquidated damages in D19.1 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.
- D19.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

CONTROL OF WORK

D20. JOB MEETINGS

- D20.1 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.

D20.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

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

D21.1 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).

MEASUREMENT AND PAYMENT

D22. PAYMENT

D22.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D23. WARRANTY

D23.1 Warranty is as stated in C13.

FORM H1: PERFORMANCE BOND
(See D11)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____.)

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

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

BID OPPORTUNITY NO. 459-2010

WATERMAIN SUPPLY UPGRADES LOGAN AND MCPHILLIPS

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

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

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

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

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

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

_____ day of _____, 20____ .

SIGNED AND SEALED
in the presence of:

(Witness as to Principal if no seal)

(Name of Principal)

Per: _____ (Seal)

Per: _____

(Name of Surety)

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

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

(Date)

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

RE: PERFORMANCE SECURITY - BID OPPORTUNITY NO. 459-2010
WATERMAIN SUPPLY UPGRADES LOGAN AND MCPHILLIPS

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
	Cover Sheet and List of Project Drawings
D-12109	McPhillips Street – Plan & Profile Thru Existing Offtake Chamber
D-12110	McPhillips Street – Plan & Profile
D-12111	Logan Avenue – Plan & Profile Along Logan Avenue South PL

GENERAL REQUIREMENTS

E2. OFFICE FACILITIES

- E2.1 The Contractor shall supply office facilities meeting the following requirements:
- The field office shall be conveniently located near the Site of the Work.
 - The building shall have a minimum floor area of 20 square metres, with window area of 3 square metres and a door entrance with suitable lock satisfactory to the Contract Administrator.
 - The building shall be suitable for all-weather use. It shall be capable of maintaining a temperature range between 16°C and 25°C.
 - The building shall be supplied with adequate lighting and 120 Volt power supply.
 - The building shall be furnished with one desk, one meeting table, one drafting table, one filing cabinet and six chairs, all satisfactory to the Contract Administrator.
 - A separate toilet with door lock shall be supplied for the Contract Administrator.
 - The field office shall be cleaned weekly immediately prior to the Job Site Meetings to the satisfaction of the Contract Administrator.
 - The provision of the field office with the aforementioned furnishings and equipment shall also include maintenance and removal of the field office, operating costs and any service installation costs.

E3. TRAFFIC CONTROL

- E3.1 Further to CW 1130 3.7, the City of Winnipeg Traffic Services Branch will erect and maintain traffic control on Regional Streets.
- E3.2 Proposed Traffic Staging is indicted on Figure 1 Traffic Staging, included in Appendix A. The Contractor shall review proposed staging, or propose alternate staging and submit a traffic

staging plan to the Contract Administrator for review. In all cases, the Contractor shall be responsible for review of traffic staging to fit proposed construction sequencing. At a minimum, the following traffic staging restrictions shall be incorporated:

- (a) Single lane traffic must be maintained in all directions at all times; except as noted herein.
- (b) A single complete closure of Logan Avenue will be allowed to facilitate pipe installation across Logan Avenue. Closure is restricted to the hours of 20:00 on Friday to 05:00 on the following Monday.

E3.3 All other traffic control and signing shall be provided in accordance to CW 1130 3.7

E3.4 Further to CW 1130, major changes to traffic patterns shall be scheduled to occur on weekends.

E4. WATERMAINS

E4.1 Description

- (a) This specification shall amend and supplement CW 2110 Watermains.

E4.2 City Supplied Materials

- (a) The City of Winnipeg shall provide the Contractor with the following materials:
 - (i) Two (2) AWWA C509 400 millimetre diameter resilient seat gate valves, c/w push-on ends, conforming to the City of Winnipeg Specifications – estimated date of availability of valves is prior to Award of Contract.
 - (ii) Two (2) AWWA C509 400 millimetre diameter resilient seat gate valves, c/w push-on ends, conforming to the City of Winnipeg specifications – estimated date of availability of valves is July 19, 2010.
 - (iii) Two (2) AWWA C515 500 millimetre diameter resilient seat gate valves, c/w flanged ends - estimated date of availability of valves is July 26, 2010.
 - (iv) Four (4) AWWA C219 500 millimetre diameter flanged coupling adaptors suitable for coupling valves to AWWA C905 PVC pipe – estimated date of availability of couplers is July 26, 2010.
- (b) The Contractor shall attend a delivery inspection at City of Winnipeg, Central Stores 552 Plinquet, with the Contract Administrator. The City of Winnipeg, prior to turning valves over to the Installation Contractor, shall rectify any damage noted during the delivery inspection. Written acceptance of the valves and actuators by a duly completed "Certificate of Equipment Delivery (Form 200)" (Appendix B) shall constitute acceptance for installation from the Installation Contractor.
- (c) The Installation Contractor may leave the valve and actuator in storage at the City facility, until required on-site. The Contractor shall arrange and pay for all loading, off-loading and transportation from the City facility to the job site.
- (d) Once removed from storage at the City facility, the Contractor shall be responsible for 24 hour secure storage for the valve. Once delivered to the Site for installation, the valves shall remain stored in a secure, on-site storage compound.

E4.3 Materials

- (a) Polyvinyl Chloride (PVC) Pipe
 - (i) Dimension Ratio (DR) PVC pipe shall conform to the latest revision of AWWA C905 and CSA B137.3, with a dimension ratio (DR) of DR18 for pipe 350 millimetre to 600 millimetre diameter.
 - (ii) Further to AWWA C905, 4.3.2.2 Elastomeric-gasket bell ends shall conform to the requirements of Section 4.3.2.2 a). Designs not meeting the requirements of Sec. 4.3.2.2(a) will not be permitted.

- (b) Gaskets
 - (i) Further to CW 2110 Clause 2.4 gas and oil resistant gaskets shall be used in all pipe and fittings. Gaskets shall be oil and gas resistant Nitrile conforming to ASTM F477 and shall be supplied by the pipe manufacturer.
- (c) Fabricated Fittings
 - (i) Fabricated fittings shall be thermally butt welded segments, with overwrapped reinforcement, conforming with AWWA C905 and CSA B137.3. Where non-standard fittings and bend angles are required, fittings shall be constructed in every way to conform to the nearest CSA certified standard fitting.
- (d) Closures
 - (i) Main line PVC to PVC closures shall be fabricated PVC slide collars conforming to AWWA C905 and CSA B137.3. Pipe class to be the same as for mainline piping.
- (e) Joint Restraints
 - (i) PVC fitting joint restraints shall be constructed of ductile iron to ASTM A536 Grade 65-45-12, EBAA Iron Series 2500, Uniflange Series 1360 or Approved Equal in accordance with B7, c/w 316 stainless steel hardware. Restraints to be tested in accordance with ASTM F1674.
- (f) Buried metallic pipe couplers and flange connections shall be protected against corrosion by wrapping with Denso Tape system, consisting of Denso Profiling Mastic, Denso Paste and Densyl Tape to AWWA C217, or approved equal in accordance with B7.
- (g) Grout
 - (i) Portland cement shall be CSA A3000 Type HS Sulphate Resistant Cement.
 - (ii) Minimum 28 day strength 20 MPa.
 - (iii) Pumpable consistency.

E4.4 Submittals

- (a) Fittings
 - (i) Submit details of all fabricated fittings and specials, including details of proposed connections to existing pipelines.
 - (ii) Submit fabricated fitting design notes and overwrap reinforcing details.
 - (iii) Fabrication details to be stamped by a Professional Engineer, registered in the Province of Manitoba.
- (b) Affidavit of Compliance
 - (i) An affidavit of compliance signed by an officer of the pipe manufacturing company shall be provided stating that the pipe and fittings comply with this Specification, in accordance with Section 6.3 of AWWA C905-97.

E4.5 Quality Control

- (a) Inspection
 - (i) The Contractor shall afford the Contract Administrator every facility to access and inspect all plant to be provided, work to be performed, materials to be supplied and equipment or machinery to be installed in accordance with the provisions of C5.03.
- (b) Testing of Pipe and Materials
 - (i) The Contractor shall provide access to the Contract Administrator or his appointed representative to conduct plant inspections, in accordance to Section 5.3 of AWWA C905-97. The Contractor shall provide a minimum of 7 calendar days notice of commencement of pipe manufacture, for the purposes of scheduling plant inspections.
 - (ii) The Contract Administrator reserves the right to conduct third party quality control testing.

- (c) Dimensional Checks
 - (i) Provide dimensional checks in accordance to AWWA C905, Section 5.1.1.

E4.6 Construction

- (a) Excavation
 - (i) The Contractor shall note that previous work in this area has uncovered former streetcar rails, ties and other debris. If encountered, remove and dispose of this material.
 - (ii) Excavation for on line renewals shall include removal and disposal of all existing pipes, thrust blocks and fittings. No additional payment will be made.
- (b) Trenchless Installations
 - (i) Confirm elevations and locations of all feeder mains prior to coring. Confirm elevation of pilot holes crossing under feeder mains prior to coring.
 - (ii) Confirm elevation of the base of any bedding under feeder mains prior to coring. Prevent loss of bedding material under feeder mains.
 - (iii) Further to CW 2110, for installation in cored hole, a neat hole shall be cored out for the installation of the forcemain pipe to a maximum of 25 mm larger than the largest pipe outside dimension. "Plugging", "reaming" or other construction methods that displace soil shall not be permitted.
 - (iv) For trenchless installations under existing pipes and feeder mains, grout annulus of cored hole. Prevent floatation of pipe during grouting.
- (c) Existing Pipe Closures
 - (i) Existing pipe diameters at proposed closure points are unknown. The Contractor shall expose piping at proposed connection points and verify pipe outside diameter prior to cutting pipes.
 - (ii) The Contractor shall, where required to meet project schedule, procure sufficient pipe couplers, sleeves, followers, end rings or gaskets and have available on site such that connections can be made in a timely manner. No additional compensation will be made for additional materials or re-stocking charges.
- (d) Trench Backfill
 - (i) Further to CW 2030, Class 3 backfill shall be used in all trenches.
- (e) Restrained Pipe Joints
 - (i) Where indicated on the Drawings, or where ground conditions and adjacent structures do not permit use of conventional concrete thrust blocks, restrained joints shall be used.
- (f) Removal and Demolition of Existing Structures
 - (i) Where indicated on the Drawings as "Remove", completely demolish and remove existing structures.
 - (ii) Where structures are identified on the drawings as "Abandon", structures shall be demolished to a minimum depth of 1.5 metres below finish grade and backfilled to Class 3 standards.
 - (iii) Where structures are required to be removed to facilitate installation of pipe, structures must be removed completely within 1.0 metres of the outside of the pipe being installed.
- (g) Protection of Hydrants
 - (i) Where indicated on the Drawings, install bollards, as detailed on the Drawings to protect fire hydrants.
- (h) Construction Phasing
 - (i) Construction shall be phased to minimize disruption of services and traffic.

- (ii) The Contractor shall be responsible for all construction phasing. The Contractor shall submit a construction phasing plan to the Contract Administrator a minimum of five (5) business days prior to commencement of construction.

E4.7 Method of Measurement and Basis of Payment

- (a) Installation of Valves
 - (i) Valve installation will be measured on a unit basis for each size and type and paid for at the Contract Unit Price for "Watermain Valve". For City supplied valves, Contractor shall provide valve box and extension stem.
 - (ii) Valve installations with bypass assemblies shall include all fittings and bypass valve, including tees, bends, 150 mm bypass valves and all restraint materials, thrust blocks and accessories including valve box and extension stem.
- (b) Bollards
 - (i) Bollards will be measured and paid on a unit basis at the contract unit price for "Bollards".

E5. REHABILITATION OF OFFTAKE CHAMBER PIPING

E5.1 Materials

- (a) Paint
 - (i) Paint for exposed metal surfaces shall be in accordance with AWWA C210. Interior coatings shall comply with ANSI/NSF 61 "Drinking Water System Components – Health Effects". Coating shall be two (2) or more layers (5 mils minimum each coat) Polyamide Epoxy, Amerlock 400, Tnemec Series 140 F Pota-Pox Plus or approved equal.

E5.2 Construction Methods

- (a) Construction Phasing
 - (i) Recoating of valves and fittings should be, if possible, scheduled immediately upon Award of Contract. Work in this chamber that may involve shutdown of water supply in this chamber cannot occur after September 10, 2010, and cannot be conducted while other watermains under this Contract are out of service.
- (b) Recoating of Existing Valves and Fittings
 - (i) Existing Chamber Photographs are provided in Appendix C to aide in evaluation of chamber piping.
 - (ii) Where concrete pipe coatings have been cracked and are disbonded from the pipe, carefully sawcut and chip off loose and disbonded material. Removal of disbonded concrete shall be uniform around the circumference of the pipe. Allow for a minimum of 100 millimetres of concrete removal at each pipe and fitting end. Do not remove more coating than required to expose underlying corroded pipe.
 - (iii) Seal remaining visible grout surface cracks with a penetrating crack sealer, Xypex or approved equal.
 - (iv) Carefully inspect all fasteners after cleaning. Notify Contract Administrator of severely corroded or damaged fasteners.
 - (v) Prepare metal surfaces for recoating by blast cleaning to near-white metal as specified by Joint Surface Preparation Standard NACE No.2/SSPC-SP10. Remove all dust and loose residues from the prepared surfaces. The surface shall be roughened to a degree suitable for the coating system employed. Carefully mask off all machined surfaces including butterfly valve shafts and operator shafts to protect them from abrasive blasting and paint.
 - (vi) Paint prepared surfaces in accordance to AWWA C210. Apply primer to cleaned surfaced immediately upon completion of blasting and cleaning.
 - (vii) Provide adequate chamber ventilation and heating for curing of paint system.

- (c) Restoration of Pit Drain
 - (i) Disassemble existing pit drain cleanout and backflow valve. Clean out pit drain piping and inspect drain pipe with a suitable push type CCTV camera. Notify Contract Administrator of any noted defects.

E5.3 Measurement and Payment

E5.3.1 Rehabilitation of Offtake Chamber Piping

- (a) Rehabilitation of Offtake Chamber Piping shall be measured on a lump sum basis and paid for at the Contract Lump Sum Price for "Rehabilitation of Offtake Chamber Piping". Payment shall include all works identified in this Specification.

E6. REMOVAL OF CONTAMINATED SOIL

E6.1 Description

- (a) Further to CW 1130 Clause 3.4, this Specification outlines the requirements for the disposal of hydrocarbon contaminated soil.

E6.2 Construction Methods

- (a) Excavate test pits in advance of construction to allow for sampling and determination of the level of contaminants.
- (b) Soils requiring removal and disposal will be identified by the Contract Administrator.
- (c) Handle all contaminated soils in accordance with provincial regulations.
- (d) All hydrocarbon impacted soil removed as part of the construction works shall be transported directly to a Licensed Waste Disposal Grounds in accordance with provincial regulations.

E6.3 Measurement and Payment

- (a) Disposal of hydrocarbon contaminated soil at a Licensed Waste Disposal Grounds in accordance with provincial regulations will be measured on a volume basis paid for at the Contract Unit Price per cubic metre for "Disposal of Hydrocarbon Contaminated Soil". The volume to be paid will be calculated from measurements of the trench taken by the Contract Administrator. The volume to be paid for will be the total number of cubic metres of hydrocarbon material excavated, and disposed of in accordance with this Specification, accepted and measured by the Contract Administrator.

E7. PAVEMENT RESTORATION

E7.1 Construction Methods

- (a) Except where indicated on the Drawings, or otherwise indicated by the Contract Administrator, permanent pavement restoration will not be required.
- (b) Remove pavements in accordance to CW 3230.
- (c) Temporary pavement restoration shall consist of a minimum of:
 - (i) 225 millimetre thick granular subbase conforming to CW 3110
 - (ii) 75 millimetres of granular base course conforming to CW 3110
 - (iii) 100 millimetres of hot mix asphalt conforming to CW 3410
- (d) Where temporary pavements include repairs to gutter lanes, a 150 mm high by 150 mm wide asphaltic concrete curb shall be installed.

E7.2 Method of Measurement and Basis of Payment

- (a) Pavement Removal
 - (i) Pavement Removal will be measured and paid on an area basis per square metre, at the Contract Unit Price for "Pavement Removal"

- (b) Temporary Asphalt Curb
 - (i) Temporary asphalt curb will be measured and paid on a linear meter basis, per linear metre, at the Contract Unit Price for "Temporary Asphalt Curb".

E8. STREET LIGHT OR UTILITY CABLE

E8.1 Construction Methods

- E8.1.1 At locations where street lighting cable is to be replaced as directed by the Contract Administrator, the Contractor shall, after completion of backfilling and grading of watermain trenches, construct a trench suitable for the placement of street lighting cable or install a 50 mm HDPE conduit. The HDPE conduit will be supplied by the street lighting utility at no cost to the Contractor.
- E8.1.2 The trench or conduit pipe shall be constructed on the same alignment as the street light bases or as directed by the Contract Administrator. The bottom of the trench shall be between 600 mm and 750 mm below the top of the curb or pavement and shall be no more than 150 mm in width.
- E8.1.3 The Contractor shall provide 48 hours notice to the Contract Administrator prior to the commencement of trenching or coring operations in order to allow coordination of the cable installation by the street lighting utility.
- E8.1.4 Upon completion of cable installations by the street lighting utility the Contractor shall backfill, compact and grade sections disturbed.

E8.2 Method of Measurement and Basis of Payment

E8.2.1 Street Light or Utility Cable Trenching

- (a) Trenching for the installation of street lighting cable shall be measured on a linear metre basis based on measurements take by the Contract Administrator. Payment shall be made at the Contract Unit Price for "Street Light Cable – Trenching", measured as specified herein which price shall be payment in full for performing all operations and supply all materials and all other items incidental to the Work included in this Specification.