



THE CITY OF WINNIPEG

BID OPPORTUNITY

BID OPPORTUNITY NO. 606-2020

**PEMBINA HIGHWAY AND BISHOP GRANDIN BOULEVARD INTERCHANGE
SOUTHWEST CORNER SLOPE STABILIZATION**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 PEMBINA HIGHWAY AND BISHOP GRANDIN BOULEVARD INTERCHANGE SOUTHWEST CORNER SLOPE STABILIZATION

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, September 23, 2020.

B2.2 The Contract Administrator or the Manager of Materials may extend the Submission Deadline by issuing an addendum at any time prior to the time and date specified in B2.1.

B3. SITE INVESTIGATION

B3.1 Further to C3.1, the Bidder may view the Site without making an appointment.

B3.2 The Bidder is advised that a site visit prior commencement of the Work may be conducted without the presence of the Contract Administrator. A site visit shall be conducted to identify Site access, confirm the suitability of staging and laydown areas, and any site restrictions.

B4. ENQUIRIES

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

B4.2 If the Bidder finds errors, discrepancies or omissions in the Tender, 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 Tender 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 Tender 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.

B4.6 Any enquiries concerning submitting through MERX should be addressed to:
MERX Customer Support
Phone: 1-800-964-6379
Email: merx@merx.com

B5. CONFIDENTIALITY

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

- (a) was known to the Bidder before receipt hereof; or
- (b) becomes publicly known other than through the Bidder; or
- (c) is disclosed pursuant to the requirements of a governmental authority or judicial order.

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

B6. ADDENDA

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

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

B6.3 Addenda will be available on the MERX website at www.merx.com.

B6.4 The Bidder is responsible for ensuring that he/she has received all addenda and is advised to check the MERX website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.

B6.5 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid/Proposal. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.

B6.6 Notwithstanding B4, enquiries related to an Addendum may be directed to the Contract Administrator indicated in D4.

B7. SUBSTITUTES

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

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

B7.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least four (4) Business Days prior to the Submission Deadline.

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

- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
- (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
- (c) identify any anticipated cost or time savings that may be associated with the substitute;
- (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
- (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.

- B7.5 The Contract Administrator, after assessing the request for approval of a substitute, may in his/her sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B7.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.
- B7.6.1 The Contract Administrator will issue an Addendum, disclosing the approved materials, equipment, methods and products to all potential Bidders. The Bidder requesting and obtaining the approval of a substitute shall be responsible for disseminating information regarding the approval to any person or persons he/she wishes to inform.
- B7.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B7.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base his/her Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B18.
- B7.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B8. BID COMPONENTS

- B8.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;
 - (c) Form G1: Bid Bond and Agreement to Bond.
- B8.2 Further to B8.1, the Bidder should include the written correspondence from the Contract Administrator approving a substitute in accordance with B7.
- B8.3 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely.
- B8.4 The Bid shall be submitted electronically through MERX at www.merx.com.
- B8.4.1 Bids will **only** be accepted electronically through MERX.
- B8.5 Bidders are advised that inclusion of terms and conditions inconsistent with the Tender document, including the General Conditions, will be evaluated in accordance with B18.1(a).

B9. BID

- B9.1 The Bidder shall complete Form A: Bid/Proposal, making all required entries.
- B9.2 Paragraph 2 of Form A: Bid/Proposal shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, his/her name shall be inserted;
 - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
 - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
 - (d) if the Bidder is carrying on business under a name other than his/her own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.

- B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.
- B9.3 In Paragraph 3 of Form A: Bid/Proposal, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B9.4 Paragraph 13 of Form A: Bid/Proposal shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in his/her own name, it shall be signed by the Bidder;
 - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
 - (c) if the Bidder is a corporation, it shall be signed by its duly authorized officer or officers;
 - (d) if the Bidder is carrying on business under a name other than his/her own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.
- B9.4.1 The name and official capacity of all individuals signing Form A: Bid/Proposal should be entered below such signatures.
- B9.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B10. PRICES

- B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B10.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B10.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).
- B10.5 The Bidder shall enter the Total Bid Price from Form B: Prices into the Total Bid Price field in MERX.
- B10.5.1 Bidders are advised that the calculation indicated in B18.4 will prevail over the Total Bid Price entered in MERX.

B11. DISCLOSURE

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

B12. CONFLICT OF INTEREST AND GOOD FAITH

- B12.1 Further to C3.2, Bidders, by responding to this Tender, declare that no Conflict of Interest currently exists, or is reasonably expected to exist in the future.
- B12.2 Conflict of Interest means any situation or circumstance where a Bidder or employee of the Bidder proposed for the Work has:
- (a) other commitments;
 - (b) relationships;
 - (c) financial interests; or
 - (d) involvement in ongoing litigation;
- that could or would be seen to:
- (i) exercise an improper influence over the objective, unbiased and impartial exercise of the independent judgment of the City with respect to the evaluation of Bids or award of the Contract; or
 - (ii) compromise, impair or be incompatible with the effective performance of a Bidder's obligations under the Contract;
- (e) has contractual or other obligations to the City that could or would be seen to have been compromised or impaired as a result of its participation in the Tender process or the Work; or
 - (f) has knowledge of confidential information (other than confidential information disclosed by the City in the normal course of the Tender process) of strategic and/or material relevance to the Tender process or to the Work that is not available to other bidders and that could or would be seen to give that Bidder an unfair competitive advantage.
- B12.3 In connection with its Bid, each entity identified in B12.2 shall:
- (a) avoid any perceived, potential or actual Conflict of Interest in relation to the procurement process and the Work;
 - (b) upon discovering any perceived, potential or actual Conflict of Interest at any time during the Tender process, promptly disclose a detailed description of the Conflict of Interest to the City in a written statement to the Contract Administrator; and
 - (c) provide the City with the proposed means to avoid or mitigate, to the greatest extent practicable, any perceived, potential or actual Conflict of Interest and shall submit any additional information to the City that the City considers necessary to properly assess the perceived, potential or actual Conflict of Interest.
- B12.4 Without limiting B12.3, the City may, in its sole discretion, waive any and all perceived, potential or actual Conflicts of Interest. The City's waiver may be based upon such terms and conditions as the City, in its sole discretion, requires to satisfy itself that the Conflict of Interest has been appropriately avoided or mitigated, including requiring the Bidder to put into place such policies, procedures, measures and other safeguards as may be required by and be acceptable to the City, in its sole discretion, to avoid or mitigate the impact of such Conflict of Interest.
- B12.5 Without limiting B12.3, and in addition to all contractual or other rights or rights at law or in equity or legislation that may be available to the City, the City may, in its sole discretion:
- (a) disqualify a Bidder that fails to disclose a perceived, potential or actual Conflict of Interest of the Bidder or any of its employees proposed for the Work;
 - (b) require the removal or replacement of any employees proposed for the Work that has a perceived, actual or potential Conflict of Interest that the City, in its sole discretion, determines cannot be avoided or mitigated;
 - (c) disqualify a Bidder or employees proposed for the Work that fails to comply with any requirements prescribed by the City pursuant to B12.4 to avoid or mitigate a Conflict of Interest; and

- (d) disqualify a Bidder if the Bidder, or one of its employees proposed for the Work, has a perceived, potential or actual Conflict of Interest that, in the City's sole discretion, cannot be avoided or mitigated, or otherwise resolved.

B12.6 The final determination of whether a perceived, potential or actual Conflict of Interest exists shall be made by the City, in its sole discretion.

B13. QUALIFICATION

B13.1 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.

B13.2 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 <https://www.winnipeg.ca/matmgt/Templates/files/debar.pdf>

B13.3 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
have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba).

B13.4 Further to 0, the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:

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

B13.5 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.

B13.6 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.

B14. BID SECURITY

B14.1 The Bidder shall include in its Bid Submission bid security in the form of a digital 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 Form G1: Bid Bond and Agreement to Bond, available on The City of Winnipeg, Corporate Finance, Materials Management Division website at <https://www.winnipeg.ca/MatMgt/templates/files/eBidsecurity.pdf>.

B14.2 Bid security shall be submitted in a digital format meeting the following criteria:

- (a) The version submitted by the Bidder must have valid digital signatures and seals;
- (b) The version submitted by the Bidder must be verifiable by the City with respect to the totality and wholeness of the bond form, including: the content; all digital signatures and digital seals; with the surety company, or an approved verification service provider of the surety company.
- (c) The version submitted must be viewable, printable and storable in standard electronic file formats compatible with the City, and in a single file. Allowable formats include pdf.
- (d) The verification may be conducted by the City immediately or at any time during the life of the bond and at the discretion of the City with no requirement for passwords or fees.
- (e) The results of the verification must provide a clear, immediate and printable indication of pass or fail regarding B14.2(a).

B14.3 Bonds failing the verification process will not be considered to be valid and the bid shall be determined to be non-responsive in accordance with B18.1(a).

B14.4 Bonds passing the verification process will be treated as original and authentic.

B14.4.1 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.

B14.5 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 formed with the successful Bidder and the contract securities are furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.

B14.6 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 Tender.

B15. OPENING OF BIDS AND RELEASE OF INFORMATION

B15.1 Bids will not be opened publicly.

B15.2 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 MERX website at www.merx.com.

B15.3 After award of Contract, the name(s) of the successful Bidder(s) and their Contract amount(s) will be available on the MERX website at www.merx.com.

B15.4 The Bidder is advised that any information contained in any Bid may be released if required by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).

B15.4.1 To the extent permitted, the City shall treat as confidential information, those aspects of a Bid Submission identified by the Bidder as such in accordance with and by reference to Part 2, Section 17 or Section 18 or Section 26 of The Freedom of Information and Protection of Privacy Act (Manitoba), as amended.

B16. IRREVOCABLE BID

B16.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid/Proposal.

B16.2 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 formed and the contract securities have been 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/Proposal.

B17. WITHDRAWAL OF BIDS

B17.1 A Bidder may withdraw his/her Bid without penalty prior to the Submission Deadline.

B18. EVALUATION OF BIDS

B18.1 Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Tender, or acceptable deviation therefrom (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B13 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B7.

B18.2 Further to B18.1(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.

B18.3 Further to B18.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in his/her Bid or in other information required to be submitted, that he/she is qualified.

B18.4 Further to B18.1(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.

B18.4.1 Further to B18.1(a), in the event that a unit price is not provided on Form B: Prices, the City may determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.

B18.4.2 Bidders are advised that the calculation indicated in B18.4 will prevail over the Total Bid Price entered in MERX.

B19. AWARD OF CONTRACT

B19.1 The City will give notice of the award of the Contract or will give notice that no award will be made.

B19.2 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 qualified, and the Bids are determined to be responsive.

- B19.2.1 Without limiting the generality of B19.2, 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.
- B19.3 Where an award of Contract is made by the City, the award shall be made to the qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B18.
- B19.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of his/her Bid upon written request to the Contract Administrator.

PART C - GENERAL CONDITIONS

C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Construction* (Revision 2020-01-31) 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 Tender 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. FORM OF CONTRACT DOCUMENTS

D2.1 Notwithstanding C4.1(c) and C4.4, the Contract Documents will be provided to the Contractor electronically and there will be no requirement for execution and return to the City by the Contractor. Accordingly, the provisions under C4.4(a) and C4.4(b) are no longer applicable.

D3. SCOPE OF WORK

D3.1 The Work to be done under the Contract shall consist of:

- (a) Rockfill rib construction
- (b) Trench drain construction
- (c) Site restoration

D3.2 The major components of the Work are as follows:

- (a) Rockfill rib construction
 - (i) Excavation
 - (ii) Supply and placement rockfill
 - (iii) Compaction of rockfill
 - (iv) Supply and placement clay
 - (v) Compaction of clay
- (b) Trench drain construction
 - (i) Hydro-Excavation
 - (ii) Excavation and disposal
 - (iii) Supply and placement geotextile fabric
 - (iv) Subdrain system installation
 - (v) Subdrain connection to catch basin
 - (vi) Supply and placement sand backfill
 - (vii) Compaction of sand backfill
 - (viii) Supply and placement clay cap
- (c) Site Restoration
 - (i) Tension crack repair
 - (ii) Grading of work area
 - (iii) Supply and placement topsoil and seed
 - (iv) Restoration of any damage to existing facilities

D4. CONTRACT ADMINISTRATOR

D4.1 The Contract Administrator is TREK Geotechnical Inc., represented by:

Michael Van Helden Ph.D., P.Eng.
Senior Geotechnical Engineer

Telephone No. 204 975 9433

Email Address mvanhelden@trekgeotechnical.ca

D4.2 At the pre-construction meeting, Michael Van Helden Ph.D., P.Eng will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

D5. CONTRACTOR'S SUPERVISOR

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

D5.2 At least two (2) Business Days prior to the commencement of any Work on the site, the Contractor shall provide the Contract Administrator with a phone number where the supervisor identified in D5.1 or an alternate can be contacted twenty-four (24) hours a day to respond to an emergency.

D6. NOTICES

D6.1 Except as provided for in C22.4, 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/Proposal.

D6.2 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications to the City, except as expressly otherwise required in D6.3 or elsewhere in the Contract, shall be sent to the attention of the Contract Administrator identified in D4.

D6.3 All notices, requests, nominations, proposals, consents, approvals, statements, authorizations, documents or other communications required to be submitted or returned to the City Solicitor shall be sent to the following facsimile number:

The City of Winnipeg
Legal Services Department
Attn: Director of Legal Services
Facsimile No.: 204-947-9155

D7. FURNISHING OF DOCUMENTS

D7.1 Upon award of the Contract, the Contractor will be provided with 'issued for construction' Contract Documents electronically, including Drawings in PDF format only.

SUBMISSIONS

D8. AUTHORITY TO CARRY ON BUSINESS

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

D9. SAFE WORK PLAN

- D9.1 The Contractor shall provide the Contract Administrator with a Safe Work Plan at least five (5) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in C4.1 for the return of the executed Contract Documents, if applicable.
- D9.2 The Safe Work Plan shall 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>
- D9.3 Notwithstanding B13.4 at any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require an updated COR Certificate or Annual Letter of good Standing. A Contractor, who fails to provide a satisfactory COR Certificate or Annual Letter of good Standing, will not be permitted to continue to perform any Work.

D10. INSURANCE

- D10.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability, broad form property damage cover and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
 - (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence;
 - (c) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.
- D10.2 Deductibles shall be borne by the Contractor.
- D10.3 The Contractor shall provide the City Solicitor with a certificate(s) of insurance, in a form satisfactory to the City Solicitor, at least two (2) Business Days prior to the commencement of any Work but in no event later than the date specified in the C4.1 for the return of the executed Contract Documents, as applicable.
- D10.4 The Contractor shall not cancel, materially alter, or cause each policy to lapse without providing at least thirty (30) Calendar Days prior written notice to the Contract Administrator.

D11. CONTRACT SECURITY

- D11.1 The Contractor shall provide and maintain the performance bond and the labour and material payment bond 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; and
 - (b) a labour and material payment bond of a company registered to conduct the business of a surety in Manitoba, in the form attached to these Supplemental Conditions (Form H2: Labour and Material Payment Bond), in an amount equal to fifty percent (50%) of the Contract Price.
- D11.1.1 Where the contract security is a performance bond, it may be submitted in hard copy or digital format. If submitted in digital format the contract security must meet the following criteria:

- (a) the version submitted by the Contractor must have valid digital signatures and seals;
- (b) the version submitted by the Contractor must be verifiable by the City with respect to the totality and wholeness of the bond form, including: the content; all digital signatures and digital seals; with the surety company, or an approved verification service provider of the surety company.
- (c) the version submitted must be viewable, printable and storable in standard electronic file formats compatible with the City, and in a single file. Allowable formats include pdf.
- (d) the verification may be conducted by the City immediately or at any time during the life of the bond and at the discretion of the City with no requirement for passwords or fees.
- (e) the results of the verification must provide a clear, immediate and printable indication of pass or fail regarding D11.1(b).

D11.1.2 Digital bonds failing the verification process will not be considered to be valid and may be determined to be an event of default in accordance with C18.1. If a digital bond fails the verification process, the Contractor may provide a replacement bond (in hard copy or digital format) within seven (7) Calendar Days of the City's request or within such greater period of time as the City in its discretion, exercised reasonably, allows.

D11.1.3 Digital bonds passing the verification process will be treated as original and authentic.

D11.2 The Contractor shall provide the City Solicitor with the required performance and labour and material payment bonds within seven (7) Calendar Days of notification of the award of the Contract by way of an award letter 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 Documents, if applicable.

D11.3 The Contractor shall, as soon as practicable after entering into a contract with a Subcontractor:

- (a) give the Subcontractor written notice of the existence of the labour and material payment bond in D11.1(b); and
- (b) post a notice of the bond and/or a copy of that bond in a conspicuous location at the Site of the Work.

D12. SUBCONTRACTOR LIST

D12.1 The Contractor shall provide the Contract Administrator with a complete list of the Subcontractors whom the Contractor proposes to engage (Form J: Subcontractor List) at or prior to a pre-construction meeting, or 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 C4.1 for the return of the executed Contract Documents, if applicable.

D13. EQUIPMENT LIST

D13.1 The Contractor shall provide the Contract Administrator with a complete list of the equipment which the Contractor proposes to utilize (Form K: Equipment List) at or prior to a pre-construction meeting, or 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 C4.1 for the return of the executed Contract Documents, if applicable.

D14. DETAILED WORK SCHEDULE

D14.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract Documents, as applicable.

- D14.2 The detailed work schedule shall consist of a Gantt chart for the Work acceptable to the Contract Administrator.
- D14.3 Further to D14.2, the Gantt chart show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

SCHEDULE OF WORK

D15. COMMENCEMENT

- D15.1 The Contractor shall not commence any Work until he/she is in receipt of an award letter from the Award Authority authorizing the commencement of the Work.
- D15.2 The Contractor shall not commence any Work on the Site until:
- (a) the Contract Administrator has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D8;
 - (ii) evidence of the workers compensation coverage specified in C6.15;
 - (iii) the twenty-four (24) hour emergency response phone number specified in D5.2.
 - (iv) the Safe Work Plan specified in D9;
 - (v) evidence of the insurance specified in D10;
 - (vi) the contract security specified in D11;
 - (vii) the subcontractor list specified in D12;
 - (viii) the equipment list specified in D13; and
 - (ix) the detailed work schedule specified in D14.
 - (b) the Contractor has attended a pre-construction meeting with the Contract Administrator, or the Contract Administrator has waived the requirement for a pre-construction meeting.
- D15.3 The Contractor shall commence the Work on the Site within seven (7) Working Days of receipt of the award letter.
- D15.4 The City intends to award this Contract by October 7, 2020.
- D15.4.1 If the actual date of award is later than the intended date, the dates specified for Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D16. WORK BY OTHERS

- D16.1 Work by others on or near the Site will include but not necessarily be limited to:
- (a) City of Winnipeg Traffic Services – Erection and maintenance of temporary traffic control (see E6), removal and replacement of traffic barrier as required.

D17. SEQUENCE OF WORK

- D17.1 Further to C6.1, the sequence of work shall be as follows:
- D17.1.1 The Work shall be divided into two (2) stages as follow:
- (a) **Stage I** – Commencement to Substantial Performance
 - (i) Rockfill Rib Construction
 - (ii) Clay Cap of Rockfill
 - (iii) Trench Drain Construction
 - (iv) Clay Cap of Trench Drain
 - (v) Tension Crack Repair and Regrading

(vi) Silt Fence Installation

(b) **Stage II** – Spring 2021 to Total Performance

- (i) ECB Installation
- (ii) Topsoil and Seed Placement

D18. SUBSTANTIAL PERFORMANCE

- D18.1 The Contractor shall achieve Substantial Performance by October 30, 2020.
- D18.2 When the Contractor considers the Work to be substantially performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Substantial Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D18.3 The date on which the Work has been certified by the Contract Administrator as being substantially performed to the requirements of the Contract through the issue of a certificate of Substantial Performance is the date on which Substantial Performance has been achieved.

D19. TOTAL PERFORMANCE

- D19.1 The Contractor shall achieve Total Performance by June 15, 2021.
- D19.2 When the Contractor or the Contract Administrator considers the Work to be totally performed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Total Performance. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D19.3 The date on which the Work has been certified by the Contract Administrator as being totally performed to the requirements of the Contract through the issue of a certificate of Total Performance is the date on which Total Performance has been achieved.

D20. LIQUIDATED DAMAGES

- D20.1 If the Contractor fails to achieve Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Calendar Day for each and every Calendar Day following the days fixed herein for same during which such failure continues:
- (a) Substantial Performance - one thousand and five hundred dollars (\$1,500);
 - (b) Total Performance - seven hundred and fifty dollars (\$750).
- D20.2 The amounts specified for liquidated damages in D20.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve Substantial Performance or Total Performance by the days fixed herein for same.
- D20.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D21. COVID-19 SCHEDULE DELAYS

- D21.1 The City acknowledges that the schedule for this Contract may be impacted by the COVID-19 pandemic. Commencement and progress of the Work shall be performed by the Contractor with due consideration to the health and safety of workers and the public, directives from health authorities and various levels of government and in close consultation with the Contract Administrator.

- D21.2 If the Contractor is delayed in the performance of the Work by reason of the COVID-19 pandemic, the Work schedule may be adjusted by a period of time equal to the time lost due to such delay and costs related to such delay will be determined as identified herein.
- D21.3 A minimum of seven (7) Calendar Days prior to the commencement of Work, the Contractor shall declare whether COVID-19 will affect the start date. The Contractor shall provide sufficient evidence that the delay is directly related to COVID-19, including but not limited to evidence related to availability of staff, availability of Material or work by others.
- D21.4 For any delay related to COVID-19 and identified after Work has commenced, the Contractor shall within seven (7) Calendar Days of becoming aware of the anticipated delay declare the additional delay and shall provide sufficient evidence as indicated in D21.3. Failure to provide this notice will result in no additional time delays being considered by the City.
- D21.5 The Work schedule, including the durations identified in D18 to D19 where applicable, will be adjusted to reflect delays accepted by the Contract Administrator. No additional payment will be made for adjustment of schedules except where seasonal work, not previously identified in the Contract, is carried over to the following construction season.
- D21.6 Where Work not previously identified is being carried over solely as a result of delays related to COVID-19, as confirmed by the Contract Administrator, the cost of temporary works to maintain the Work in a safe manner until Work recommences, will be considered by the Contract Administrator. Where the Work is carried over only partially due to COVID-19, a partial consideration of the cost of temporary works will be considered by the Contract Administrator.
- D21.7 Any time or cost implications as a result of COVID-19 and in accordance with the above, as confirmed by the Contract Administrator, shall be documented in accordance with C7.

D22. SCHEDULED MAINTENANCE

- D22.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:
- (a) Seeding as specified in E14.3.3(a).
- D22.2 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

D23. JOB MEETINGS

- D23.1 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 representation 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.
- D23.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

D24. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D24.1 Further to C6.26, 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).

D25. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

D25.1 Further to B13.4, the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at its sole discretion and acting reasonably, require updated proof of compliance, as set out in B13.4.

MEASUREMENT AND PAYMENT

D26. PAYMENT

D26.1 Further to C12, the City may at its option pay the Contractor by direct deposit to the Contractor's banking institution.

THIRD PARTY AGREEMENTS

D27. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

D27.1 Funding for the Work of the Contract is being provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada and accordingly, as required by the applicable funding agreements, the following terms and conditions shall apply.

D27.2 For the purposes of D27:

- (a) **“Government of Canada”** includes the authorized officials, auditors, and representatives of the Government of Canada; and
- (b) **“Government of Manitoba”** includes the authorized officials, auditors, and representatives of the Government of Manitoba.

D27.3 Indemnification By Contractor

D27.3.1 In addition to the indemnity obligations outlined in C17 of the General Conditions for Construction, the Contractor agrees to indemnify and save harmless the Government of Canada and the Government of Manitoba and each of their respective Ministers, officers, servants, employees, and agents from and against all claims and demands, losses, costs, damages, actions, suit or other proceedings brought or pursued in any manner in respect of any matter caused by the Contractor or arising from this Contract or the Work, or from the goods or services provided or required to be provided by the Contractor, except those resulting from the negligence of any of the Government of Canada's or the Government of Manitoba's Ministers, officers, servants, employees, or agents, as the case may be.

D27.4 Records Retention and Audits

D27.4.1 The Contractor shall maintain and preserve accurate and complete records in respect of this Contract and the Work, including all accounting records, financial documents, copies of contracts with other parties and other records relating to this Contract and the Work during the term of the Contract and for at least six (6) years after Total Performance. Those records bearing original signatures or professional seals or stamps must be preserved in paper form; other records may be retained in electronic form.

D27.4.2 In addition to the record keeping and inspection obligations outlined in C6 of the General Conditions for Construction, the Contractor shall keep available for inspection and audit at all reasonable times while this Contract is in effect and until at least six (6) years after Total Performance, all records, documents, and contracts referred to in D27.4.1 for inspection,

copying and audit by the City of Winnipeg, the Government of Manitoba and/or the Government of Canada and their respective representatives and auditors, and to produce them on demand; to provide reasonable facilities for such inspections, copying and audits, to provide copies of and extracts from such records, documents, or contracts upon request by the City of Winnipeg, the Government of Manitoba, and/or the Government of Canada and their respective representatives and auditors, and to promptly provide such other information and explanations as may be reasonably requested by the City of Winnipeg, the Government of Manitoba, and/or the Government of Canada from time-to-time.

D27.5 Other Obligations

D27.5.1 The Contractor consents to the City providing a copy of the Contract Documents to the Government of Manitoba and/or the Government of Canada upon request from either entity.

D27.5.2 If the Lobbyists Registration Act (Manitoba) applies to the Contractor, the Contractor represents and warrants that it has filed a return and is registered and in full compliance with the obligations of that Act, and covenants that it will continue to comply for the duration of this Contract.

D27.5.3 The Contractor shall comply with all applicable legislation and standards, whether federal, provincial, or municipal, including (without limitation) labour, environmental, and human rights laws, in the course of providing the Work.

D27.5.4 The Contractor shall properly account for the Work provided under this Contract and payment received in this respect, prepared in accordance with generally accepted accounting principles in effect in Canada, including those principles and standards approved or recommended from time-to-time by the Chartered Professional Accountants of Canada or the Public Sector Accounting Board, as applicable, applied on a consistent basis.

FORM H1: PERFORMANCE BOND
(See D11)

KNOW ALL MEN BY THESE PRESENTS THAT

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

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

_____ dollars (\$_____)

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

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

TENDER NO. 606-2020

PEMBINA HIGHWAY AND BISHOP GRANDIN BOULEVARD INTERCHANGE SOUTHWEST CORNER
SLOPE STABILIZATION

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: LABOUR AND MATERIAL PAYMENT BOND
(See D11)

KNOW ALL MEN BY THESE PRESENTS THAT

his/its heirs, executors, administrators, successors or assigns (hereinafter called the "Principal"), and

his/its heirs, executors, administrators, successors or assigns (hereinafter called the "Surety"), are held and firmly bound unto **THE CITY OF WINNIPEG** (hereinafter called the "Obligee"), for the use and benefit of claimants as herein below defined, in the amount of

_____ dollars (\$_____)

of lawful money of Canada, for the payment whereof we, the Principal and the Surety jointly and severally bind ourselves firmly by these presents.

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

TENDER NO. 606-2020

PEMBINA HIGHWAY AND BISHOP GRANDIN BOULEVARD INTERCHANGE SOUTHWEST CORNER
SLOPE STABILIZATION

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 promptly make payment to all claimants as hereinafter defined, for all labour, service and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void, otherwise it shall remain in full force and effect subject, however, to the following conditions:

- (a) A claimant is defined as one having a direct contract with the Principal for labour, service and material, or any of them, used or reasonably required for use in the performance of the contract, labour, service and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment (but excluding rent of equipment where the rent pursuant to an agreement is to be applied towards the purchase price thereof) directly applicable to the Contract;
- (b) The above-named Principal and Surety hereby jointly and severally agree with the Obligee that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work, labour or service was done or performed, or materials were furnished by such claimant, may sue on this bond, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon;
- (c) No suit or action shall be commenced hereunder by any claimant
 - (i) unless claimant shall have given written notice to the Principal and the Surety above-named, within one hundred and twenty (120) days after such claimant did or performed the last of the work, labour or service, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work, labour or service was done or performed. Such notice shall be served by mailing the same by registered mail to the Principal, and Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the Province of Manitoba;

- (ii) after the expiration of one (1) year following the date on which Principal ceased work on said Contract; including work performed under the guarantees provided in the Contract;
 - (iii) other than in a court of competent jurisdiction in the Province of Manitoba.
- (d) The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.
- (e) The Surety shall not be liable for a greater sum than the specified penalty of this bond.

The Principal and Surety hereby agree that The Guarantors' Liability Act (Manitoba) shall apply to this Bond.

IN TESTIMONY WHEREOF, the Principal has hereunto set its hand affixed its seal, and the Surety has caused these presents to be sealed and with its corporate seal duly attested by the authorized signature of its signing authority this

_____ 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 K: EQUIPMENT
(See D13)

**PEMBINA HIGHWAY AND BISHOP GRANDIN BOULEVARD INTERCHANGE SOUTHWEST CORNER
SLOPE STABILIZATION**

<p>1. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>2. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>3. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>

FORM K: EQUIPMENT
(See D13)

PEMBINA HIGHWAY AND BISHOP GRANDIN BOULEVARD INTERCHANGE SOUTHWEST CORNER
SLOPE STABILIZATION

<p>4. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>5. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>
<p>6. Category/type:</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p> <p>Make/Model/Year: _____ Serial No.: _____</p> <p>Registered owner: _____</p>

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 Tender shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.3 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B7. In every instance where a brand name or design specification is used, the City will also consider approved equals and/or approved alternatives in accordance with B7.
- E1.4 The following are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
B215-20-01-R0	Cover Sheet, Location Plan and Drawing Index	11"x17"
B215-20-02-R0	Existing Conditions – Plan and Cross-Section 01	11"x17"
B215-20-03-R0	Laydown and Traffic Management	11"x17"
B215-20-04-R0	Stabilization Works – Plan, Cross-Sections and Detail	11"x17"

E2. MOBILIZATION AND DEMOBILIZATION PAYMENT

- E2.1 Description
- E2.1.1 This Specification shall cover all operations relating to the mobilization and demobilization of the Contractor to the project location(s).
- E2.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.
- E2.1.3 The inclusion of a payment item for the Work under this Specification shall not release or reduce the responsibilities of the Contractor under any other specification in this Contract.
- E2.2 Scope of Work
- E2.2.1 Further to C12 of the General Conditions, where Mobilization and Demobilization is included as a bid item, it shall consist of the following, as applicable:
- (a) Mobilization shall include, but not be limited to:
- (i) All activities and associated costs for transportation of the Contractor's personnel, equipment, and operating supplies to the site, and/or sites, and/or between sites;
 - (ii) Establishment of offices, buildings, other necessary general facilities and equipment parking/staging areas for the Contractor's operations at the site or sites;

- (iii) Premiums paid for performance and payment bonds including coinsurance and reinsurance agreements as applicable;
 - (iv) General cleanup and housekeeping needed maintain a neat and orderly project site and/or sites;
 - (v) Other job related items.
 - (b) Demobilization shall include, but not be limited to:
 - (i) All activities and costs for transportation of personnel, equipment, and supplies not used in the project from the site, and/or sites, and/or between sites;
 - (ii) Disassembly, removal, and site cleanup and restoration of offices, buildings, and other facilities assembled on the site and/or sites;
 - (iii) Repair of access roads, temporary haul roads, and equipment parking areas leaving the project site in the same or better condition than at the start of the project;
 - (a) General cleanup and housekeeping needed to restore a neat and orderly project site.
- E2.2.2 Access to the site, equipment parking, and staging areas are limited to that shown on the drawings or as approved by the Contract Administrator.
- E2.3 Materials
- E2.3.1 All materials supplied under this Specification shall be of a type approved by the Contract Administrator, and shall be subject to inspection and testing by the Contract Administrator.
- E2.3.2 The Contractor shall be responsible for the supply, safe storage and handling of all materials as set forth in this Specification. All materials shall be handled in a careful and workmanlike manner, to the satisfaction of the Contract Administrator.
- E2.4 Equipment
- E2.4.1 All equipment shall be of a type acceptable to the Contract Administrator and shall be kept in good working order.
- E2.5 Construction Methods
- E2.5.1 Layout of On-Site Work Facilities
- (a) The Contractor shall mobilize all on-site Work and other temporary facilities.
 - (b) Possible locations for the Contractor's staging areas are shown on the Drawings. The Contractor shall coordinate with relevant parties to make arrangements for use of these areas.
 - (c) Upon completion of construction activities, the Contractor shall remove all on-site Work and other temporary facilities, and restore to pre-existing conditions.
- E2.5.2 Cellular Telephone Communication
- (a) The Contractor's site supervisor is required to carry, at all times, a cellular telephone, with voice mail.
- E2.5.3 Traffic Gates
- (a) The Contractor shall supply, install, maintain, and remove steel gates to keep non-Contract traffic and pedestrians out of the Work site, wherever required.
 - (b) The gates shall be removed upon completion of construction activities.
- E2.5.4 Access Roadway
- (a) The Contractor shall maintain any access roadway they install.
 - (b) The access road shall be maintained on a regular basis to provide continual unrestricted site access, to the satisfaction of the Contract Administrator.
 - (c) City of Winnipeg streets and alleys adjacent to all access roads and staging areas must be kept clean at all times.

- (d) Upon completion of the Work, the area shall be restored to its original condition.

E2.5.5 Restoration of Existing Facilities

- (a) Upon completion of the Work and demobilization, the Contractor shall restore existing facilities.

E2.6 Quality Control

E2.6.1 Inspection

- (a) All workmanship and all materials furnished and supplied under this Specification are subject to close and systematic inspection and testing by the Contract Administrator including all operations from the selection and production of materials through to final acceptance of the specified Work.
- (b) The Contractor shall be wholly responsible for the control of all operations incidental thereto, notwithstanding any inspection or acceptance that may have been 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.

E2.6.2 Access

- (a) The Contractor shall allow the Contract Administrator free access to all parts of the Work at all times. The Contractor shall supply samples to the Contract Administrator or his inspector for testing purposes as required. There will be no charge to the City for samples taken.

E2.7 Measurement and Payment

E2.7.1 Mobilization and Demobilization

- (a) Mobilization and demobilization shall not be measured. This item of work shall be paid for at the Contract Lump Sum Price for "Mobilization and Demobilization", which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the Work, included in this Specification and accepted by the Contract Administrator.

E2.7.2 Mobilization and demobilization will be paid for at a percentage of the Contract Lump Sum Price for "Mobilization and Demobilization" specified as follows:

- (a) 50% when the construction has commenced;
- (b) 50% upon total completion of the Work.

E3. GEOTECHNICAL REPORT

- E3.1 Further to C3.1, the geotechnical report is provided to aid the Contractor's evaluation of the existing soil conditions. The geotechnical report is contained in Appendix 'A'.

E4. LAYOUT OF WORK

- E4.1 The Contract Administrator will provide the basic centerlines and elevations of the Work.
- E4.2 The Contractor shall be responsible for the true and proper layout of the Work and for the correctness of the location, levels, dimensions, and alignment of all aspects of the Work. He shall provide all required instruments and competent personnel for performing all layouts.
- E4.3 The Contract Administrator shall be notified at least one (1) working day prior to any Work being commenced in order to have the option to check and review all elevations and layouts at his discretion.
- E4.4 The Contractor shall carefully protect and preserve all benchmarks, stakes, and other items used in giving the basic data supplied by the Contract Administrator. Any such benchmarks or

stakes removed or destroyed by the Contractor, without the consent of the Contract Administrator, shall be replaced by the Contract Administrator at the expense of the Contractor.

E5. ENVIRONMENTAL PROTECTION PLAN

E5.1 The Contractor shall conduct his operations in accordance with all current federal, provincial or other regulations concerning environmental protection and pollution control. It shall be the Contractor's responsibility to familiarize himself with all applicable regulations and to obtain all necessary approvals and permits for his operations.

E5.2 The Contractor is advised that the following environmental protection measures apply to the Work.

(a) Materials Handling and Storage

- (i) Storage on construction materials shall be confined to the defined laydown areas as shown on the Drawings or at a location approved by the Contract Administrator.
- (ii) Any construction staging and material stockpiles are to be well removed from the top of bank area and located in an area as approved by the Contract Administrator so that slope stability is not compromised.
- (iii) Construction materials and debris shall be tied down or secured if severe weather and high wind velocities are forecasted. Work shall be suspended during extreme weather and high wind conditions.

(b) Fuel Handling and Storage

- (i) All fuel handling and storage facilities shall comply with The Dangerous Goods and Transportation Act Storage and Handling of Petroleum Products Regulation and any local land use permits.
- (ii) Fuels, lubricants, and other potentially hazardous materials as defined in The Dangerous Goods and Transportation Act shall be stored and handled within the approved storage areas.
- (iii) The Contractor shall ensure that any temporary fuel storage areas established for construction of the project are contained by an impermeable dike. Dikes shall be designed, constructed, and maintained to retain not less than 100% of the capacity of the total number of containers or 110% of the largest container, whichever is greatest. The dikes shall be constructed of clay or similar impervious material. If this type of material is not available, the dike shall be constructed of locally available material and lined with high-density polyethylene (HDPE). Furthermore, the fuel storage area(s) shall be secured by a barrier such as a high fence and gate to prevent vandalism.
- (iv) The Contractor shall ensure that all fuel storage containers are inspected daily for leaks and spillage.
- (v) Products transferred from the fuel storage area(s) to specific Work Sites shall not exceed the daily usage requirement.
- (vi) When servicing requires the drainage or pumping of fuels, lubricating oils or other fluids from equipment, a groundsheet of suitable material (such as HDPE) and size shall be spread on the ground to catch the fluid in the event of a leak or spill.
- (vii) The area around storage sites and fuel lines shall be distinctly marked and kept clear of snow and debris to allow for routine inspection and leak detection.
- (viii) Machinery shall arrive on Site in a clean condition and shall be maintained to be free to fluid leaks.
- (ix) A sufficient supply of materials, such as absorbent material and plastic oil booms, to clean up minor spills shall be stored nearby on Site. The Contractor shall ensure that additional material can be made available upon short notice. Additionally, appropriate staff on Site shall be trained for proper handling of deleterious liquids (i.e. fueling) and trained in preventing and cleaning up minor spills.

(c) Waste Handling and Disposal

- (i) The construction area shall be kept clean and orderly at all times during and at completion of construction.
 - (ii) At no time during construction shall personal or construction waste be permitted to accumulate for more than one day at any location on the construction Site, other than at a dedicated storage area as may be approved by the Contract Administrator.
 - (iii) The Contractor shall, during and at the completion of construction, clean-up the construction area and all resulting debris shall be deposited at a Waste Disposal Ground operating under the authority of Manitoba Regulation 150/91. Exceptions are liquid industrial and hazardous wastes which require special disposal methods (refer to Section 30.5D).
 - (iv) On Site volumes of sewage and/or septage will be removed on a weekly basis.
 - (v) The Contractor shall ensure sewage, septage, and other liquid wastes generated on Site are handled and disposed of by a certified disposal contractor.
 - (vi) Indiscriminate dumping, littering, or abandonment shall not take place.
 - (vii) No on-Site burning of waste is permitted.
 - (viii) Structurally unsuitable site excavation material will be removed by the Contractor.
 - (ix) Waste storage areas shall not be located so as to block natural drainage.
 - (x) Waste storage areas shall be left in a neat and finished appearance and/or restored to their original condition to the satisfaction of the Contract Administrator.
 - (xi) The Contractor shall notify and receive written approval from the Contract Administrator prior to discharge from any dewatered areas. The discharge will be released into a well-vegetated area, filter bag, settling basin, or storm sewer system to remove the suspended material and other deleterious substances from the discharge before it finds its way into any watercourse. Discharge from dewatering areas may require approved disposal via the sanitary sewer system or disposal truck in accordance with Construction Specifications, at the request of the Contract Administrator.
 - (xii) Flows will be dissipated so that dewatering discharges minimize erosion at the discharge point.
- (d) Dangerous Goods/Hazardous Waste Handling and Disposal
- (i) Dangerous goods/hazardous waste are identified by, and shall be handled according to, The Dangerous Goods Handling and Transportation Act and Regulations.
 - (ii) The Contractor shall be familiar with The Dangerous Goods Handling and Transportation Act and Regulations.
 - (iii) The Contractor shall have on Site staff that is trained and certified in the handling of the dangerous/hazardous goods, when said dangerous/hazardous goods are being utilized on Site for the performance of the Work.
 - (iv) Different waste streams shall not be mixed.
 - (v) Disposal of dangerous goods/hazardous wastes shall be at approved hazardous waste facilities.
 - (vi) Liquid hydrocarbons shall not be stored or disposed of in earthen pits on Site.
 - (vii) Used oils shall be stored in appropriate drums or tankage until shipment to waste oil recycling centres, incinerators, or secure disposal facilities approved for such wastes.
 - (viii) Used oil filters shall be drained, placed in suitable storage containers, and buried or incinerated at approved hazardous waste treatment and disposal facilities.
 - (ix) Dangerous goods/hazardous waste storage areas shall not be located so as to block natural drainage.
 - (x) Runoff from a dangerous goods/hazardous waste storage areas shall not be allowed to cause siltation of a watercourse.

- (xi) Dangerous goods/hazardous waste storage areas shall be left in a neat and finished appearance and/or restored to their original condition to the satisfaction of the Contract Administrator.

(e) Emergency Response

- (i) The Contractor shall ensure that due care and caution is taken to prevent spills.
- (ii) The Contractor shall report all major spills of petroleum products or other hazardous substances with significant impact on the environment and threat to human health and safety (as defined in Table 1 below) to Manitoba Environment, immediately after occurrence of the environmental accident, by calling the 24-hour emergency phone number (204) 945-4888.
- (iii) The Contractor shall designate a qualified supervisor as the on-Site emergency response coordinator for the project. The emergency response coordinator shall have the authority to redirect manpower in order to respond in the event of a spill.
- (iv) The following actions shall be taken by the person in charge of the spilled material or the first person(s) arriving at the scene of a hazardous material accident or the on-site emergency response coordinator:
- (i) Notify emergency-response coordinator of the accident:
- Identify exact location and time of accident;
 - Indicate injuries, if any;
 - Request assistance as required by magnitude of accident (Manitoba Environment 24-hour Spill Response Line (204) 945-4888, Police, Fire Department, Ambulance, company backup).
- (ii) Attend to public safety:
- Stop traffic, roadblock/cordon off the immediate danger area;
 - Eliminate ignition sources;
 - Initiate evacuation procedures if necessary.
- (iii) Assess situation and gather information on the status of the situation, noting:
- Personnel on Site;
 - Cause and effect of spill;
 - Estimated extent of damage;
 - Amount and type of material involved; and
 - Proximity to waterways, sewers, and manholes.
- (iv) If safe to do so, try to stop the dispersion or flow of spill material
- Approach from upwind;
 - Stop or reduce leak if safe to do so;
 - Dike spill material with dry, inert absorbent material or dry clay soil or sand;
 - Prevent spill material from entering waterways and utilities by diking;
 - Prevent spill material from entering manholes and other openings by covering with rubber spill mats or diking; and
 - Resume any effective action to contain, clean up, or stop the flow of the spilled product.
- (v) The emergency response coordinator shall ensure that all environmental accidents involving contaminants shall be documented and reported to Manitoba Environment according to The Dangerous goods Handling and Transportation Act Environmental Accident Report Regulation 439/87.
- (vi) When dangerous goods are used on Site, materials for containment and cleanup of spill material (e.g. absorbent materials, plastic oil booms, and oversized recovery drums) shall be available on Site.

- (vii) Minor spills of such substances that may be contained on land with no significant impact on the environment may be responded to within-house resources without formal notification to Manitoba Environment.
- (viii) City Emergency response, 9-1-1, shall be used if other means are not available.

TABLE 1 SPILLS THAT MUST BE REPORTED TO MANITOBA SUSTAINABLE DEVELOPMENT AS ENVIRONMENTAL ACCIDENTS		
Classification	Hazard	Reportable quantity/level
1	Explosives	All
2.1	Compressed Gas (Flammable)	100 L*
2.2	Compressed Gas	100 L*
2.3	Compressed Gas (Toxic)	All
2.4	Compressed Gas (Corrosive)	All
3	Flammable Liquids	100 L
4	Flammable Solids	1 Kg
5.1 PG** I & II	Oxidizer	K kg or 1 L
PG** III	Oxidizer	50 kg or 50 L
5.2	Organic Peroxide	1 kg or 1 L
6.1 PG** I & II	Acute Toxic	1 kg or 1 L
PG** III	Acute Toxic	5 kg or 5 L
6.2	Infectious	All
7	Radioactive	Any discharge or radiation level exceeding 10 mSv/h at the package surface and 200 uSv/h at 1 m from the package surface
8	Corrosive	5 kg or 5 L
9.1	Miscellaneous (except PCB mixtures)	50 kg
9.2	PCB Mixtures	500 g
9.3	Aquatic Toxic	1 kg or 1 L
9.4	Wastes (chronic toxic)	5 kg or 5 L
* Container capacity (refers to container water capacity)		
** PG = Packing Group(s)		

(f) Noise and Vibration

- (i) Noise-generating activities shall be limited to the hours indicated in the City of Winnipeg Noise Bylaw, unless otherwise accepted in advance by the Contract Administrator. The activities will generally be restricted to 7:00 a.m. to 7:00 p.m. weekdays with written permission of the Contract Administrator and the City of Winnipeg for any afterhours or weekend work required for special cases. No extended or alternative working hours/dates will be permitted for pile driving activities.
- (ii) The Contractor shall be responsible for scheduling Work to avoid potential noise problems and/or employ noise reduction measures to reduce noise to acceptable limits. The Contractor shall also demonstrate to the Contract Administrator that Works to be performed during the night-time period, on Sundays, and Holidays as stated in the Licence shall not exceed the approved limit.
- (iii) The Contractor shall locate stationary noise generating equipment (i.e. generators) away from sensitive receptors and wildlife areas.
- (iv) Construction vehicles and equipment will adhere to posted speed limits.

(g) Dust and Emissions

- (i) Dust control practices implemented by the Contractor during construction shall include regular street cleaning and dampening of construction access roads and

- Work areas with water or approved chemicals at an adequate frequency to prevent the creation of dust.
- (ii) The Contractor shall minimize construction equipment idling times and turn off machinery, when feasible.
 - (iii) Only water or chemicals approved by the Contract Administrator shall be used for dust control. The use of waste petroleum or petroleum by-products is not permitted.
 - (iv) The Contractor shall ensure that trucks which are used to haul excavated material and backfill material to and from the Work Site utilize tarpaulin covers during transport to prevent material from falling onto the street and creating dust.
 - (v) Stockpiled soils shall be covered with tarpaulin covers to prevent the creation of dust.
- (h) Erosion Control
- (i) Exposure of soils shall be kept to a minimum practical amount, acceptable to the Contract Administrator.
 - (ii) Sediment control fencing, or other such erosion control structures, shall be employed wherever construction activity increases the potential for runoff to carry sediment into a sewer, drainage channel or other watercourse. The Contractor shall inspect all such structures daily during heavy construction activity in the areas of the structures and after a heavy rainfall to ensure their continued integrity.
 - (iii) All areas disturbed during construction shall be landscaped and revegetated with native and/or introduced plant species in order to restore and enhance the Site and to protect against soil erosion unless otherwise indicated.
 - (iv) The disturbed surface shall be revegetated so as to create a dense root system in order to defend against soil erosion on the right-of-way and any other disturbed areas susceptible to erosion.
 - (v) The loss of topsoil and the creation of excessive dust by wind during construction shall be prevented by the addition of temporary cover crop, water, or tackifier, if conditions so warrant.
 - (vi) The Contractor shall routinely inspect all erosion and sediment control structures and immediately carry out any necessary maintenance. Several inspections will be performed during rainy days.
 - (vii) Construction activities will be avoided during periods of high winds to prevent erosion and the creation of dust.
- (i) Runoff Control
- (i) Measures shall be undertaken to ensure that runoff containing suspended soil particles is minimized from entering the land drainage system to the greatest extent possible, to the satisfaction of the Contract Administrator.
 - (ii) Areas that are heavily disturbed and vulnerable to erosion or gullyng will be diked to redirect surface runoff around the area prior to spring runoff.
 - (iii) Construction activities on erodible slopes shall be avoided during spring runoff and heavy rain fall events.
- (j) Vegetation
- (i) Vegetation shall not be disturbed without written permission from the Contract Administrator.
 - (ii) The Contractor shall protect plants or trees which may be at risk of accidental damage. Such measures may include protective fencing or signage and shall be approved in advance by the Contract Administrator.
 - (iii) The Contractor will limit the removal of trees and snags (standing dead trees), surface disturbance, and vegetation clearing.
 - (iv) Herbicides and pesticides shall not be used adjacent to any surface watercourses unless otherwise approved by the Contract Administrator.
 - (v) Trees or shrubs shall not be felled into watercourses.

- (vi) Areas where vegetation is removed during clearing, construction, and decommissioning activities, shall be revegetated as soon as possible in accordance with the landscaping plans forming part of the contract, or as directed by the Contract Administrator.
- (vii) Trees damaged during construction activities shall be examined by bonded tree care professionals; viable trees damaged during construction activities shall be pruned according to good practice by bonded tree care professionals.
- (viii) Damaged trees which are not viable shall be replaced at the expense of the Contractor.
- (k) Construction Traffic
 - (i) Workforce parking shall be limited to the areas designated for such as detailed in the Contract Documents, or as otherwise may be directed by the Contract Administrator.
 - (ii) The Contractor shall adhere to the Standard Provisions of the Standard Construction Specifications, and of the Manual of Temporary Traffic Control on City Streets of The City of Winnipeg, Public Works Department.
 - (iii) For circumstances where the Contract Administrator has accepted Site access of special equipment or material, the Contractor shall provide adequate flagmen for traffic control in the vicinity of any public buildings.
- (l) Access
 - (i) The Contractor shall maintain access to affected residential properties.
- (m) The Contractor shall provide or maintain general and off-street access to any affected business during construction.

E6. TRAFFIC CONTROL

E6.1 Further to clauses 3.6, 3.7 and 3.8 of CW 1130:

- (a) In accordance with the Manual of Temporary Traffic Control on City Streets (MTTC), the Contractor ("Construction Agency" in the manual) shall be responsible for placing, maintaining and removing the appropriate temporary traffic control devices as specified by the MTTC or by the Traffic Management Branch of the City of Winnipeg Public Works Department. The Contractor shall bear all costs associated with the placement of temporary traffic control devices by their own forces or subcontractor.

E6.2 Notwithstanding E6.1, in accordance with the MTTC, the Contract Administrator shall make arrangements with the **Traffic Services Branch of the City of Winnipeg** to place, maintain, and remove all **regulatory signs** and traffic control devices authorized and/or required by the Traffic Management Branch in the following situations:

- (a) Parking restrictions,
- (b) Stopping restrictions,
- (c) Turn restrictions,
- (d) Diamond lane removal,
- (e) Full or directional closures on a Regional Street,
- (f) Traffic routed across a median,
- (g) Full or directional closure of a non-regional street where there is a requirement for regulatory signs (turn restrictions, bus stop relocations, etc.) to implement the closure.
- (h) Approved Designated Construction Zones with a temporary posted speed limit reduction. Traffic Services will be responsible for placing all of the advance signs and 'Construction Ends' (TC-4) signs. The Contractor is still responsible for all other temporary traffic control including but not limited to barricades, barrels and tall cones.

E6.2.1 An exception to E6.2 is the 'KEEP RIGHT/KEEP LEFT' sign (RB-25 / RB-25L) which shall be supplied, installed, and maintained by the Contractor at their own expense.

E6.2.2 Further to E6.2, where the Contract Administrator has determined that the services of the Traffic Services Branch are required, the City shall bear the costs associated with the placement of temporary traffic control devices by the Traffic Services Branch of the City of Winnipeg in connection with the works undertaken by the Contractor.

E6.3 Notification

- (a) The Contractor shall notify the City of Winnipeg Customer Service at 204-986-5640, **two days** in advance of any traffic lane closures.

E7. TRAFFIC MANAGEMENT

E7.1 Further to clause 3.7 of CW 1130:

- (a) Southwest corner of Pembina Highway and Bishop Grandin Boulevard Interchange:
- (i) The Contractor may erect a shoulder closure on the south side of Bishop Grandin Boulevard for staging purposes.
 - (ii) Short-term or long-term lane closures shall not be permitted.
 - (iii) Stockpiled materials or equipment shall not be placed on traffic lanes.
 - (iv) Contractor to ensure that the traffic lanes are clean and free of debris at all times.
 - (v) Realign the merged lane from southbound Pembina Highway onto eastbound Bishop Grandin Boulevard as approved by the Contract Administrator.

E8. SURFACE RESTORATIONS

E8.1 Further to clause 3.3 of CW 1130, when Total Performance is not achieved in the year the Contract is commenced, the Contractor shall temporarily repair any Work commenced and not completed to the satisfaction of the Contract Administrator. The Contractor shall maintain the temporary repairs in a safe condition as determined by the Contract Administrator until permanent repairs are completed. The Contractor shall bear all costs associated with temporary repairs and their maintenance.

E9. WORKING AROUND MANITOBA HYDRO NATURAL GAS INFRASTRUCTURE

E9.1 Further to CW 1120:

- (a) Be advised that the Work will be completed in the vicinity of Manitoba Hydro distribution pressure natural gas main. The approximate locations of the distribution pressure natural gas main are shown on the Drawings.
- (b) Requirements applicable to the Work around Manitoba Natural Gas Infrastructure at the site are provided in Appendix B.
- (c) all requirements of Manitoba Hydro's Safe Excavation and Safety Watch guidelines shall apply. The Manitoba Hydro's Safe Excavation and Safety Watch guidelines are provided in Appendix C. All natural gas mains and services must be properly located and marked by Manitoba Hydro personnel. This can be arranged by visiting ClickBeforeYouDigMB.com or call 1-800-940-3447. Construction operations are not to commence unless these conditions are adhered to.
- (d) Verify requirements for working around Manitoba Hydro Infrastructure.

E9.2 Measurement and Payment

- (a) No separate measurement or payment will be made for the Work specified herein for Working Around Manitoba Hydro Natural Gas Infrastructure.

E10. ALUMINUM BALANCED BARRIER

E10.1 General

- (a) All Work shall be completed in accordance with CW 3650.

E10.2 Construction Methods

- (a) Aluminum balanced barrier within the work area shall be removed and salvaged as required to complete the Work and shall be reinstalled following the completion of the Work.
- (b) The Contractor shall replace all components that are damaged by the Contractor at no additional cost.

E10.3 Measurement and Payment

- (a) Notwithstanding CW 3650, no separate measurement or payment will be made for aluminum balanced barrier, and removal, salvage and reinstallation shall be incidental to the Work.

E11. SITE DEVELOPMENT

E11.1 Description

- E11.1.1 The work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all Work hereinafter specified.

E11.2 Submittals

E11.2.1 Site Access Plan

- (a) At least five (5) days prior to commencement of construction, the Contractor shall submit a Site Access Plan for acceptance by the Contract Administrator to facilitate the Work. The Site Access Plan shall be sufficient to satisfy the Contract Administrator that the proposed access will not adversely affect slope stability at any stage during construction.

E11.3 Construction Methods

- E11.3.1 The Contractor shall be responsible to develop and maintain suitable Site access. This includes but is not limited to, temporary bridging over structures, temporary removal and reinstallation of safety fencing, any landscaping and grading repairs necessary to restore any Site and construction access areas to their pre-existing topography, as accepted by the Contract Administrator.

E11.4 Measurement and Payment

- E11.4.1 No separate measurement or payment shall be made for Site Development.
- E11.4.2 Supply and placement of any imported fill or granular surfacing materials required for construction or maintenance of the temporary access ramps and working platforms shall be considered incidental to "Site Development" and no separate measurement or payment will be made.

E12. ROCKFILL RIB CONSTRUCTION

E12.1 Description

- E12.1.1 The Work covered under this item shall include all items relating to the construction of Rockfill ribs along the southwest corner of Pembina Highway and Bishop Grandin Boulevard interchange, as shown on the Drawings.
- E12.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E12.2 Scope of Work

E12.2.1 The scope of this Work is not necessarily confined to the following, which is compiled as a general outline:

- (a) Excavation.
- (b) Supply and placement rockfill.
- (c) Compaction of rockfill.
- (d) Supply and placement clay.
- (e) Compaction of clay.

E12.3 Materials

E12.3.1 General

- (a) The Contractor shall be responsible for the supply, safe storage, and handling of all materials set forth in this Specification. All materials supplied under this Specification shall be subject to inspection and testing by the Contract Administrator. There shall be no charge for any materials taken by the Contract Administrator for testing purposes.
- (b) The Contractor shall supply all materials incidental to these Works. All materials must be on hand prior to commencement of the Work.

E12.3.2 Rockfill for Rockfill Ribs

- (a) Rockfill shall consist of sound, dense, durable crushed limestone with the following requirements:
 - (i) minimum bulk specific gravity of 2.6 (ASTM C127),
 - (ii) maximum Los Angeles abrasion loss of 35% (ASTM C131),
 - (iii) maximum soundness loss of 13% (ASTM C88),
 - (iv) maximum absorption of 2.5% (ASTM C127)
 - (v) The material shall be free from organics, roots, silt, clay, snow, ice or any other deleterious material.
 - (vi) Gradation that conforms to the following:

Canadian Metric Sieve Size (mm)	Percent of Total Dry Weight Passing Sieve
100	97 – 100
25	30 – 50
0.08	0 - 8

E12.3.3 Testing and Approvals

- (a) Approval of the rockfill source(s) by the Contract Administrator is required prior to the supply and placement of the material at the site.
- (b) The Contractor shall identify the source of rockfill and confirm that sufficient quantity of the specified material is available.
- (c) The procedure for preparation of all samples shall be in accordance with ASTM D75.
- (d) The Contractor shall arrange for the Contract Administrator to visit the quarry site for rockfill a minimum of 7 days prior to supply. The Contract Administrator shall observe sampling by the Contractor of at least two samples for laboratory testing. The Contractor shall complete a minimum of one gradation test on the rockfill, in accordance with ASTM D5519, at their own expense.
- (e) The Contractor shall supply a representative sample of rockfill to TREK Geotechnical Inc. at least ten (10) days prior to the commencement of construction. The Contract

Administrator will advise the Contractor as to the required sample size. Additional material may be requested if the initial sample does not meet the specified physical properties.

- (f) The Contractor shall demonstrate that the rockfill meets the requirements of E12.3.2(a) to the satisfaction of the Contract Administrator. Laboratory testing for Bulk Specific Gravity, LA Abrasion and Soundness may be requested by the Contract Administrator and shall be conducted at the Contractor's own expense.
- (g) The Contract Administrator may perform additional testing should visible changes in material quality or gradation be observed that may impact on the performance of the works. The Contractor shall supply and deliver rockfill to the Contract Administrator's laboratory at no cost to the City.
- (h) Material deemed unacceptable by the Contract Administrator under these provisions shall be removed off-site at the Contractor's expense.
- (i) All materials set forth in this Specification shall be subject to inspection and testing by a testing laboratory approved by the Contract Administrator.

E12.3.4 Clay Cap

- (a) The clay cap for rockfill ribs shall consist of high plasticity clay material with a liquid limit in excess of 50%. The clay shall be free of deleterious material such as roots, organic material, ice, snow or other unsuitable materials, and may be salvaged from the on-site excavation, as approved by the Contract Administrator. Frozen material will not be accepted.

E12.4 Construction Methods

The Contractor shall carry out a compaction testing program to facilitate quality control during construction. This program shall be carried out to demonstrate that the means, methods and techniques of compaction proposed by the Contractor are capable of achieving the specified level of compaction.

The Contractor shall provide all necessary labour, material and equipment necessary to carry out the compaction testing program. All testing shall be carried out in the presence of the Contract Administrator. Minimum requirements for the testing program will include:

- .1 The first rockfill rib shall be used as a test trench. Additional test trenches (if required) shall be located immediately adjacent to completed test trenches. The test trench shall be excavated to the lines and grades shown on the drawings and backfilled as noted herein.
- .2 Placement of rockfill shall be in maximum lift thicknesses (prior to compaction) of 400 mm, if compacted using a hoe-pack. If a direct-insertion vibratory probe will be used for compaction, the rib may be backfilled in full prior to compaction. The equipment and methods proposed to place and compact rockfill shall be subject to acceptance by the Contractor Administrator.
- .3 Rockfill compaction proposed for construction shall be sufficient to achieve a minimum increase in density of 20% over uncompacted rockfill. The degree of compaction will be determined by measurement of the volume of backfill material before and after compaction for each lift.
- .4 Such other testing as necessary to demonstrate that the Contractor's proposed means, method(s), techniques and equipment are consistent with achieving the specified level of compaction during construction.

The compaction testing program shall establish the following:

- (a) the compaction equipment proposed for use,
- (b) the protocol for operations,
- (c) compactive effort required.

The Contractor shall demonstrate that the proposed methods of compaction will meet the specified requirement for each portion of the works prior to the construction of rockfill ribs. Acceptance of the Compaction Testing Program shall in no way relieve the Contractor from their contractual obligation of achieving the maximum apparent field density during construction.

E12.4.1 Trench Excavation

- (a) Trench excavation shall be completed to the lines and grades as shown on the Drawings and in accordance with CW 3170 and as indicated herein.
- (b) Trench excavation width for ribs is either 1.5 m or 2.5 m as shown on the Drawings. Any deleterious or sloughed material at the base of the excavation or during backfilling shall be removed prior to further backfilling.
- (c) The excavation side slopes shall be cut as near vertical as possible.
- (d) Any corrective actions to necessary to prevent water from entering or accumulating in the excavation shall be carried out.
- (e) Excavated material shall be salvaged on site for reused as clay cap, as approved by the Contract Administrator, or otherwise shall be hauled and disposed of off site.

E12.4.2 Backfilling and Compaction

- (a) Backfilling of rockfill shall commence immediately after excavation has been completed. Excavation of adjacent ribs will not be permitted until backfilling of the excavated rib is complete.
- (b) Care shall be taken to prevent contamination of rockfill. Should contamination of the rockfill occur, the affected material shall be removed and disposed as directed by the Contract Administrator.
- (c) The Contractor shall monitor compaction operations to confirm the results of the compaction testing program are consistently met.
- (d) The Contractor shall advise the Contract Administrator of any modifications to their proposed methods deemed necessary to achieve the specified level of compaction.

E12.4.3 Clay Cap

- (a) The rockfill ribs shall be sealed with clay cap as shown on the Drawings.
- (b) The clay shall be placed and compacted by mechanical means to eliminate any voids.

E12.5 Measurement and Payment

E12.5.1 Compaction testing program

- (a) The Compaction Testing Program shall be incidental to the price for "Rockfill Rib Construction".

E12.5.2 Excavation and Disposal

- (a) Excavation and disposal of excavated material shall be incidental to the price for "Rockfill Rib Construction".

E12.5.3 Rockfill Rib Construction

- (a) Rockfill rib construction shall be measured on a weight basis and paid for at the Contract Unit Price per tonne for "Rockfill Rib Construction" for the total number of tonnes of rockfill measured by truck weight scale tickets, constructed in accordance with this specification as accepted by the Contract Administrator.
- (b) The Contractor shall supply all truck weight scale tickets to the Contract Administrator at the end of each work day.
- (c) The backfill used in the Compaction Testing Program shall be included in the quantity for payment.

E12.5.4 Clay Cap

- (a) Supply and placement of clay for the clay cap (whether imported or salvaged from on site materials) shall be incidental to the price for "Rockfill Rib Construction".

E13. TRENCH DRAIN CONSTRUCTION

E13.1 Description

E13.1.1 The Work covered under this item shall include all items relating to the construction of trench drain along southwest corner of Pembina Highway and Bishop Grandin Boulevard interchange, as shown on the Drawings.

E13.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E13.2 Scope of Work

E13.2.1 The scope of this Work is not necessarily confined to the following, which is compiled as a general outline:

- (a) Hydro-Excavation
- (b) Excavation
- (c) Supply and placement geotextile fabric
- (d) Supply and placement of subdrain pipes complete with the necessary connectors and other appurtenances
- (e) Supply and installation of subdrain connection to catch basin complete with the necessary connectors and other appurtenances
- (f) Supply and placement of sand backfill
- (g) Compaction of sand backfill
- (h) Supply and placement clay cap

E13.3 Materials

E13.3.1 General

- (a) The Contractor shall be responsible for the supply, safe storage, and handling of all materials set forth in this Specification.
- (b) The Contractor shall supply all materials incidental to these Works. All materials must be on hand prior to commencement of the Work.

E13.3.2 Sand Backfill

- (a) Sand for bedding and backfill of subdrain pipes shall conform to Standard Construction Specification CW 2030, Section 2.

E13.3.3 Geotextile

- (a) Geotextile fabric shall consist of a separation/filtration geotextile fabric in accordance with the City of Winnipeg's approved products list and Standard Construction Specification CW 3130.

E13.3.4 Subdrain Pipe

- (a) Subdrain pipe shall consist of a perforated HDPE pipe in accordance with the City of Winnipeg's approved products list and Standard Construction Specification CW 3120.

E13.3.5 Subdrain Connection to Catch Basin

- (a) Pipe for connecting subdrains to the CB shall consist of non-perforated HDPE pipe compatible with the subdrain pipe.

E13.3.6 Clay Cap

- (a) The clay cap at the top of the rockfill ribs shall consist of high plasticity clay with a liquid limit in excess of 50%. The clay shall be free of deleterious material such as roots, organic material, ice, snow or other unsuitable materials, and may be salvaged from the on-site excavation, as approved by the Contract Administrator. Frozen material will not be accepted.

E13.3.7 Testing and Approvals

- (a) Approval of the sand backfill source(s) by the Contract Administrator is required prior to the supply and placement of the material at the site.
- (b) The Contractor shall identify the source of sand backfill and confirm that sufficient quantity of the specified material is available.
- (c) The procedure for preparation of all samples shall be in accordance with ASTM D75.
- (d) The Contract Administrator may perform additional testing should visible changes in material quality or gradation be observed that may impact on the performance of the works. The Contractor shall supply and deliver rockfill to the Contract Administrator's laboratory at no cost to the City.
- (e) All materials set forth in this Specification shall be subject to inspection and testing by a testing laboratory approved by the Contract Administrator.

E13.4 Construction Methods

E13.4.1 Hydro-Excavation

- (a) The Contractor shall identify on site the location of all existing underground plant within the trench drain alignment prior commencing hydro-excavation.
- (b) The Contractor shall arrange for a safety watch prior commencing hydro-excavation within 1 m of the existing Manitoba Hydro gas line.
- (c) Hydro-excavation shall be completed in accordance with Manitoba Hydro Safe Excavation and Safety Watch Guidelines.

E13.4.2 Trench Excavation

- (a) Trench Excavation shall be completed to the lines and grades as shown on the Drawings and in accordance with Standard Construction Specification CW 3170 and as indicated herein.
- (b) The excavation for trench drain shall have a width as shown on the Drawings. Any deleterious or sloughed material at the base of the excavation or during backfilling shall be removed prior to further backfilling.
- (c) The excavation side slopes shall be cut as near vertical as possible.
- (d) Any corrective actions to necessary to prevent water from entering or accumulating in the excavation shall be carried out.
- (e) Excavated material shall be salvaged on site for reused as clay cap, as approved by the Contract Administrator, or otherwise shall be hauled and disposed of off site.

E13.4.3 Installation of Geotextile Fabric

- (a) Install geotextile fabric in accordance with this specification and procedures recommended by the manufacturer.
- (b) Commence installation of geotextile fabric after geotextile material has been approved by the Contract Administrator and after the preparation of the sub-grade has been completed to the satisfaction of the Contract Administrator.
- (c) Remove and replace geotextile that is improperly installed or damaged as directed by the Contract Administrator.

E13.4.4 Installation of Subdrain Pipe

- (a) The Installation of subdrain pipe shall be completed in accordance with CW 3120.

- (b) Install filter sock on subdrain pipe prior placing sand backfill.

E13.4.5 Installation of Subdrain Connection to Catch Basin Pipe

- (a) The installation of subdrain connection to Catch Basin Pipe shall be done in accordance with CW 3120.

E13.4.6 Sand Backfill

- (a) Backfill subdrain trenches with sand backfill material as shown on the Drawings in lifts no greater than 300 mm thick and compacted.

E13.4.7 Clay Cap

- (a) The trench drain shall be sealed with clay cap as shown on the Drawings.
- (b) The clay cap material shall be placed within trench drain and compacted by mechanical means to eliminate any voids in the clay cap.

E13.5 Measurement and Payment

- (a) "Trench Drain Construction" will be measured on a linear metre basis. The quantity for payment shall be the total number of linear metres of perforated and non-perforated HDPE pipe supplied and installed in accordance with this Specification and accepted by the Contract Administrator.
- (b) All other Work described in this Specification shall not be measured and shall be incidental to the price of "Trench Drain Construction".

E14. SITE RESTORATION

E14.1 Description

E14.1.1 The Work covered under this item shall include all items relating to the construction of site restoration following rockfill rib and trench drain construction along southwest corner of Pembina Highway and Bishop Grandin Boulevard interchange, as shown on the Drawings.

E14.1.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E14.2 Scope of Work

E14.2.1 The scope of this Work is not necessarily confined to the following, which is compiled as a general outline:

- (a) Tension crack repair
- (b) Grading of work area
- (c) Supply and placement topsoil and seed
- (d) Restoration of any damage to existing facilities

E14.3 Materials

E14.3.1 General

- (a) The Contractor shall be responsible for the supply, safe storage, and handling of all materials set forth in this Specification.
- (b) The Contractor shall supply all materials incidental to these Works. All materials must be on hand prior to commencement of the Work.

E14.3.2 Topsoil

- (a) Topsoil shall be supplied in accordance with CW 3540, Clause 5.2.

E14.3.3 Seed

- (a) All seed shall be supplied in accordance with CW 3520, Section 5.3.2.

E14.4 Construction Methods

E14.4.1 Grading of Work Area

- (a) Grading of all disturbed areas in the Work Area as shown on the Drawings shall be done in accordance with CW 3170.
- (b) Grading of all disturbed areas where the grade is damaged by the Contractor outside of the Work Area shown on the Drawings and shall be considered incidental to the Work.
- (c) Remove and dispose of any excess excavated material from the Site.

E14.4.2 Tension Crack Repairs

- (a) Any tension cracks or head scarps shall be excavated to a depth of 0.5 m and recompacted with excavated soils as directed by the Contract Administrator.

E14.4.3 Topsoil and Seed

- (a) Topsoil and seed shall be placed on all graded areas within the Work Area shown on the Drawings. Topsoil and seed shall be placed in accordance with CW 3520.
- (b) Topsoil and seed shall be placed in any areas where existing grass vegetation is damaged by the Contractor outside of the Work Area shown on the Drawings and shall be considered incidental to the Work.

E14.4.4 Existing Facilities Restoration

- (a) Restore any damage to existing facilities to an equal or better condition than it was prior to construction, as approved by the Contract Administrator. Specifically:
 - (i) Grass vegetation shall be restored by seeding in accordance with CW 3520.

E14.5 Measurement and Payment

E14.5.1 Grading and Topsoil and Seed Placement

- (a) Notwithstanding CW 3520, grading of the Work Area including placement of topsoil and seed will be measured on a square metre basis. This item of work will be paid for at the contract Unit Price for the "Grading and Placement of Topsoil and Seed", performed in accordance with this Specification and accepted by the Contract Administrator.
- (b) No separate measurement or payment will be made for hauling or removing any excess material from site. This item of Work is incidental to the Unit Price for the "Grading and Placement of Topsoil and Seed".

E14.5.2 Tension Crack Repairs

- (a) Tension crack repairs will be measured on a linear metre basis and paid for the Contractor Unit Price for the "Tension Crack Repair", performed in accordance with this Specification and accepted by the Contract Administrator.

E15. EROSION CONTROL BLANKET

E15.1 Description

- (a) This Specification shall cover the supply and installation of erosion control blankets on top of topsoil and seed.
- (b) The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E15.2 Materials

E15.2.1 Erosion Control Blanket (ECB)

- (a) Erosion control blanket shall be machine produced 100% coconut fibre matrix with a functional longevity of up to 12 to 36 months.
- (b) The blanket shall be of consistent thickness with the coconut fibres evenly distributed over the entire area at a minimum of $0.27 \pm$ kg of coconut fibre/m².
- (c) Biodegradable reinforcement netting on both sides manufactured from heavy weight cotton or jute fibre thread. (1.47 kg/100 m of thread). The mesh dimension shall be a 16 x 16 mm sewn together on 38 mm centres.
- (d) Approved products are:
 - (i) Erosion Control Blanket C32BD;
 - (ii) North American Green C125BN
- (e) The Contractor shall submit all manufacturers' product specifications and recommended installation methods for the proposed erosion control blankets.

E15.3 Construction Methods

E15.3.1 Erosion Control Blanket (ECB) shall be installed over exposed unvegetated areas of the slope following completion of stabilization works.

E15.3.2 ECB Installation

- (a) The Contractor shall follow the manufacturer's recommended installation procedure, as well as the following requirements.
- (b) Roll blanket out in direction perpendicular to the slope.
- (c) Securely fasten blanket against soil surface with a staggered staple pattern as per manufacturer's recommendations and as accepted by the Contract Administrator.
- (d) At blanket edges overlap upstream blanket over downstream blanket by a minimum of 150 mm and secure overlaps.
- (e) The upstream edge of the blanket shall be secured in a 150 mm deep by 150 mm wide trench and anchored with staples at a maximum of 300 cm spacing. The trench shall be backfilled with compacted clay.

E15.3.3 ECB Maintenance

- (a) The areas covered with ECB shall be regularly inspected, and in particular after severe rainfall to check for blanket separation or breakage until the end of the warranty period or until vegetation growth has been established.
- (b) Any damage or poorly performing areas shall be replaced/repared immediately. Regarding of the slope by manual labour methods may be required in the event of rill or gully erosion.

E15.4 Measurement and Payment

E15.4.1 Erosion Control Blanket

- (b) Supplying and installing erosion control blanket shall be paid for at the Contract Unit Price per square meter for "Supply and Install Erosion Control Blanket", measured as specified herein, performed in accordance with this Specification and accepted by the Contract Administrator, which price shall be paid in full for supplying all materials and for performing all operations herein described and all other items incidental to the Work. The area to be paid for shall be the total area in plan view of ground covered by ECB supplied and installed as noted on the Drawings and accepted by the Contract Administrator.

E16. INSTALLATION OF SILT FENCE

E16.1 Description

E16.1.1 This specification covers the supply, erection, maintenance and removal of temporary silt fencing at the locations shown on the Drawings to control runoff and minimize the release of detrimental silt loading to watercourses.

E16.1.2 The Scope of the work included in this specification is as follows:

- (a) Supply and Install temporary silt fencing at the locations as indicated on the Drawings or as determined by the Contract Administrator, prior to undertaking any other activities on the Site where silt fencing is required.
- (b) Maintain the silt fencing in serviceable condition throughout the entire duration of activities at the Site where silt fencing is required, including final restoration and clean-up of the construction Site.
- (c) Remove the silt fencing and restore the area where the fencing was installed, without further disturbing the area and without releasing any deleterious substances to the adjacent land drainage system.

E16.2 Materials

E16.2.1 Fence Posts

- (a) Fence posts shall be 100 mm diameter untreated wood posts or 50 mm diameter steel.

E16.2.2 Filter Fabric

- (a) Filter Fabric shall be woven geotextile material specifically designed for a silt fence application, meeting the following minimum requirements:

Property	Test Method	Value
Grab Tensile Strength	ASTM D 4632	0.55 kN
Grab Tensile Elongation	ASTM D 4632	15%
Mullen Burst	ASTM D 4786	2060 kPa
Puncture	ASTM D 4833	0285 kN

Property	Test Method	Value
Trapezoid Tear	ASTM D 4533	0285 kN
UV Resistance	ASTM D 435	580% @ 500 hrs.
Apparent Opening Size	ASTM D 4751	0.60 mm
Flow Rate	ASTM D 4491	405 L/min/m ²

Acceptable Product: "Amoco 2130 Silt Fence Fabric" or approved equal in accordance with B7.

E16.2.3 Wire Mesh

- (a) Wire mesh shall be galvanized or plain metal with wire gauge = 3.0 mm, wire spacing @ 150 mm o/c.

E16.2.4 Fencing Material Fasteners

- (a) Staples or wire ties of sufficient strength and spacing to withstand 500 N (100 lbf) pull test at any point on the wire mesh.

E16.3 Construction Methods

E16.3.1 Ensure that no deleterious substances are discharged into the adjacent land drainage system at any time during construction activities.

E16.3.2 Silt Fence Installation

- (a) Excavate 150 x 150 anchor trench along alignment of silt fence as indicated. Note that riprap may be present in areas of anchor trench installation.
- (b) Ensure that fence posts are firmly driven into undisturbed soil, or are completely and firmly backfilled if installed via auger methods. Attach wire mesh as support backing for silt fence filter fabric with fasteners. Attach silt fence filter fabric on top of wire mesh in similar fashion. Overlap any fence seams (wire mesh or filter fabric) by 450 mm minimum. Ensure that wire mesh and filter fabric are installed on the upslope side of the post and are fully laid in anchor trench as shown
- (c) Install and compact impermeable excavated materials into anchor trench and slope as indicated. Compact to 95% of maximum dry density (ASTM D-698).

E16.3.3 Silt Fence Maintenance

- (a) Inspect silt fence daily, prior to starting any other construction activities. If fence posts are found loose or not upright, repair in accordance with installation procedure as specified. If silt fence is found to be loose or torn, repair or replace as necessary to comply with this Specification.
- (b) If silt deposition at the fence is 300 mm or more in depth, carefully remove and dispose of silt offsite without disturbing silt fence.

E16.3.4 Silt Fence Removal

- (a) The silt fence shall remain in place until permanent vegetation cover has been effectively introduced on all disturbed areas.
- (b) Upon authorization of the Contract Administrator, remove all fence posts, wire mesh, fabric, and fasteners from Site.
- (c) Restore area disturbed without releasing any deleterious substances to the adjacent watercourse.

E16.4 Measurement and Payment

E16.4.1 Silt Fence

- (a) The supply, placement, maintenance and removal of silt fence shall be measured on a length basis and paid for at the Contract Unit Price per linear metre for "Supply and Install Silt Fence". The length to be paid for shall be the total number of metres supplied and placed in accordance with this Specification, accepted and measured by the Contract Administrator. Payment of silt fence shall be in accordance with the following payment Schedule:
 - (i) Sixty percent (60%) of the Contract Unit Price per lineal metre for "Supply and Install Silt Fence" shall be paid following supply and installation.
 - (ii) Forty percent (40%) of the Contract Unit Price per lineal metre for "Supply and Install Silt Fence" shall be paid following final removal.
- (b) Removal of accumulated sediment from the silt fence is considered incidental to the Work and no separate measurement or payment will be made.

APPENDIX 'A'

GEOTECHNICAL REPORT

APPENDIX 'B'

MANITOBA HYDRO

APPENDIX 'C'

SAFE EXCAVATION

