



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 311-2010

**EXCAVATION AND HAULING OF CLAY MATERIAL FROM THE FLOODWAY TO
BRADY ROAD LANDFILL**

TABLE OF CONTENTS

PART A - BID SUBMISSION

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

PART B - BIDDING PROCEDURES

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

PART C - GENERAL CONDITIONS

C0. General Conditions	1
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PART D - SUPPLEMENTAL CONDITIONS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Contract Administrator	1
D4. Contractor's Supervisor	1
D5. Notices	1
D6. Furnishing of Documents	2

Submissions

D7. Authority to Carry on Business	2
D8. Safe Work Plan	2
D9. Insurance	2
D10. Performance Security	3
D11. Subcontractor List	3

Schedule of Work

D12. Commencement	3
D13. Substantial Performance	4
D14. Total Performance	4
D15. Liquidated Damages	4
D16. Scheduled Maintenance	4

Control of Work

D17. Job Meetings	5
D18. Prime Contractor – The Workplace Safety and Health Act (Manitoba)	5

Measurement and Payment

D19. Payment	5
--------------	---

Warranty	
D20. Warranty	5
Form H1: Performance Bond	6
Form H2: Irrevocable Standby Letter of Credit	8
Form J: Subcontractor List	10

PART E - SPECIFICATIONS

General	
E1. Applicable Specifications and Drawings	1
E2. Excavation	1
E3. Surfacewater and Groundwater	3
E4. Construction Safety In And Around Landfills	3
E5. Truck Weight Limits	4
E6. Installation of Silt Fence	4
E7. Surface Restoration	7
E8. Straw mulch	8

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 EXCAVATION AND HAULING OF CLAY MATERIAL FROM THE FLOODWAY TO BRADY ROAD LANDFILL

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, May 11, 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 Contract Administrator or an authorized representative will be available at the Brady Road Landfill from 10:00am to 1:00pm on Wednesday May 5, 2010 to provide Bidders access to the Site.

B3.2 Attendance is recommended and attendees are to confirm attendance with the Contract Administrator or an authorized representative.

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

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in 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:
- (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.
- 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 B15.1(a).

B7. BID COMPONENTS

- B7.1 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;
- 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 B15.1(a).
- 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:
- (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.

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:

- (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.

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:

- (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.

B10.2 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>

- B10.3 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);
- B10.4 Further to B10.3(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>)
- 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:
- (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.
- 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 B11.1(c), 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:
- (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 B10 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B15.2 Further to B15.1(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.
- B15.3 Further to B15.1(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.
- B15.4 Further to B15.1(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.
- 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 B15.1(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.

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 the excavation, hauling and restoration of clay materials from the Floodway to Brady Road Landfill.

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

- (a) Excavation and hauling of approximately 230,000 cubic metres of clay.
- (b) Restoration of approximately 10 Hectares.

D3. CONTRACT ADMINISTRATOR

D3.1 The Contract Administrator is:

Mr. Darcy Strandberg, C.E.T.
Solid Waste Process Coordinator
109-1199 Pacific Avenue
Telephone No. (204) 986-5108

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:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability, broad form property damage cover and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
 - (b) 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;
 - (c) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.

- 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:
- (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.
- 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 B11.1(c), the Contractor shall provide the City Solicitor with the required performance security within seven (7) Calendar Days of notification of the award of the Contract by way of letter of intent and prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract.

D11. SUBCONTRACTOR LIST

- D11.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract.

SCHEDULE OF WORK

D12. COMMENCEMENT

- D12.1 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.
- D12.2 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 D7;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the Safe Work Plan specified in D8;
 - (iv) evidence of the insurance specified in D9;
 - (v) the performance security specified in D10;

- (vi) the Subcontractor list specified in D11; and
- (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.

D12.3 The Contractor shall not commence the Work on the Site before May 1, 2010.

D13. SUBSTANTIAL PERFORMANCE

D13.1 The Contractor shall achieve Substantial Performance by August 15, 2010.

D13.2 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.

D13.3 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.

D14. TOTAL PERFORMANCE

D14.1 The Contractor shall achieve Total Performance by August 27, 2010.

D14.2 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.

D14.3 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.

D15. LIQUIDATED DAMAGES

D15.1 If the Contractor fails to achieve Substantial Performance in accordance with the Contract by the day fixed herein for Substantial Performance, the Contractor shall pay the City Fifteen Hundred dollars (\$1,500.00) per Working Day for each and every Working Day following the day fixed herein for Substantial Performance during which such failure continues.

D15.2 The amount specified for liquidated damages in D15.1 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.

D15.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D16. SCHEDULED MAINTENANCE

D16.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:

- (a) ^seeding and fertilizing as specified in E7;

D16.2 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

D17. JOB MEETINGS

D17.1 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.

D17.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he deems it necessary.

D18. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D18.1 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

D19. PAYMENT

D19.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

WARRANTY

D20. WARRANTY

D20.1 Warranty is as stated in C13.

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. 311-2010311-2010

EXCAVATION AND HAULING OF CLAY MATERIAL FROM THE FLOODWAY TO BRADY ROAD
LANDFILL

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. 311-2010311-2010

EXCAVATION AND HAULING OF CLAY MATERIAL FROM THE FLOODWAY TO BRADY ROAD
LANDFILL

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
SWD-D-393	TOPOGRAPHIC MAP
SWD-D-394	SITE PLAN OF EXCAVATION
SWD-D-395	LOCATION PLAN
SWD-D-396	TYPICAL CROSS-SECTIONS

E2. EXCAVATION

- E2.1 Description
- E2.1.1 This specification shall amend and supplement Standard Specification CW 3170-R3.
- E2.1.2 This specification shall cover all aspects of excavation, hauling, stockpiling of excavated materials necessary for the clay cover at Brady Road Landfill.
- E2.1.3 The work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials and all things necessary for and incidental to the satisfactory performance and completion of all work as hereinafter specified.
- E2.2 Construction Methods
- E2.2.1 The Contractor shall excavate to the dimensions and elevations shown on drawing SWD-D-390.
- E2.2.2 Clearing and grubbing shall be incidental and included in the cost of excavation. Clearing of vegetation will precede excavation, and all organic mater will be stored on site to be used in restoration.
- E2.2.3 Storm water shall be managed to prevent a hazard to workers, manage nuisance mosquitoes and preserve the quality of the work.

- E2.2.4 The excavated material shall be hauled to stockpile locations as directed by the contract administrator, for use as final cover in the area marked Phase 1 on drawing SWD-D-389. All grading of stockpiled materials will be completed by others. Contract Administrator shall direct the contractor when to divert excavated material to the Surplus Stockpile area shown on drawing SWD-D-389.
- E2.2.5 The maximum side slope for the stockpiled material shall be 4:1.
- E2.2.6 The contractor shall be responsible for the access approach and driving trail to maintain, secure, and restore to original condition or better when the material removal is completed.
- E2.2.7 Contractor shall be responsible to install and maintain traffic control signing in accordance with C.O.W. temporary traffic control manual and debris removal on the adjacent roadways related to vehicles entering and leaving the site throughout the duration of the operation.
- E2.2.8 The loading will be from one area and will run east from the start point along the outside of the floodway dyke where recently excavated material has been placed, until the required quantity has been achieved.
- E2.2.9 The excavation area slope can be left at 3:1 in the working area overnight to address safety requirements. The material would be taken moving east along the embankment from the entry point, removing 1/3 to 1/2 the width of the embankment leaving a 6:1 final embankment slope when finished to reflect the original condition and meet safety requirements.
- E2.2.10 The contractor shall be responsible for final restoration consisting of final grading, reseeding and fertilization of the approximate 10 hectares of the estimated removal area. The Manitoba Floodway Authority shall provide the seed and fertilizer application and specification details).
- E2.2.11 The Contractor shall submit the attached safety plan as supplied by the Manitoba Floodway Authority.
- E2.2.12 The City shall provide initial and final survey layout at the location for volume basis, while the contractor shall be responsible for daily survey until final elevations and grades are attained during the contract duration.
- E2.2.13 Due to planned construction works on and around the inlet structure the transportation route for trucks involved in this operation should not include the use of Courchaine Road, but be limited to St. Mary's Road throughout the duration of the work.
- E2.2.14 The contractor shall be responsible to install a silt fence as shown on the drawing SWD-394.
- E2.3 Method of Measurement
- E2.3.1 Excavation shall be measured on a volume basis. The volume to be paid for shall be the total number of cubic metres (m³) excavated as measured by the Contract Administrator.
- E2.3.2 Volumes to be paid for in this specification will be determined by comparing two surveys by the Contract administrator. The first survey will be done prior to any construction activity in the project area. The second survey will be performed after all excavation and embankment construction has been completed.
- E2.3.3 The two surveys will be performed by The City of Winnipeg Water and Waste Department, Survey Services. The surveys will be performed on a grid and at any obvious change in grade such as top and bottom of slopes.
- E2.3.4 Volumes will be determined from the surveys using "Land Development Desktop" Software by The City of Winnipeg Water and Waste Department, Drafting and Graphics Services.
- E2.3.5 No measurement for additional payment due to rebound, swelling, etc. will be done.
- E2.4 Basis of Payment

- E2.4.1 Excavation shall be paid for at the contract unit price per cubic metre for "Excavation" measured as specified herein, which price will be payment in full for performing all operations and supplying all materials described in this specification and all other items incidental to the work.

E3. SURFACEWATER AND GROUNDWATER

- E3.1 The Contractor is to note that there may be existing surface water located within the excavation area. The Contractor shall be responsible for dealing with all existing surface water and any rainwater or groundwater infiltrating the site. The cost of any temporary pumping or drainage ditching shall be at the Contractor's expense.
- E3.2 The Contractor is to get approval from the Contract Administrator before directing water to any existing watercourse within the Floodway.

E4. CONSTRUCTION SAFETY IN AND AROUND LANDFILLS

- E4.1 The accuracy of this information or its completeness is not warranted by the City and must be verified in each particular by the Contractor.
- E4.2 Further to Manitoba Regulation 204/77, "W210 The Workplace Safety and Health Act", this provision shall cover safety requirements and procedures for construction on and around landfills, dumps and disposal areas. The Contractor shall acquaint himself with all landfills, dumps and disposal areas within and/or adjacent to his construction site. (The Contractor may refer to the Water and Waste Department, Solid Waste Division, for information on Site locations).
- E4.3 The Contractor is advised that landfill gas (methane and other gases) can emanate from the natural decomposition of refuse or other highly organic material and that such gases may migrate through soils a distance of approximately 90 m. The migration distance may be greater through underground conduits or where surface conditions interfere with normal venting.
- E4.4 Accordingly, the Contractor is advised of the existence of or the potential for the development of hazardous conditions where construction or maintenance activities are undertaken on or within 90 metres of a landfill, dump or disposal area.
- E4.5 The hazard may be one or more of the following:
- (a) Fire may start spontaneously from exposed and/or decomposing refuse or other highly organic material.
 - (b) Fires and explosions may occur from the presence of methane gas.
 - (c) Landfill gases may cause an oxygen deficiency in underground trenches, vaults, conduits and structures.
 - (d) Hydrogen sulphide, a highly toxic and flammable gas, may be present.
 - (e) Possible caving of trenches and excavations when working over or in refuse or highly organic fills.
 - (f) Pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted or endangered by the performance or existence of the Work or Plant
- E4.6 Specific site conditions may also determine other measures to be taken to protect the health and safety of the workers and the public.
- E4.7 The Contractor shall be aware that the landfill may contain hazardous materials such as asbestos, SMR, Leachate and sewage sludge and must take precautions to protect all persons employed on the Work at all times during the performance of the Work.
- E4.8 The Contract Administrator will have the right to suspend the Contractor's activities if the above guidelines are not being followed. The Contractor shall not resume his activities until the

guidelines are being followed. The Contractor shall have no claim for extra time or expenses due to being suspended for not following these safety guidelines.

E5. TRUCK WEIGHT LIMITS

E5.1 The owner shall not pay for any portion of Material which results in the vehicle exceeding the maximum gross vehicle weight allowed under *The City of Winnipeg Traffic By-Law*, unless such vehicle is operating under special permit.

E6. INSTALLATION OF SILT FENCE

E6.1 Description

E6.1.1 This Specification shall cover the supply, installation, maintenance, and removal of the temporary silt fence to be installed as shown on the Drawings, or as directed by the Contract Administrator.

E6.2 Materials

E6.2.1 Silt fence shall be installed by machine slicing methods and constructed with silt fence fabric, posts and fasteners. The silt fence fabric shall be manufactured from a woven polypropylene material and shall conform to the following requirements below. The colour of the silt fence fabric shall be high visibility green, orange or other high visibility colour acceptable to the Contract Administrator.

Specification	Requirements
Grab tensile strength (25-mm grip), kN, min. in each direction ASTM Designation: D 4632	0.550
Elongation, percent minimum in each direction ASTM Designation: D 4632	15/20
Permittivity, 1/sec., min. ASTM Designation: D 4491	.20
Flow rate, liters per minute per square meter, min. ASTM Designation: D 4491	400
Ultraviolet stability, percent tensile strength retained after 500 hours, min. ASTM Designation: D 4355 (xenon-arc lamp and water spray weathering method)	70

Suitable products shall be AGES Premium Silt Fence, Cascade Premium 550/450 Orange, or approved equivalent.

E6.2.2 Posts for the temporary silt fence shall be constructed of steel or wood. Posts having a "U", "T", "L" or other cross sectional shape that can resist failure by lateral loads will be accepted. Posts shall have a minimum mass per length of 1.1 kg/m and a minimum length of 1.5 m. One end of the steel or wood posts shall be pointed and the other end shall be visibly marked (e.g. orange or red safety cap, painting) subject to acceptance by the Contract Administrator. The maximum spacing between the posts shall be 1.8 m.

E6.2.3 Wooden survey lath used for securing the silt fence to the steel posts shall be 38 mm long x 8 mm thick x 600 mm (minimum).

E6.2.4 Tie wire shall be used to fasten the wooden survey lath and the silt fence fabric to the posts. Maximum spacing of fasteners shall be 200 mm along the length of the post. The tie wire shall be 16 Gauge black annealed wire with a minimum tensile strength of 55,000 psi (CSA G30.3-M1983 (R1998) or approval equivalent).

E6.3 Submittals

- E6.3.1 The Contractor shall submit all manufacturers' product specifications and recommended installation methods for the proposed silt fence and associated materials in accordance with the GR100.1.5 Submittals.
- E6.4 Construction Methods
- E6.4.1 General
- (a) The Contractor shall supply, install, and maintain all silt fence as shown on the Drawings
 - (b) Actual alignment and location of the silt fence may be adjusted in the field by the Contract Administrator compared with the alignment and locations shown on the Drawings.
 - (c) The silt fence shall be installed in a "smile" configuration along contours accepted by the Contract Administrator.
- E6.4.2 Machine Slicing Method
- (a) Silt fence shall be installed prior to initiation of the Earthworks and Grading works within the affected area.
 - (b) The mechanical installation machine shall be used to embed the fabric into the ground to the minimum depth and at the specified location as shown on the Drawings. The height of the silt fence above ground is shown on the Drawings.
 - (c) The slit shall be created such that the horizontal chisel point at the base of a soil slicing blade slightly disrupts the soil upward as the blade slices through the soil.
 - (d) The geotextile shall be mechanically inserted into the slit directly behind the soil slicing blade in a simultaneous operation, achieving consistent placement and depth. No overturning (plowing) of soil will be allowed. The soil immediately adjacent to the silt fence fabric shall be compacted by operating the wheel of a tractor or skid steer on each side of the silt fence a minimum of two passes.
- E6.5 Maintenance
- E6.5.1 The Contractor shall maintain the silt fences until they are no longer necessary and are removed. Maintenance shall consist of all work necessary to keep the devices functioning effectively. The Contractor shall repair or correct plugged, torn, displaced, damaged, or non-functioning devices to the satisfaction of the Contract Administrator.
- E6.5.2 The Contractor shall note that portions of the Silt Fence along the base of the Floodway Channel will be inundated during Floodway Operation. Any repair work necessary after inundation is considered regular maintenance, and shall be completed by the Contractor in accordance with this Specification.
- E6.5.3 If the Contract Administrator determines that the Contractor has not maintained the silt fences properly or has damaged the devices from construction or sediment removal activities resulting in sediment releases beyond the work area, the Contractor shall retrieve all sediment that has left the construction area, to the fullest extent possible, at his own cost. This shall include but is not limited to the removal of all deltas and sediment deposited in drainage ways and regrade and/or reseed the areas where sediment removal results in exposed soil. The removal and restoration shall take place within 2 working days of discovery unless precluded by legal, regulatory, or physical access restraints. If precluded, removal and restoration must take place within 2 working days of obtaining access. The Contractor is responsible for contacting all local, regional, provincial, and federal authorities before working in surface waters and for obtaining applicable permits. The Contractor's restoration work to restore property outside of the designated work area shall be at his own cost.
- E6.5.4 No re-measurement or payment will be made for those areas damaged and requiring re-installation or replacement of silt fence due to faulty installation of the silt fence or the Contractor's construction or sediment removal activities. No silt fence shall be removed or reinstalled without prior written authorization from the Contract Administrator.

E6.6 Sediment Removal During Construction

- E6.6.1 During construction the Contractor shall remove sediment from the silt fences when the sediment reaches 30 percent of the height, or replace, or supplement the device as directed by the Contract Administrator. Sediment removal shall occur within 24 hours of discovery or as soon as field conditions allow access and no sediment removal shall be performed without authorization from the Contract Administrator.
- E6.6.2 Sediment removal shall consist of supplying all supervision, labour, materials, plant, and equipment necessary for excavating, disposing and other associated operations to remove accumulated sediment and restore the capacity of the silt fence. Sediment shall be removed to the original grade or as necessary to restore the function of the device as determined by the Contract Administrator.
- E6.6.3 If sediment removal is not possible, and replacement of a portion of the silt fence is deemed necessary by the Contract Administrator, replacement of the silt fence will be at the Contract Unit Price. The silt fence to be replaced shall be removed and properly disposed of off-site. No silt fence removal or replacement shall be performed without authorization of the Contract Administrator. There shall be no claim by the Contractor for silt fence removal or reinstallation without prior written authorization from the Contract Administrator.
- E6.6.4 Excavated sediment shall be disposed of within the designated working disposal embankments.

E6.7 Final Removal of Silt Fence

- E6.7.1 When 50% of the total area covered by new seeding adjacent to the silt fence has established growth to a height of 50 mm, as determined by the Contract Administrator, the Contractor shall perform final removal of all silt fence adjacent to the area. All removed materials become the property of the Contractor and shall be removed and properly disposed of off site.
- E6.7.2 As part of the final removal of the silt fence the Contractor shall spread any accumulated sediment to form a suitable surface for seeding or dispose of the sediment at a working disposal area acceptable to the Contract Administrator.
- E6.7.3 Notwithstanding clause E6.6 there shall be no measurement or payment for sediment removal and disposal performed as part the final removal of the silt fence.
- E6.7.4 All areas below and adjacent to the silt fence and any existing grassed areas disturbed by the Contractor during final removal of the silt fence shall be seeded by the Contractor, at his own cost, and no separate measurement or payment will be made for this work. The seeding mix and construction methods shall be in accordance with E7.

E6.8 Measurement and Payment

E6.8.1 Silt Fence

- (a) Silt fence will be measured on a length basis and paid for at the Contract Unit Price for "Silt Fence". The amount to be paid for shall be the total number of lineal metres of silt fence installed, maintained, and removed in accordance with this Specification, accepted and measured by the Contract Administrator. There will be no payment for increased silt fence length due to installation of "smile" depths. Payment for silt fence shall be in accordance with the following payment schedule:
- (i) Seventy-five percent (75%) of the Contract Unit Price per lineal metre for "Silt Fence" shall be paid following supply and installation to the satisfaction of the Contract Administrator.
 - (ii) Twenty-five percent (25%) of the Contract Unit Price per lineal metre for "Silt Fence" shall be paid for silt fence maintenance and removal upon completion.
- (b) Seeding of all areas below and adjacent to the silt fence or seeding of any other existing grassed areas disturbed by the Contractor from sediment removal during

construction or from final removal of the silt fence is considered incidental to the Work and no separate measurement or payment will be made.

E6.8.2 Sediment Removal During Construction

E6.8.3 Sediment removal during construction is considered incidental to the Work and no separate measurement or payment will be made.

E7. SURFACE RESTORATION

E7.1 Restoration of all existing surface areas disturbed by construction activities including but not limited to areas disturbed by; construction equipment, placement of field office or equipment trailer, and where construction materials were stockpiled, shall be restored as follows.

- (a) Gravel surfaces: in accordance with CW 3150.
- (b) Asphalt surfaces: match existing base course and asphalt thickness or a minimum of 150 millimetres of base course and 75 millimetres of Type 1A Asphaltic concrete whichever is greater, in accordance with CW 3410.
- (c) Pavement slabs (including private approaches): in accordance with CW 3230.

E7.2 Seeding

E7.3 Description

E7.3.1 This Specification covers the placement of grass seed within the limits of the work. Areas to be seeded include but are not limited to the gap excavation area, disposal embankments, site work roads, and perimeter ditch side slopes. The Work includes, but is not limited to preparation of the seed bed, destruction of weed growth prior to seeding, supply and application of cover crop seed, the supply and application of fertilizer, sowing of seed, and harrowing after seeding.

E7.4 Materials

E7.4.1 Grass Seed/Cover Crop shall be supplied and certified by the contractor and will consist of mixes specifically designed for application within the Contract Limits, described as follows:

- (a) **Forage Mix** – This mixture will generally consist of the following species and approximate proportions:
 - (i) Smooth Brome – 20%
 - (ii) Meadow Brome – 10%
 - (iii) Timothy – 10%
 - (iv) Orchard Grass – 10%
 - (v) Alfalfa (tap root variety) – 30%
 - (vi) Alfalfa (creeping variety) – 20%
- (b) Oats (Certified Seed Variety) shall be utilized as a Nurse or Cover Crop for the period between May 1 and July 31 of any year. Winter wheat (Certified Seed Variety) shall be used between August 1 and September 30 of any year. The Contractor shall supply the seed, deliver to the site, and apply in accordance with this Specification. The Contractor shall supply delivery tickets certifying the type and quantity of seed on a weekly basis, or as specified by the Contract Administrator.
- (c) Fertilizer consisting of a 25-40-0 formulation is to be supplied, delivered to site, and applied by the Contractor. The Contractor shall provide fertilizer delivery tickets certifying the quantity and type of fertilizer delivered to site on a weekly basis or as specified by the Contract Administrator.

E7.5 Construction Methods

E7.5.1 Seeding shall commence immediately upon completion of excavation and trimming operations, as possible. The seeding operation shall consist of seedbed preparation

(shallow discing and initial harrowing), application of the seed and fertilizer, and a second harrowing. Straw mulch application and crimping shall follow the second harrowing.

- E7.5.2 No seeding shall be completed if the work area cannot be covered with straw mulch.
- E7.5.3 All weed growth in areas to be seeded shall be destroyed as required so that proper seeding can be done. If herbicide applications are used to destroy weed growth then all work and materials shall be in accordance with GR130 Environmental Protection Specifications.
- E7.5.4 The seed bed shall be prepared by shallow discing (minimum 50 mm depth) and initial harrowing of the finished grade prior to seed application, as required and accepted by the Contract Administrator. This shallow discing for final seedbed preparation shall be additional to the deeper discing.
- E7.5.5 The forage seed and cover crop seed shall be sown separately utilizing conventional seed drill equipment capable of uniformly applying all species contained within the specified mixtures. Only if the equipment is capable of sufficient adjustment as to ensure uniform application will the Cover Crop seed and the Forage seed be permitted to be mixed and sown together, as accepted by the Contract Administrator. The drill shall accurately and uniformly place the seed (both forage and cover crop) to a depth of 10 to 20 mm. The seed drill shall be fitted with on-row packers, in order to achieve adequate seed to soil contact. Seed shall not be applied by broadcasting methods unless directed by the Contract Administrator.
- E7.5.6 Forage seed and Cover Crop seed shall be sown at the following rates:
- | | |
|---------------------|-------------------|
| (a) Forage Seed | 32 kg per hectare |
| (b) Cover Crop seed | 38 kg per hectare |
- E7.5.7 New seeding shall blend applications 300 mm into adjacent grassed areas and previous applications to form uniformly covered surfaces.
- E7.5.8 Harrowing after the seeding operation shall be undertaken, either as a separate operation or in conjunction with the seeding operation.
- E7.5.9 In order to discourage down slope erosion, on all sloped areas, the direction of equipment travel for seeding and final harrowing operations shall be perpendicular to the slope.
- E7.5.10 No supplementary packing or rolling shall be done after seeding operations unless the Contractor is directed by the Contract Administrator to use broadcast seeding methods. Any areas seeded by broadcast seeding methods shall be considered extra work and will be addressed in accordance with GC7.00 Change in Work.
- E7.5.11 No seeding shall be done on frozen soils, or when any other conditions unfavourable to the successful planting of seed exist, as determined by the Contract Administrator.
- E7.5.12 Fertilizer shall not be mixed with seed but applied as a separate broadcast operation or by a fertilizer attachment on the seed drill.
- E7.5.13 The fertilizer application shall achieve a rate of 225 kg/ha (200 lbs/acre).
- E7.5.14 Rutting or damage caused during seeding and fertilizing operations shall be repaired to the satisfaction of the Contract Administrator.
- E7.5.15 The Contract Administrator will provide Final Acceptance of the seeded areas when:
- Verification has been made that the seed has been properly applied as per the above Specifications.
 - Areas have been fertilized.

E8. STRAW MULCH

- E8.1 Description

E8.1.1 This Specification shall cover the supply and placement of straw mulch on top of new seeding. Straw mulch shall be placed by power mulching and anchored (crimped) into the soil to minimize erosion and promote vegetation growth.

E8.2 Materials

E8.2.1 The material shall consist of wheat or barley straw, or other plants accepted by the Contract Administrator. The straw mulch shall be air dried, reasonably light in colour, and shall not be musty, mouldy, caked or otherwise of low quality. The mulch shall be free of coarse (chaff) material and free of noxious weeds and/or seeds to prevent the introduction of weeds into previously seeded and planted areas. Dry mulching material that breaks down and does not bend will not be acceptable. The power mulching process shall produce a minimum of 75% of the straw being between 150 mm and 200 mm in length.

E8.3 Construction Methods

E8.3.1 General

- (a) The Contractor shall supply and place straw mulch material immediately after seeding and fertilizer application.
- (b) Straw mulch shall be placed ensuring that there is a minimum of 90% ground coverage by area, as measured and accepted by the Contract Administrator.
- (c) Mulched areas shall be inspected periodically and after runoff producing storm events. Damaged areas shall be repaired immediately as determined by the Contract Administrator. Areas requiring reseeded and/or remulching as directed by the Contract Administrator will be re-measured and paid for additionally at the Contract Unit Price for the work item(s).
- (d) Any areas requiring reapplication of the straw mulch due to faulty installation or from the Contractor's activities shall be remulched and crimped in accordance with this Specification at no cost to MFA.

E8.3.2 Spreading of Straw Mulch Material

- (a) The straw mulch material shall be spread with power mulching equipment at a rate of 2250 kg/ha, to a maximum layer thickness of 25 mm. The Contractor shall apply the straw in a manner to ensure uniform cover. Mulch that remains clumped or bunched after application shall be separated and respread.

E8.3.3 Crimping or Anchoring of Straw Material

- (a) All straw mulch shall be crimped into the ground to a nominal depth of 50 mm.
- (b) After spreading of the straw mulch material, the straw mulch shall be crimped or anchored to the ground with a straw crimper (crimp disc). The straw crimper should have a Coulter (serrated) blade spacing between 100 to 200 mm and a blade diameter of ± 50 cm. The blades should be notched and tapered for easy soil penetration. The roller punching method of straw anchoring will not be accepted.
- (c) Crimping shall be completed in two directions perpendicular to each other with the final pass conducted parallel the slope rather than up and down. A minimum of 75% of the straw shall remain visible at ground surface after crimping.
- (d) The Contractor shall complete all work necessary to crimp the straw mulch, which may include but not be limited to discing or water application, as required. If adequate crimping of the straw cannot be achieved using a discer, then alternate methods of crimping (e.g. track packing) shall be reviewed for consideration by the Contract Administrator. Alternatively, spray-on tackifiers may also be used to secure the straw in place, as accepted by the Contract Administrator.
- (e) This method of straw mulch anchoring or crimping shall be used until such a time that the crimping of the straw specified herein is ineffective due to frozen ground conditions. After such time, the straw shall be anchored to the ground.

- (f) Those areas not effectively protected from winter mulch applications after spring run-off shall be remulched and crimped as specified herein. Areas requiring remulching and crimping as directed by the Contract Administrator will be re-measured and paid for additionally at the Contract Unit Price for the work item(s).

E8.4 Costs for permanent surface restoration will be included in restoration.