



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 477-2009

CONSTRUCTION OF THE CHARLESWOOD HOWE DRAIN

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 CONSTRUCTION OF THE CHARLESWOOD HOWE DRAIN

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, September 1, 2009.

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.

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D3.1.

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

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

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

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

B5. ADDENDA

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

B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.

B5.2.1 Addenda will be available on the Bid Opportunities page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/bidopp.asp>

B5.2.2 The Bidder is responsible for ensuring that he has received all addenda and is advised to check the Materials Management Division website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B5.3 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Bid Opportunity.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- B.6.4.1 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.6.4.2 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;
 - B.6.4.3 identify any anticipated cost or time savings that may be associated with the substitute;
 - B.6.4.4 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;
 - B.6.4.5 certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his sole discretion grant approval for the use of a substitute as an "approved equal" or as an "approved alternative", or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, only to the Bidder who requested approval of the substitute.
- B6.6.1 The Bidder requesting and obtaining the approval of a substitute shall be entirely responsible for disseminating information regarding the approval to any person or persons he wishes to inform.
- B6.7 If the Contract Administrator approves a substitute as an "approved equal", any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an "approved alternative", any Bidder bidding that approved alternative may base his Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B15.
- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.
- B6.10 Notwithstanding B6.2 to B6.9, and in accordance with B7.6 deviations inconsistent with the Bid Opportunity document shall be evaluated in accordance with B.15.1.1.

B7. BID COMPONENTS

B7.1 The Bid shall consist of the following components:

B.7.1.1 Form A: Bid;

B.7.1.2 Form B: Prices;

B.7.1.3 Bid Security

- (a) Form G1: Bid Bond and Agreement to Bond, or
Form G2: Irrevocable Standby Letter of Credit and Undertaking, or
a certified cheque or draft;

B7.2 Further to B7.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B6.

B7.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely, to constitute a responsive Bid.

B7.4 The Bid shall be submitted enclosed and sealed in an envelope clearly marked with the Bid Opportunity number and the Bidder's name and address.

B7.4.1 Samples or other components of the Bid which cannot reasonably be enclosed in the envelope may be packaged separately, but shall be clearly marked with the Bid Opportunity number, the Bidder's name and address, and an indication that the contents are part of the Bidder's Bid.

B7.5 Bidders are advised not to include any information/literature except as requested in accordance with B7.1.

B7.6 Bidders are advised that inclusion of terms and conditions inconsistent with the Bid Opportunity document, including the General Conditions, will be evaluated in accordance with B.15.1.1.

B7.7 Bids submitted by facsimile transmission (fax) or internet electronic mail (e-mail) will not be accepted.

B7.8 Bids shall be submitted to:

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

B8. BID

B8.1 The Bidder shall complete Form A: Bid, making all required entries.

B8.2 Paragraph 2 of Form A: Bid shall be completed in accordance with the following requirements:

B.8.2.1 if the Bidder is a sole proprietor carrying on business in his own name, his name shall be inserted;

B.8.2.2 if the Bidder is a partnership, the full name of the partnership shall be inserted;

B.8.2.3 if the Bidder is a corporation, the full name of the corporation shall be inserted;

B.8.2.4 if the Bidder is carrying on business under a name other than his own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

- B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.
- B8.3 In Paragraph 3 of Form A: Bid, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B8.4 Paragraph 12 of Form A: Bid shall be signed in accordance with the following requirements:
- B.8.4.1 if the Bidder is a sole proprietor carrying on business in his own name, it shall be signed by the Bidder;
- B.8.4.2 if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
- B.8.4.3 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;
- B.8.4.4 if the Bidder is carrying on business under a name other than his own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B8.4.1 The name and official capacity of all individuals signing Form A: Bid should be printed below such signatures.
- B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B9. PRICES

- B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B9.4 Prices from Non-Resident Bidders are subject to a Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B10. QUALIFICATION

- B10.1 The Bidder shall:
- B.10.1.1 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.10.1.2 be financially capable of carrying out the terms of the Contract; and
- B.10.1.3 have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.
- B10.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- B.10.2.1 be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information

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

- B10.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- B.10.3.1 have successfully carried out work similar in nature, scope and value to the Work; and
 - B.10.3.2 be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
 - B.10.3.3 have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);
- B10.4 Further to B.10.3.3, 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:
- B.10.4.1 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.10.4.2 a report or letter to that effect from an independent reviewer acceptable to the City. (A list of acceptable reviewers and the review template are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>)
- B10.5 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B10.6 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B11. BID SECURITY

- B11.1 The Bidder shall provide bid security in the form of:
- B.11.1.1 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.11.1.2 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
 - B.11.1.3 a certified cheque or draft payable to "The City of Winnipeg", in the amount of at least fifty percent (50%) of the Total Bid Price, drawn on a bank or other financial institution registered to conduct business in Manitoba.
- B11.1.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.
- B11.1.2 All signatures on bid securities shall be original.
- B11.1.3 The Bidder shall sign the Bid Bond.

- B11.1.4 The Surety shall sign and affix its corporate seal on the Bid Bond and the Agreement to Bond.
- B11.2 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the performance security furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.
- B11.2.1 Where the bid security provided by the successful Bidder is in the form of a certified cheque or draft pursuant to B.11.1.3, it will be deposited and retained by the City as the performance security and no further submission is required.
- B11.2.2 The City will not pay any interest on certified cheques or drafts furnished as bid security or subsequently retained as performance security.
- B11.3 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Bid Opportunity.

B12. OPENING OF BIDS AND RELEASE OF INFORMATION

- B12.1 Bids will be opened publicly, after the Submission Deadline has elapsed, in the office of the Corporate Finance Department, Materials Management Division, or in such other office as may be designated by the Manager of Materials.
- B12.1.1 Bidders or their representatives may attend.
- B12.1.2 Bids determined by the Manager of Materials, or his designate, to not include the bid security specified in B11 will not be read out.
- B12.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>
- B12.3 After award of Contract, the name(s) of the successful Bidder(s) and the Contract Amount(s) will be available on the Closed Bid Opportunities (or Public/Posted Opening & Award Results) page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt>
- B12.4 The Bidder is advised that any information contained in any Bid may be released if required by City policy or procedures, by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law.

B13. IRREVOCABLE BID

- B13.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid.
- B13.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the performance security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid.

B14. WITHDRAWAL OF BIDS

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

- B14.1.1 Notwithstanding C23.3, the time and date of receipt of any notice withdrawing a Bid shall be the time and date of receipt as determined by the Manager of Materials.
- B14.1.2 The City will assume that any one of the contact persons named in Paragraph 3 of Form A: Bid or the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid, and only such person, has authority to give notice of withdrawal.
- B14.1.3 If a Bidder gives notice of withdrawal prior to the Submission Deadline, the Manager of Materials will:
- (a) retain the Bid until after the Submission Deadline has elapsed;
 - (b) open the Bid to identify the contact person named in Paragraph 3 of Form A: Bid and the Bidder's authorized representatives named in Paragraph 12 of Form A: Bid; and
 - (c) if the notice has been given by any one of the persons specified in B14.1.3(b), declare the Bid withdrawn.
- B14.2 A Bidder who withdraws his Bid after the Submission Deadline but before his Bid has been released or has lapsed as provided for in B13.2 shall be liable for such damages as are imposed upon the Bidder by law and subject to such sanctions as the Chief Administrative Officer considers appropriate in the circumstances. The City, in such event, shall be entitled to all rights and remedies available to it at law, including the right to retain the Bidder's bid security.

B15. EVALUATION OF BIDS

- B15.1 Award of the Contract shall be based on the following bid evaluation criteria:
- B.15.1.1 compliance by the Bidder with the requirements of the Bid Opportunity, or acceptable deviation there from (pass/fail);
 - B.15.1.2 qualifications of the Bidder and the Subcontractors, if any, pursuant to B10 (pass/fail);
 - B.15.1.3 Total Bid Price;
 - B.15.1.4 economic analysis of any approved alternative pursuant to B6.
- B15.2 Further to B.15.1.1, the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.
- B15.3 Further to B.15.1.2, the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his Bid or in other information required to be submitted, that he is responsible and qualified.
- B15.4 Further to B.15.1.3, the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B15.4.1 If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.
 - B15.4.2 Further to B.15.1.1, in the event that a unit price is not provided on Form B: Prices, the City will determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B16. AWARD OF CONTRACT

- B16.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

- B16.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be responsible and qualified, and the Bids are determined to be responsive.
- B16.2.1 Without limiting the generality of B16.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with its own forces;
 - (d) only one Bid is received; or
 - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B16.3 Where an award of Contract is made by the City, the award shall be made to the responsible and qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B15.
- B16.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his Bid upon written request to the Contract Administrator.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. SCOPE OF WORK

D2.1 The Work to be done under the Contract shall consist of construction of a drainage path between Loudoun Rd and McCreary Rd, along the projection of the Howe Ave right of way, consisting of both open channel and closed pipe.

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

D.2.2.1 Earth and Base works

- (a) Excavation of open channel
- (b) Restoration including ditch grading, roadway repairs, riprap placement and seeding

D.2.2.2 Drain Crossing Corrugated Steel Pipe (CSP) Works

- (a) Supply and installation of CSP drain crossings
- (b) Removal, replacement and/or re-grading of existing CSP culverts

D.2.2.3 LDS Piping works

- (a) Supply and installation of 1200 mm diameter concrete LDS piping
- (b) Supply and installation of Type II inlet safety gratings on LDS pipes

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is:

Kas Zurek P.Eng
Water and Waste Department
110-1199 Pacific Ave
Winnipeg, Manitoba R3E 3S8
Telephone No. (204) 986-2025
Facsimile No. (204) 986-5345

D3.2 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. CONTRACTOR'S SUPERVISOR

D4.1 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.

D5. NOTICES

- D5.1 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.
- D5.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D5.3, D5.4 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator at the address or facsimile number identified in D3.1.
- D5.3 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
- D5.4 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

D6. FURNISHING OF DOCUMENTS

- D6.1 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

D7. AUTHORITY TO CARRY ON BUSINESS

- D7.1 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.

D8. SAFE WORK PLAN

- D8.1 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.
- D8.2 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>

D9. INSURANCE

- D9.1 The Contractor shall provide and maintain the following insurance coverage:
- D.9.1.1 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;
 - D.9.1.2 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;
 - D.9.1.3 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.
- D9.2 Deductibles shall be borne by the Contractor.
- D9.3 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.
- D9.4 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.

D10. PERFORMANCE SECURITY

- D10.1 The Contractor shall provide and maintain performance security until the expiration of the warranty period in the form of:
- D.10.1.1 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
 - D.10.1.2 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
 - D.10.1.3 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.
- D10.1.1 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.
- D10.2 If the bid security provided in his Bid was not a certified cheque or draft pursuant to B.11.1.3, 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.

D11. DETAILED WORK SCHEDULE

D11.1 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.

D11.2 The detailed work schedule shall consist of the following:

(a) a Gantt chart for the Work

all acceptable to the Contract Administrator.

D11.3 Further to D11.2(a), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of activity or task. The time shall be on the horizontal axis, and the activity or task shall be on the vertical axis.

D12. SECURITY CLEARANCE

D12.1 Each individual proposed to perform the following portions of the Work:

(a) any Work on private property;

(b) 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.

D12.2 Prior to the commencement of any Work specified in D12.1, 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.

D12.3 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 D12.1.

D12.4 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.

D12.5 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 D12.1.

SCHEDULE OF WORK

D13. COMMENCEMENT

D13.1 The Contractor shall not commence any Work until he is in receipt of a letter of intent from the Award Authority authorizing the commencement of the Work.

D13.2 The Contractor shall not commence any Work on the Site until:

D.13.2.1 the Contract Administrator has confirmed receipt and approval of:

(a) evidence of authority to carry on business specified in D7;

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

- (c) the Safe Work Plan specified in D8;
- (d) evidence of the insurance specified in D9;
- (e) the performance security specified in D10;
- (f) the detailed work schedule as specified in D11;
- (g) the security clearances as specified in D12

D.13.2.2 the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.

D13.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the letter of intent.

D13.3 The Contractor shall not commence the Work on the Site before September 15, 2009.

D14. SUBSTANTIAL PERFORMANCE

D14.1 The Contractor shall achieve Substantial Performance by November 15th, 2009.

D14.2 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.

D14.3 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.

D15. TOTAL PERFORMANCE

D15.1 The Contractor shall achieve Total Performance by November 30th, 2009.

D15.2 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.

D15.3 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.

D16. LIQUIDATED DAMAGES

D16.1 If the Contractor fails to achieve Substantial Performance or Total Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City the following amounts per Working Day for each and every Working Day following the day fixed herein for same during which such failure continues:

- (a) Substantial Performance – One Thousand dollars (\$1,000.00);
- (b) Total Performance – Five Hundred dollars (\$500.00).

D16.2 The amount specified for liquidated damages in D16.1 is based on a genuine pre-estimate of the City's damages in the event that the Contractor does not achieve Substantial Performance by the day fixed herein for same.

D16.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D17. SCHEDULED MAINTENANCE

D17.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

D.17.1.1 Ditch Bottom and Side Slope Seeding maintenance, as specified in CW 3520;

D.17.1.2 Natural Prairie Seeding maintenance, as specified in CW 3520;

D.17.1.3 Lawn Seeding maintenance, as specified in CW 3520;

D17.2 Determination of Substantial Performance and Total Performance shall be exclusive of scheduled maintenance identified herein. All scheduled maintenance shall be completed prior to the expiration of the warranty period. Where the scheduled maintenance cannot be completed during the warranty period, the warranty period shall be extended for such period of time as it takes the Contractor to complete the scheduled maintenance.

CONTROL OF WORK

D18. JOB MEETINGS

D18.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

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

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

D19.1 Further to C6.24, the Contractor shall be the Prime Contractor and shall serve as, and have the duties of the Prime Contractor in accordance with The Workplace Safety and Health Act (Manitoba).

MEASUREMENT AND PAYMENT

D20. PAYMENT

D20.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D21. WARRANTY

D21.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter, except where longer warranty periods are specified in the respective Specification sections, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

D21.1.1 For the purpose of Performance Security, the warranty period shall be one (1) year.

- D21.2 Notwithstanding C13.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.
- D21.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

FORM H1: PERFORMANCE BOND
(See D10)

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. 477-2009

CONSTRUCTION OF THE CHARLESWOOD HOWE DRAIN

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 D10)

(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. 477-2009
CONSTRUCTION OF THE CHARLESWOOD HOWE DRAIN

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

(Name of Contractor)

(Address of Contractor)

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

_____ Canadian dollars.

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

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

Partial drawings are permitted.

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

(Address)

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

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

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

(Date)

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

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

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

(Name of bank or financial institution)

Per: _____
(Authorized Signing Officer)

Per: _____
(Authorized Signing Officer)

PART E - SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

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

<u>Specification No.</u>	<u>Specification Title</u>
CAN3-G401	CSA Specification for Corrugated Steel Pipe (CSP)

City of Winnipeg Culvert and Drainage Inlet/Outlet Safety Guidelines

<u>Drawing No.</u>	<u>Drawing Name/Title</u>
	Cover Sheet
LD-5423	Howe Avenue – Loudoun Road to 680 m East of Loudoun road
LD-5424	Howe Avenue – 680 m East of Loudoun road to 20 m West of McConnell Road
LD-5425	Howe Avenue – 20 m West of McConnell Road to McCreary Road
LD-5426	Clearing and Grubbing – Howe Avenue – Loudoun Road to McCreary Road
LD-5436	Miscellaneous Details

GENERAL REQUIREMENTS

E2. PROTECTION OF EXISTING TREES

- E2.1 Do not remove existing trees except for within the area designated as 25m Drainage Channel Easement and 5m Construction Easement shown on the drawings and take the following precautionary steps to avoid damage from construction activities to existing trees outside of the limits of these areas.
- E2.2 Do not stockpile materials and soil or park vehicles and equipment within 2 meters of trees.
- E2.3 Strap mature tree trunks with 25 x 150 x 2400 wood planks. Smaller trees shall be similarly protected using appropriately sized wood planks.
- E2.4 Excavation 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.
- E2.5 Work on the 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 branches.
- E2.6 All damage to existing trees due to construction activities shall be repaired to the requirements and satisfaction of the City of Winnipeg, Forestry Branch at the Contractor's expense

E2.7 Cost for protection of trees will be included in cost for excavation.

E3. TRAFFIC CONTROL AND MAINTENANCE OF ACCESS

E3.1 The contractor's attention is drawn to clause 3 of CW 1120 regarding his responsibility for notification to utilities and other authorities as well as their responsibility concerning traffic control and maintenance of access.

E.3.1.1 Traffic control shall be done in accordance with the latest version of the City of Winnipeg "Manual of Temporary Traffic Control in Work Areas on City Streets" and the City of Winnipeg Emergency Services shall be notified.

E4. EARTHWORK AND GRADING

E4.1 Description

E.4.1.1 This specification shall revise, amend and supplement CW 3170.

E4.2 Construction Methods

E.4.2.1 Common excavation volume shall include topsoil excavation in volume.

E.4.2.2 All excess excavated material shall be disposed of by contractor off site.

E.4.2.3 The Contractor shall be responsible for maintaining site and right-of-way drainage. Precipitation during the construction period may require the utilization of the newly constructed or graded channels.

E.4.2.4 Should such an event occur the Contractor shall be prepared to undertake any necessary temporary work to accommodate the runoff flows through the work Site.

E.4.2.5 Prior to completion of the Contract, any temporary work constructed to control the runoff shall be removed. Any damages to the newly constructed works due to runoff shall be repaired and the area left in a condition acceptable to the Contract Administrator. All such temporary works and repairs shall be included in the price for Common Excavation.

E.4.2.6 If the Contractor wishes to dispose of excavated material at the Brady Road Landfill then standard tipping fee shall be waived.

E4.3 Measurements and Payments

E.4.3.1 Excavation

(a) Common Excavation will be measured on a volume basis and paid for at the Contract Unit Price for "Common Excavation". The volume to be paid for shall be the total number of cubic meters that are excavated in accordance with this Specification acceptable to the Contract Administrator, as computed from measurements made by the Contract Administrator. No payments will be made for material removed outside of the limits of the excavation

(b) The excavation of the Howe Drainage Channel shall include all open channel construction and excavation for Corrugated Steel Pipe but will not include excavation required in the installation of the C76 Concrete Class II Pipe. Excavation of the C76 Concrete Class II Pipe will be included in the price for the installation of the pipe.

E5. LAWN SEEDING

E5.1 Seeding for areas within the construction area on 1636 McCreary Road and 1652 McCreary Road seeding shall be done in accordance with CW3520.

E6. DITCH BOTTOM AND SIDE SLOPE SEEDING

E6.1 Description

E.6.1.1 General

- (a) This specification shall amend and supplement CW 3520 "Seeding" for the channel bottom and side slopes within the construction area excluding work carried out on 1636 McCreary Road and 1652 McCreary Road.

E6.2 Materials

E.6.2.1 General

- (a) Provide the Contract Administrator with Certificates of Analysis and mix compositions for all seed mixes. Including supplier's name and telephone contact information, and percentages of each species and cultivar in the mixes.

E.6.2.2 Seed Mixes

- (a) Ditch bottom and side slope seed mix shall be a mixture of the following species and cultivars:
 - (i) 8% Northern Wheat Grass (*Agropyron dasystachyum*);
 - (ii) 20% Big Bluestem (*Agropyron gerardii*);
 - (iii) 10% Western Wheatgrass (*Agropyron smithii*);
 - (iv) 5% Slender / Awned Wheat Grass (*Agropyron trachycaulum*);
 - (v) 15% Canada Wildrye (*Elymus canadensis*);
 - (vi) 8% Switchgrass (*Panicum virgatum*);
 - (vii) 4% Fowl Blue Grass (*Poa palustris*);
 - (viii) 30% Green Needle Grass (*Stipa viridula*);

E7. NATURAL PRAIRIE SEEDING

E7.1 Description

E.7.1.1 General

- (a) This specification shall amend and supplement CW 3520 "Seeding" for natural prairie areas within the construction area excluding work carried out on 1636 McCreary Road and 1652 McCreary Road.

E7.2 Materials

E.7.2.1 General

- (a) Provide the Contract Administrator with Certificates of Analysis and mix compositions for all seed mixes. Including supplier's name and telephone contact information, and percentages of each species and cultivar in the mixes.

E.7.2.2 Seed Mixes

- (a) Natural prairie seed mix shall be a mixture of the following species and cultivars:
 - (i) 10% Western Wheat Grass (*Agropyron smithii*);
 - (ii) 10% Slender / Awned Wheat Grass (*Agropyron trachycaulum*);
 - (iii) 5% Slough Grass (*Beckmannia syzigachne*);
 - (iv) 20% Narrow Leaved Reed Grass (*Calamagrostis stricta*);
 - (v) 5% Bebb's Sedge (*Carex bebbii*);

- (vi) 5% Broom Sedge (*Carex stricta*);
- (vii) 10% Canada Wildrye (*Elymus canadensis*);
- (viii) 10% Fowl Bluegrass (*Poa palustis*);
- (ix) 25% Whitetop (*Scolochloa festucacea*);

E8. INSTALLATION OF NEW CULVERTS

E8.1 Description

- E.8.1.1 This specification shall revise, amend and supplement CW 3610.
- E.8.1.2 "Installation Under Existing Roadways" in E.8.2.1 shall apply to new culverts installed under McConnell Road and Loudoun Road.
- E.8.1.3 "Installation of New Culvert Crossings" in E.8.2.2 shall apply to all culverts not covered under E.8.1.2.

E8.2 Construction Methods

E.8.2.1 Installation Under Existing Roadways

- (a) Culverts shall be installed in accordance with CW 3610 using Class B bedding.
- (b) Culverts shall be backfilled in accordance with CW2030 to the requirements of Class 2 backfill.
- (c) Roadway surfaces shall be restored to the requirements of CW3150 to a minimum thickness of 150 mm, or the existing granular material layer thickness, whichever is greater.
- (d) Granular material shall match existing type.

E.8.2.2 Installation of New Culvert Crossings

- (a) Culverts shall be installed in accordance with CW 3610 using Class B bedding.
- (b) Culverts shall then be backfilled in accordance with CW2030 to the requirements of Class 2 backfill.
- (c) The crossing should have a crushed limestone base and sub-base to the dimensions shown on the drawings.

E8.3 Measurements and Payment

- E.8.3.1 Installation of new culverts shall be measured on a linear measure basis. The length to be paid for shall be the total number of meters for each size of culvert installed, including all bedding, back fill and surface restoration, measured horizontally at grade above the centerline of the pipe culvert, as computed by measurements made by the Contract Administrator and paid for at the Contract Unit Price for "Installation Supply and Install Corrugated Steel Pipe "CSP"".
- E.8.3.2 Excavation for installation of corrugated steel pipe shall be included in the cost for "Common Excavation".

E9. REMOVAL AND DISPOSAL OF EXISTING CULVERTS

E9.1 Construction Methods

- E.9.1.1 Where shown on the Drawings, the Contractor shall remove existing culverts, and dispose of said culverts off-site at a legal disposal site approved by the Contract Administrator.

E.9.1.2 The excavation from the culvert removal shall then be backfilled in accordance with CW2030 to the requirements of Class 2 backfill. Roadway surfaces shall be restored to the requirements of CW3150 to a minimum thickness of 150 mm, or the existing granular material layer thickness, whichever is greater.

E9.2 Measurement and Payment

E.9.2.1 Removal and disposal of existing culverts shall be measure on a linear measure basis. The length to be paid for shall be the total number of meters for each size of culvert disposed of, including all excavation, back fill and surface restoration, measured horizontally at grade above the centerline of the pipe culvert, as computed by measurements made by the Contract Administrator and paid for at the Contract Unit Price for "Removal and Disposal of Existing Culverts".

E10. INSTALLATION OF C76 CONCRETE CLASS II PIPE

E10.1 General

E.10.1.1 This specification shall revise, amend and supplement CW2130

E10.2 Construction Method

E.10.2.1 Any cuts made in McCreary Road shall be restored using comparable methods and materials, in accordance with CW3150, to conditions equal to preconstruction.

E11. PRECAST CONCRETE FLARED END SECTIONS

E11.1 General

E.11.1.1 This specification shall cover the installation of the precast concrete flared end sections

E11.2 Construction Methods

E.11.2.1 Install Precast Concrete Flared End Sections at the locations and sizes as shown on construction drawings in accordance with manufactures recommended installation instructions.

E11.3 Measurement and Payment

E.11.3.1 Precast Concrete Flared End Sections will be measured on a unit basis and paid for at the Contract Unit Price for "Precast Concrete Flared End Section". The number to be paid for will be the total number of units for each size installed in accordance with this specification, accepted and measured by the Contract Administrator.

E12. END SECTION INLET GRATE

E12.1 Description

E.12.1.1 This Specification shall cover the supply, fabrication, and placement of the End Section Inlet Grates,

E.12.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, material, equipment, tools, supplies and all things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E.12.1.3 The inclined end section inlet grates are to have bars at a maximum of 140mm clear spacing in accordance with the City of Winnipeg's Culvert and Drainage Inlet/Outlet Safety Guidelines.

E12.2 Materials

E.12.2.1 General

- (a) The Contractor shall be responsible for the supply, safe storage, and handling of all materials set forth in this Specification.

E.12.2.2 Handling and Storage of Materials

- (a) All materials shall be handled in a careful and workmanship like manner, to the satisfaction of the Contract Administrator.

E.12.2.3 Steel Sections and Plates

- (a) All steel section and plates shall be fabricated from new material conforming to CSA G40.21-M92, Grade 300 W.

E.12.2.4 Galvanizing

- (a) Galvanizing shall be hot-dipped, conforming to CSA specification G164-M92. All components shall be galvanized after fabrication.

E.12.2.5 Fasteners, Fitting and Accessories

- (a) All anchor bolts, fasteners, fittings, and other accessories shall be Type 316 stainless steel and of ample section to safely withstand the forces created by operation of the equipment. Quantity and size of the fasteners shall be as recommended by the manufacturer of as shown on the Drawings.

E.12.2.6 Tamperproof Bolts

- (a) All removable appurtenances shall be fastened in place using tamperproof bolts. Tamperproof bolts shall be approved by the Contract Administrator, and shall be made of Type 316 stainless steel. Supply four (4) matching keys for the tamperproof bolts,

E12.3 Construction

- E.12.3.1 The grates shall be constructed in accordance with the City of Winnipeg's Culvert and Drainage Inlet/Outlet Safety Guidelines.

E12.4 Shop Drawings

- E.12.4.1 The contractor shall submit shop drawings for all fabrications for the Contract Administrator's approval prior to the commencement of Work as specified in CW 1110.

E12.5 Quality Control

- E.12.5.1 All Workmanship and materials furnished and supplied under this Specification are subject to the close and systematic inspection and testing by the Contract Administrator, including all operations from selection and production of materials through to final acceptance of the specified Work. The contractor shall be wholly responsible for the control of all operations incidental thereto previously given. The Contract Administrator reserves the right to reject any materials or Works which are not in accordance with the requirements of this Specification.

E12.6 Measurement and Payment

- E.12.6.1 The supply, manufacture, and installation of the end section of inlet grates will be measured on a unit basis and paid for at the Contract Unit Price for "End Section Inlet Grate". The number to be paid for will be the total number of units for each size installed in accordance with this specification, accepted and measured by the Contract Administrator.

E13. SILT FENCING

E13.1 Description

E.13.1.1 The work performed under this specification shall include:

- (a) Supply and install temporary silt fencing in location(s) shown on drawings to minimize the silt loading into the existing drain and retention basin.
- (b) Maintenance of the Silt fencing in serviceable condition.
- (c) Removal of sediment trapped by the silt fencing.
- (d) Removal of the silt fencing and restoration of the area where the fencing was installed without further disturbance to the area and without releasing the sediment to the drain.

E13.2 Materials

E.13.2.1 Fence Posts

- (a) Posts shall be constructed of steel or wood having a minimum length of 1.2m.

E.13.2.2 Filter Fabric

- (a) Shall be a woven geotextile material specifically designed for silt fencing.

E13.3 Construction Methods

E.13.3.1 Installation

- (a) Excavate a 1.50 x 150 mm anchor trench along the alignment of the silt fence and located on the drawings.
- (b) Install the fence post ensuring they are driven into undisturbed soil, or a completely and firmly backfilled if installed using auguring methods at a maximum spacing of 2.5m.
- (c) Attach the filter fabric, overlapping joints by 450 mm on the upstream side of the fence posts. Nails shall be used to anchor to wood posts (200 mm spacing) and tie wire or locking fasteners for steel posts (200 mm spacing) in accordance with the manufacturer's recommendations.
- (d) Install compacted excavated material in to the anchor trench.
- (e) Leave fencing in place until such time as the vegetation described in E5 has been established to the satisfaction of the Contract Administrator.

E13.4 Measurement and Payment

E.13.4.1 Measurement and payment will be based on a length basis and paid for at the Contract Unit Price for "Silt Fencing". The amount to be paid for shall be the total number of lineal meters of silt fencing installed and removed in accordance with the specification, accepted and measured by the Contract Administrator. No measurement or payment shall be made for sediment removal or silt fence maintenance during or after construction.