



THE CITY OF WINNIPEG

TENDER

TENDER NO. 815-2022

**LYNDALE DRIVE EROSION PROTECTION AND PATHWAY
UPGRADES - HIGHFIELD ST TO BIRCHDALE AVE**

TABLE OF CONTENTS

PART A - BID SUBMISSION

- Form A: Bid/Proposal
- Form B: Prices
- Form G1: Bid Bond and Agreement to Bond

PART B - BIDDING PROCEDURES

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

PART C - GENERAL CONDITIONS

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

PART D - SUPPLEMENTAL CONDITIONS

General

| | |
|--|---|
| D1. General Conditions | 1 |
| D2. Form of Contract Documents | 1 |
| D3. Scope of Work | 1 |
| D4. Contract Administrator | 1 |
| D5. Contractor's Supervisor | 2 |
| D6. Accessible Customer Service Requirements | 2 |
| D7. Furnishing of Documents | 2 |

Submissions

| | |
|------------------------------------|---|
| D8. Authority to Carry on Business | 2 |
| D9. Safe Work Plan | 2 |
| D10. Insurance | 3 |
| D11. Contract Security | 3 |
| D12. Subcontractor List | 4 |
| D13. Equipment List | 4 |
| D14. Detailed Work Schedule | 4 |

Schedule of Work

| | |
|------------------------------|---|
| D15. Commencement | 5 |
| D16. Restricted Work Hours | 5 |
| D17. Work By Others | 6 |
| D18. Sequence of Work | 6 |
| D19. Critical Stages | 7 |
| D20. Substantial Performance | 7 |
| D21. Total Performance | 7 |
| D22. Liquidated Damages | 8 |

| | |
|--|----|
| D23. COVID-19 Schedule Delays | 8 |
| D24. Scheduled Maintenance | 8 |
| Control of Work | |
| D25. Job Meetings | 9 |
| D26. Prime Contractor – The Workplace Safety and Health Act (Manitoba) | 9 |
| D27. The Workplace Safety and Health Act (Manitoba) – Qualifications | 9 |
| Measurement and Payment | |
| D28. Payment | 9 |
| Warranty | |
| D29. Warranty | 9 |
| Dispute Resolution | |
| D30. Dispute Resolution | 10 |
| Third Party Agreements | |
| D31. Funding and/or Contribution Agreement Obligations | 11 |
| Form H1: Performance Bond | 13 |
| Form H2: Labour and Material Payment Bond | 15 |
| Form J: Subcontractor List | 17 |
| Form K: Equipment | 18 |

PART E - SPECIFICATIONS

| | |
|---|----|
| General | |
| E1. Applicable Specifications and Drawings | 1 |
| E2. Background Reports | 1 |
| E3. Waterway Permit | 1 |
| E4. Mobilization and Demobilization | 2 |
| E5. Office Facilities | 2 |
| E6. Protection of Riverbank Instrumentation | 3 |
| E7. Traffic Control | 3 |
| E8. Traffic Management | 4 |
| E9. Refuse and Recycling Collection | 5 |
| E10. Pedestrian Safety | 5 |
| E11. Water Obtained From the City | 5 |
| E12. Surface Restorations | 5 |
| E13. Site Development | 5 |
| E14. Protection of Existing Trees | 8 |
| E15. Pruning of Existing Trees | 11 |
| E16. Erosion and Sediment Control | 12 |
| E17. Riprap | 12 |
| E18. Pathway Embankment Construction | 14 |
| E19. Planting Medium & Finished Grading | 15 |
| E20. Erosion Control Blanket | 17 |
| E21. Dock Landing Retaining Wall | 19 |
| E22. Cable Concrete Mats | 20 |
| E23. Boulder Retaining Wall | 21 |
| E24. Park Pathway Crushed Limestone | 22 |
| E25. Sodding | 23 |
| E26. Tree Planting | 24 |
| E27. Site Furnishings | 28 |
| E28. Landscape Maintenance | 29 |

PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 LYNDALE DRIVE EROSION PROTECTION AND PATHWAY UPGRADES - HIGHFIELD ST TO BIRCHDALE AVE

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, November 29, 2022.

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. ENQUIRIES

B3.1 All enquiries shall be directed to the Contract Administrator identified in D4.1.

B3.2 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.

B3.3 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.

B3.4 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.

B3.5 The Bidder shall not be entitled to rely on any response or interpretation received pursuant to B3 unless that response or interpretation is provided by the Contract Administrator in writing.

B3.6 Any enquiries concerning submitting through MERX should be addressed to:
MERX Customer Support
Phone: 1-800-964-6379
Email: merx@merx.com

B4. CONFIDENTIALITY

B4.1 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.

B4.2 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.

B5. ADDENDA

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

- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B5.3 Addenda will be available on the MERX website at www.merx.com.
- B5.4 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.
- B5.5 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.
- B5.6 Notwithstanding B3, enquiries related to an Addendum may be directed to the Contract Administrator indicated in D4.

B6. SUBSTITUTES

- B6.1 The Work is based on the Plant, Materials and methods specified in the Tender.
- B6.2 Substitutions shall not be allowed unless application has been made to and prior approval has been granted by the Contract Administrator in writing.
- B6.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.
- B6.4 The Bidder shall ensure that any and all requests for approval of a substitute:
- (a) provide sufficient information and details to enable the Contract Administrator to determine the acceptability of the Plant, Material or method as either an approved equal or alternative;
 - (b) identify any and all changes required in the applicable Work, and all changes to any other Work, which would become necessary to accommodate the substitute;
 - (c) identify any anticipated cost or time savings that may be associated with the substitute;
 - (d) certify that, in the case of a request for approval as an approved equal, the substitute will fully perform the functions called for by the general design, be of equal or superior substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance;
 - (e) certify that, in the case of a request for approval as an approved alternative, the substitute will adequately perform the functions called for by the general design, be similar in substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the proposed work schedule and the dates specified in the Supplemental Conditions for Substantial Performance and Total Performance.
- B6.5 The Contract Administrator, after assessing the request for approval of a substitute, may in their sole discretion grant approval for the use of a substitute as an “approved equal” or as an “approved alternative”, or may refuse to grant approval of the substitute.
- B6.6 The Contract Administrator will provide a response in writing, at least two (2) Business Days prior to the Submission Deadline, to the Bidder who requested approval of the substitute.
- B6.6.1 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.

- B6.7 If the Contract Administrator approves a substitute as an “approved equal”, any Bidder may use the approved equal in place of the specified item.
- B6.8 If the Contract Administrator approves a substitute as an “approved alternative”, any Bidder bidding that approved alternative may base their Total Bid Price upon the specified item but may also indicate an alternative price based upon the approved alternative. Such alternatives will be evaluated in accordance with B17.
- B6.9 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved equal or an approved alternative will be considered.

B7. BID COMPONENTS

- B7.1 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.
- B7.2 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.
- B7.3 The Bid shall be submitted electronically through MERX at www.merx.com.
- B7.3.1 Bids will **only** be accepted electronically through MERX.
- B7.4 Bidders are advised that inclusion of terms and conditions inconsistent with the Tender document, including the General Conditions, will be evaluated in accordance with B17.1(a).

B8. BID

- B8.1 The Bidder shall complete Form A: Bid/Proposal, making all required entries.
- B8.2 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 their own name, their 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 their own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.
- B8.3 In Paragraph 3 of Form A: Bid/Proposal, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B8.4 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 their 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 their duly authorized officer or officers;

- (d) if the Bidder is carrying on business under a name other than their own, it shall be signed by the registered owner of the business name, or by the registered owner's authorized officials if the owner is a partnership or a corporation.

B8.4.1 The name and official capacity of all individuals signing Form A: Bid/Proposal should be entered below such signatures.

B8.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B9. PRICES

B9.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.

B9.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.

B9.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.

B9.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).

B9.5 The Bidder shall enter the Total Bid Price from Form B: Prices into the Total Bid Price field in MERX.

B9.5.1 Bidders are advised that the calculation indicated in B17.4 will prevail over the Total Bid Price entered in MERX.

B10. DISCLOSURE

B10.1 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.

B10.2 The Persons are:

- (a) Titan Environmental Containment – provided budgetary pricing for materials

B11. CONFLICT OF INTEREST AND GOOD FAITH

B11.1 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.

B11.2 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 their 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.

B11.3 In connection with their Bid, each entity identified in B11.2 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.

B11.4 Without limiting B11.3, the City may, in their 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 their 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 their sole discretion, to avoid or mitigate the impact of such Conflict of Interest.

B11.5 Without limiting B11.3, 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 their sole discretion:

- (a) disqualify a Bidder that fails to disclose a perceived, potential or actual Conflict of Interest of the Bidder or any of their 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 their 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 B11.4 to avoid or mitigate a Conflict of Interest; and
- (d) disqualify a Bidder if the Bidder, or one of their 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.

B11.6 The final determination of whether a perceived, potential or actual Conflict of Interest exists shall be made by the City, in their sole discretion.

B12. QUALIFICATION

B12.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and
- (b) be financially capable of carrying out the terms of the Contract; and

- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.
- B12.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Materials Management Division website at <https://www.winnipeg.ca/matmgt/Templates/files/debar.pdf>
- B12.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:
- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);
- (d) have completed the Accessible Customer Service online training required by the Accessibility for Manitobans Act (AMA) (see B12.5 and D6)
- B12.4 Further to (c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
- (a) 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/>).
- B12.5 Further to B12.3(d), the Bidder acknowledges they and all Subcontractors have obtained training required by the Accessibility for Manitobans Act (AMA) available at <http://www.accessibilitymb.ca/training.html> for anyone that may have any interaction with the public on behalf of the City of Winnipeg.
- B12.6 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B12.7 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

B13. BID SECURITY

- B13.1 The Bidder shall include in their 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>.
- B13.2 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 B13.2(a).
- B13.3 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 B17.1(a).
- B13.4 Bonds passing the verification process will be treated as original and authentic.
- B13.4.1 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.
- B13.5 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.
- B13.6 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.

B14. OPENING OF BIDS AND RELEASE OF INFORMATION

- B14.1 Bids will not be opened publicly.
- B14.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the MERX website at www.merx.com.
- B14.3 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.
- B14.4 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).
- B14.4.1 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.

B15. IRREVOCABLE BID

- B15.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid/Proposal.
- B15.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly 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.

B16. WITHDRAWAL OF BIDS

- B16.1 A Bidder may withdraw their Bid without penalty prior to the Submission Deadline.

B17. EVALUATION OF BIDS

- B17.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Tender, or acceptable deviation therefrom (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B12 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B6.
- B17.2 Further to B17.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.
- B17.3 Further to B17.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in their Bid or in other information required to be submitted, that he/she is qualified.
- B17.4 Further to B17.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B17.4.1 Further to B17.1(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.
- B17.4.2 Bidders are advised that the calculation indicated in B17.4 will prevail over the Total Bid Price entered in MERX.

B18. AWARD OF CONTRACT

- B18.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B18.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be qualified, and the Bids are determined to be responsive.
- B18.2.1 Without limiting the generality of B18.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with their own forces;

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

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

B18.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of their 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) Riverbank Erosion Protection Works

- (i) Construction of temporary access ramp(s)
- (ii) Supply and placement of rock riprap erosion protection
- (iii) Supply and installation of cable concrete dock apron
- (iv) Removal of temporary access and reshaping of riverbank
- (v) Site restoration of disturbed areas

(b) Pathway Upgrades

- (i) Construction of dock landing
- (ii) Construction of pathway embankments
- (iii) Removal of existing curbs for pathway connections to Lyndale Drive
- (iv) Construction of curb ramps and detectable warning tiles for pathway connections to Lyndale Drive
- (v) Construction of granular pathways
- (vi) Construction of boulder retaining wall
- (vii) Supply and installation of site furnishings
- (viii) Supply and placement of planting medium and finished grading
- (ix) Supply and placement of sodding
- (x) Large caliper tree plantings

(c) Landscape Maintenance

D4. CONTRACT ADMINISTRATOR

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

Michael Van Helden, 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, 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 their 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. ACCESSIBLE CUSTOMER SERVICE REQUIREMENTS

- D6.1 The Accessibility for Manitobans Act (AMA) imposes obligations on The City of Winnipeg to provide accessible customer service to all persons in accordance with the Customer Service Standard Regulation ("CSSR") to ensure inclusive access and participation for all people who live, work or visit Winnipeg regardless of their abilities.
- D6.1.1 The Contractor agrees to comply with the accessible customer service obligations under the CSSR and further agrees that when providing the Goods or Services or otherwise acting on the City of Winnipeg's behalf, shall comply with all obligations under the AMA applicable to public sector bodies.
- D6.1.2 The accessible customer service obligations include, but are not limited to:
- (a) providing barrier-free access to goods and services;
 - (b) providing reasonable accommodations;
 - (c) reasonably accommodating assistive devices, support persons, and support animals;
 - (d) providing accessibility features e.g. ramps, wide aisles, accessible washrooms, power doors and elevators;
 - (e) inform the public when accessibility features are not available;
 - (f) providing a mechanism or process for receiving and responding to public feedback on the accessibility of all goods and services; and
 - (g) providing adequate training of staff and documentation of same.

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 B12.4 at any time during the term of the Contract, the City may, at their 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 (\$2,500,000.00) 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 \$5,000,000 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.
- (d) Contractor's pollution liability Insurance in the amount of at least one million dollars (\$1,000,000.00) per occurrence and \$2,000,000 in the aggregate including clean up costs, and transported cargo as a result of pollution conditions arising from the Contractor's operations and completed operations. Such policy shall name the City and Manitoba as an additional insureds.

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 their 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 Contract Administrator identified in D4 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 the following:
- (a) a critical path method (C.P.M.) schedule for the Work; and
 - (b) a Gantt chart for the Work based on the C.P.M. schedule.
- all acceptable to the Contract Administrator.
- D14.3 Further to (a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:
- D14.4 Further to (b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

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;
 - (ix) the detailed work schedule specified in D14; and
 - (x) the direct deposit application form specified in D28
 - (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 December 23, 2022.
- D15.4.1 If the actual date of award is later than the intended date, the dates specified for Critical Stages, Substantial Performance, and Total Performance will be adjusted by the difference between the aforementioned intended and actual dates.

D16. RESTRICTED WORK HOURS

- D16.1 Further to clause 3.10 of CW 1130, the Contractor shall require written permission forty-eight (48) hours in advance from the Contract Administrator for any work to be performed between 2000 hours and 0700 hours, or on Saturdays, Sundays, Statutory Holidays and or Civic Holidays.

D17. WORK BY OTHERS

D17.1 Further to C6.25, the Contractor's attention is directed to the fact that other Contractors, the personnel of Utilities and the staff of the City may be working within the project limit, approach roadway, adjacent roadways or right-of-way. The activities of these agencies may coincide with the Contractor's execution of work and it will be the Contractor's responsibility to cooperate to the fullest extent with other personnel working in the area, and such cooperation is an obligation of the Contractor under the terms of Contract.

D17.2 Work by others on or near the Site will include but not necessarily be limited to:

(a) Manitoba Hydro:

- Relocation of street light poles at Cedar Place and Larchwood Place pathway connections. Relocation of utility poles near Birchdale Avenue. This work is anticipated to be complete by May 2023.
- Guy wire adjustment near Cedar Place Pathway. This work shall be coordinated with pathway embankment construction and finished grading.

(b) Bell MTS:

- Overhead cable adjustment on relocated utility poles near Birchdale Avenue. This work is anticipated to be complete by May 2023.

(c) City of Winnipeg Naturalist Services

- Grass seed placement in upper bank naturalisation areas (spring 2023) and planting of shrubs and small diameter trees on riverbank (spring/summer 2023);

D17.3 Further to D17.1 the Contractor shall cooperate and coordinate all activities with all parties performing required Work by Others. The Contractor must include and accommodate Work by Others identified in D17.2 or additional parties, in their construction schedule as per D14 and accommodate the necessary area on Site required for the Work by Others to complete the Work.

D18. SEQUENCE OF WORK

D18.1 Further to C6.1, the sequence of work shall be as follows:

D18.1.1 The Work shall be divided into three stages. Stages are further subdivided into major items of work.

(a) **Stage I** – Riverbank Erosion Protection Works

- (i) Site Development
- (ii) Riprap Erosion Protection
- (iii) Dock Landing Cable Concrete Apron
- (iv) Temporary access ramp removal and bank reshaping

(b) **Stage II** – Pathway Construction and Associated Works

- (i) Pathway Embankment Construction
- (ii) Pathway Construction and Connections to Lyndale Drive
- (iii) Dock Landing Construction
- (iv) Boulder Retaining Wall Construction
- (v) Installation of Site Furnishings

(c) **Stage III** – Site Restoration Works

- (i) Supply and Placement of Planting Medium and finished grading
- (ii) Sodding
- (iii) Tree Planting

D18.1.2 Immediately following the completion of the asphaltic concrete works of Phase I, the Contractor shall clean up the Site and remove all plant, surplus material, waste and debris, other than that left by the City or other Contractors.

D18.1 Further to C6.1, the sequence of work shall comply with the following:

D18.1.1 Maintain the existing street lighting on Lyndale Drive at all times until the proposed street lighting is complete. Any damage caused to the existing street lighting shall be repaired at the Contractor's own cost.

D18.1.2 No equipment or materials shall be present on Lyndale Drive on the days of June 17 and 18, 2023 for the Manitoba Marathon.

D18.1.3 Following installation of topsoil on riverbank, the Contractor shall allow the City of Winnipeg to proceed with seeding and planting of shrubs and small trees.

D19. CRITICAL STAGES

D19.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:

(a) "Riverbank Erosion Protection" as defined in D3.1 must be complete by March 10, 2023.

D19.2 When the Contractor considers the Work associated with the Critical Stages to be completed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Completion. 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 Critical Stages have been accepted by the Contract Administrator as being completed to the requirements of the Contract is the date on which completion of the Critical Stage has been achieved.

D20. SUBSTANTIAL PERFORMANCE

D20.1 The Contractor shall achieve Substantial Performance by July 15, 2023.

D20.2 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.

D20.3 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.

D21. TOTAL PERFORMANCE

D21.1 The Contractor shall achieve Total Performance by July 31, 2023.

D21.2 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.

D21.3 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.

D22. LIQUIDATED DAMAGES

- D22.1 If the Contractor fails to achieve Critical Stages, Substantial Performance or Total Performance in accordance with the Contract by the days fixed herein for same, the Contractor shall pay the City the following amounts per Calendar Day for each and every Calendar Day following the days fixed herein for same during which such failure continues:
- (a) Critical Stage for Riverbank Erosion Protection – three thousand dollars (\$3,000);
 - (b) Substantial Performance - three thousand dollars (\$3,000);
 - (c) Total Performance – one thousand dollars (\$1,000).
- D22.2 The amounts specified for liquidated damages in D22.1 are based on a genuine pre-estimate of the City's losses in the event that the Contractor does not achieve critical stages, Substantial Performance or Total Performance by the days fixed herein for same.
- D22.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D23. COVID-19 SCHEDULE DELAYS

- D23.1 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.
- D23.2 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.
- D23.3 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.
- D23.4 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 D23.3. Failure to provide this notice will result in no additional time delays being considered by the City.
- D23.5 The Work schedule, including the durations identified in D16 to D21 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.
- D23.6 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.
- D23.7 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.

D24. SCHEDULED MAINTENANCE

- D24.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:
- (a) Sodding as specified in CW3510;

(b) Landscape maintenance as specified in E28.

D24.2 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

D25. JOB MEETINGS

D25.1 Regular weekly job meetings will be held at the Site. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

D25.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever he/she deems it necessary.

D26. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D26.1 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).

D27. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

D27.1 Further to B12.4, the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at their sole discretion and acting reasonably, require updated proof of compliance, as set out in B12.4.

MEASUREMENT AND PAYMENT

D28. PAYMENT

D28.1 Further to C12, the City shall make payments to the Contractor by direct deposit to the Contractor's banking institution, and by no other means. Payments will not be made until the Contractor has made satisfactory direct deposit arrangements with the City. Direct deposit application forms are at https://winnipeg.ca/finance/files/Direct_Deposit_Form.pdf.

WARRANTY

D29. WARRANTY

D29.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter, except where longer warranty periods are specified in the respective Specification sections, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

D29.1.1 For the purpose of contract security, the warranty period shall be one (1) year.

D29.2 Notwithstanding C13.2, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Total Performance if a portion of the Work

cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.

- D29.2.1 In such case, the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

DISPUTE RESOLUTION

D30. DISPUTE RESOLUTION

- D30.1 If the Contractor disagrees with any opinion, determination, or decision of the Contract Administrator, the Contractor shall act in accordance with the Contract Administrator's opinion, determination, or decision unless and until same is modified by the process followed by the parties pursuant to D30.

- D30.2 The entire text of C21.4 is deleted, and amended to read: "Intentionally Deleted"

- D30.3 The entire text of C21.5 is deleted, and amended to read:

- (a) If Legal Services has determined that the Disputed Matter may proceed in the Appeal Process, the Contractor must, within ten (10) Business Days of the date of the Legal Services Response Letter, submit their written Appeal Form, in the manner and format set out on the City's Materials Management Website, to the Chief Administrative Officer, and to the Contract Administrator. The Contractor may not raise any other disputes other than the Disputed Matter in their Appeal Form.

- D30.4 Further to C21, prior to the Contract Administrator's issuance of a Final Determination, the following informal dispute resolution process shall be followed where the Contractor disagrees with any opinion, determination, or decision of the Contract Administrator ("Dispute"):

- (a) In the event of a Dispute, attempts shall be made by the Contract Administrator and the Contractor's equivalent representative to resolve Disputes within the normal course of project dealings between the Contract Administrator and the Contractor's equivalent representative.
- (b) Disputes which in the reasonable opinion of the Contract Administrator or the Contractor's equivalent representative cannot be resolved within the normal course of project dealings as described above shall be referred to a without prejudice escalating negotiation process consisting of, at a minimum, the position levels as shown below and the equivalent Contractor representative levels:
- (i) The Contract Administrator;
 - (ii) Supervisory level between the Contract Administrator and applicable Department Head;
 - (iii) Department Head.

- D30.4.1 Names and positions of Contractor representatives equivalent to the above City position levels shall be determined by the Contractor and communicated to the City at the pre-commencement or kick off meeting.

- D30.4.2 As these negotiations are not an adjudicative hearing, neither party may have legal counsel present during the negotiations.

- D30.4.3 Both the City and the Contractor agree to make all reasonable efforts to conduct the above escalating negotiation process within twenty (20) Business Days, unless both parties agree, in writing, to extend that period of time.

- D30.4.4 If the Dispute is not resolved to the City and Contractor's mutual satisfaction after discussions have occurred at the final escalated level as described above, or the time period set out in D30.4.3, as extended if applicable, has elapsed, the Contract Administrator will issue a Final Determination as defined in C1.1(v), at which point the parties will be governed by the Dispute Resolution process set out in C21.

THIRD PARTY AGREEMENTS

D31. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

D31.1 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.

D31.2 For the purposes of D31:

- (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.

D31.3 Indemnification By Contractor

D31.3.1 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.

D31.3.2 The Contractor agrees that in no event will Canada or Manitoba, their respective officers, servants, employees or agents be held liable for any damages in contract, tort (including negligence) or otherwise, for:

- (a) any injury to any person, including, but not limited to, death, economic loss or infringement of rights;
- (b) any damage to or loss or destruction of property of any person; or
- (c) any obligation of any person, including, but not limited to, any obligation arising from a loan, capital lease or other long term obligation;

in relation to this Contract or the Work.

D31.4 Records Retention and Audits

D31.4.1 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.

D31.4.2 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 D31.4.1 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.

D31.5 Other Obligations

- D31.5.1 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.
- D31.5.2 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.
- D31.5.3 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.
- D31.5.4 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.
- D31.5.5 The Contractor represents and warrants that no current or former public servant or public office holder, to whom the Value and Ethics Code for the Public Sector, the Policy on Conflict of Interest and Post Employment, or the Conflict of Interest Act applies, shall derive direct benefit from this Contract, including any employment, payments, or gifts, unless the provision or receipt of such benefits is in compliance with such codes and the legislation.
- D31.5.6 The Contractor represents and warrants that no member of the House of Commons or of the Senate of Canada or of the Legislative Assembly of Manitoba is a shareholder, director or officer of the Contractor or of a Subcontractor, and that no such member is entitled to any benefits arising from this Contract or from a contract with the Contractor or a Subcontractor concerning the Work.

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. 815-2022

LYNDALE DRIVE EROSION PROTECTION AND PATHWAY UPGRADES - HIGHFIELD ST TO
BIRCHDALE AVE

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. 815-2022

LYNDALE DRIVE EROSION PROTECTION AND PATHWAY UPGRADES - HIGHFIELD ST TO BIRCHDALE AVE

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 J: SUBCONTRACTOR LIST
(See D12)

LYNDALE DRIVE EROSION PROTECTION AND PATHWAY UPGRADES - HIGHFIELD ST TO
BIRCHDALE AVE

| <u>Portion of the Work</u> | <u>Name</u> | <u>Address</u> |
|--|-------------|----------------|
| RIVERBANK EROSION PROTECTION WORKS | | |
| Supply of Riprap | | |
| | | |
| Earthworks and Riprap Placement | | |
| Supply of Cable Concrete | | |
| PATHWAY WORKS | | |
| Earthworks | | |
| | | |
| Supply of Base and Subbase Material | | |
| | | |
| Placement of Base and Subbase Material | | |
| | | |
| Dock Landing Construction | | |
| | | |
| SITE RESTORATION WORKS | | |
| | | |
| OTHERS | | |
| | | |

FORM K: EQUIPMENT
(See D13)

LYNDALE DRIVE EROSION PROTECTION AND PATHWAY UPGRADES - HIGHFIELD ST TO
BIRCHDALE AVE

| |
|--|
| 1. Category/type: Riprap Excavation, Placement and On-Site Handling/Hauling Equipment |
| Make/Model/Year: _____ Serial No.: _____ |
| Registered owner: _____ |
| Make/Model/Year: _____ Serial No.: _____ |
| Registered owner: _____ |
| Make/Model/Year: _____ Serial No.: _____ |
| Registered owner: _____ |

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 their 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 B6. 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 B6.
- E1.4 The following are applicable to the Work:

| <u>Drawing No.</u> | <u>Drawing Name/Title</u> | <u>Drawing (Original) Sheet Size</u> |
|------------------------|--|--|
| 815-2022_Drawing_00_R0 | Cover Sheet and Location Plan | A1 |
| 815-2022_Drawing_01_R0 | Existing Conditions - Plan View | A1 |
| 815-2022_Drawing_02_R0 | Erosion Protection - Plan View | A1 |
| 815-2022_Drawing_03_R0 | Erosion Protection - Sections | A1 |
| 815-2022_Drawing_04_R0 | Pathway and Park Space Upgrades - Overall Plan | A1 |
| 815-2022_Drawing_05_R0 | Pathway Upgrades - Larchwood Place and Cedar Place Grading Plan | A1 |
| 815-2022_Drawing_06_R0 | Riverbank Pathway and Dock Landing Grading Plan | A1 |
| 815-2022_Drawing_07_R0 | River Access, Larchwood Path & Cedar Path Materials & Planting Plan | A1 |
| 815-2022_Drawing_08_R0 | North Access Point Planting Plan & Dock Landing Plan & Details Cable | A1 |
| 815-2022_Drawing_09_R0 | Concrete Mats Plan & Details | A1 |
| 815-2022_Drawing_10_R0 | Details | A1 |

E2. BACKGROUND REPORTS

- E2.1 Further to C3.1, test hole logs, and a hydrologic / hydraulic report is provided to aid the Contractor's evaluation of the existing soil conditions and river hydraulics. The information is contained in Appendix 'A'.

E3. WATERWAY PERMIT

- E3.1 All Works fall within 107 metres of the regulated summer water level of the Red River and therefore, a Waterways Permit is required. The Contract Administrator will obtain the required Waterway Permits for the Work detailed herein. The Contractor shall make themselves aware of and adhere to all conditions imposed by the permit.

E3.2 Under no circumstances will stockpiling of any material be permitted within 107 metres of the regulated summer water level of the Red River without the approval of the Contract Administrator.

E4. MOBILIZATION AND DEMOBILIZATION

E4.1 Description

E4.1.1 This Specification shall cover all operations relating to the mobilization and demobilization of the contractor to the site, as specified herein

E4.1.2 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.

E4.2 Materials

E4.2.1 The Contractor shall be responsible for the supply, safe storage and handling of all materials as set forth in this specification.

E4.3 Construction Methods

E4.3.1 The Contractor shall obtain written permission from private property owners for any use of private property. A copy of written permission shall be provided to the Contract Administrator prior to use of the property in question.

E4.3.2 The Contractor's Site supervisor is required to carry at all times a cellular telephone, with voice mail.

E4.3.3 This section also includes travel and accommodation, set-up and demobilization of site offices, storage conveniences and other temporary facilities, construction plant, and other items not required to form part of the permanent works and not covered by other prices.

E4.4 Measurement and Payment

E4.4.1 Mobilization and demobilization will be paid for on a Lump Sum basis under "Mobilization and Demobilization," which price will 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.

E4.4.2 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 Contract Administrator is satisfied that construction has commenced;
- (b) 40% when Substantial Performance has been met;
- (c) 10% when Total Performance has been met.

E5. OFFICE FACILITIES

E5.1 The Contractor shall supply office facilities meeting the following requirements:

- (a) The field office shall be for the exclusive use of the Contract Administrator.
- (b) The building shall be conveniently located near the site of the Work.
- (c) The building shall have a minimum floor area of 20 square metres, a height of 2.4 m with two windows for cross ventilation and a door entrance with a suitable lock.
- (d) The building shall be suitable for all weather use. It shall be equipped with an electric heater and air conditioner so that the room temperature can be maintained between either 16-18°C or 24-25°C.

- (e) The building shall be adequately lighted with fluorescent fixtures and have a minimum of three wall outlets. .
- (f) The building shall be furnished with one desk, table 3m x 1.2m, one four drawer legal size filing cabinet and a minimum of 8 chairs.
- (g) A portable toilet shall be located near the field office building. The toilet shall have a locking door and be for the exclusive use of the Contract Administrator and other personnel from the City.
- (h) The field office building and the portable toilet shall be cleaned on a weekly basis immediately prior to each site meeting. The Contract Administrator may request additional cleaning when he/she deems it necessary. The Contractor shall be responsible for all installation and removal costs, all operating costs, and the general maintenance of the office facilities.

E5.2 The Contractor shall be responsible for all installation and removal costs, all operating costs, and the general maintenance of the office facilities.

E5.3 The office facilities will be provided from the date of the commencement of the Work to the date of Substantial Performance.

E5.4 On a one time basis, where directed by the Contract Administrator, the Contractor shall relocate the office facilities to a location more convenient for the remaining Work.

E6. PROTECTION OF RIVERBANK INSTRUMENTATION

E6.1 The Contractor is advised that geotechnical instrumentation is present at the locations shown on the Drawings. During the course of the Work, the Contract Administrator may have additional instrumentation installed to monitor riverbank performance.

E6.2 The Contractor shall take necessary precautions to prevent damage to the existing or any newly installed geotechnical instrumentation as a result of their Work.

E6.3 The Contractor shall facilitate any work by others necessary to modify existing instrumentation, to maintain operation of the instrumentation or to install new instrumentation.

E6.4 The Contractor shall repair or replace instrumentation damaged as a result of their Work at no cost to the City, including fees for supervision of instrumentation installation by the Contract Administrator.

E6.5 The Contractor is advised that monitoring of geotechnical instrumentation will be undertaken by the Contract Administrator during construction. Every effort will be made to schedule monitoring to avoid interruptions of the Contractor's work activities, however it may be necessary to temporarily suspend operation of equipment to reduce ground vibrations during monitoring.

E6.6 Measurement and Payment

- (a) Protection of riverbank instrumentation shall be considered incidental to Mobilization and Demobilization and no additional measurement payments will be made for work described in this specification.

E7. TRAFFIC CONTROL

E7.1 Further to clauses 3.6, 3.7 and 3.8 of CW 1130:

- (a) Where directed by the Contract Administrator, the Contractor shall construct and maintain temporary asphalt ramps to alleviate vertical pavement obstructions such as manholes and planing drop-offs to the satisfaction of the Contract Administrator. Payment shall be in accordance with CW3410.
- (b) 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, the Contract Drawings, Staging Plans and Traffic Management Plans 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.

- (c) In addition, the Contractor shall be responsible for removing, placing and maintaining all regulatory signing including but not limited to:
 - (i) Parking restrictions;
 - (ii) Stopping restrictions;
 - (iii) Turn restrictions;
 - (iv) Diamond lane removal;
 - (v) Full or directional closures on a Regional Street;
 - (vi) Traffic routed across a median;
 - (vii) 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.
- (d) The Contractor shall remove and stockpile any regulatory signage not required during construction such as, but not limited to, parking restrictions, turn restrictions and loading restrictions.

E7.2 Further to E7.1(c), the Contractor shall make arrangement with the Contract Administrator to supply regulatory signs as required.

E7.3 Upon request from the Contract Administrator, the Contractor shall provide records demonstrating that the site has been maintained.

E7.4 Further to E7.1(c) and E7.1(d) the Contractor shall make arrangements with the Traffic Services Branch of the City of Winnipeg to reinstall the permanent regulatory signs after the Contract Work is complete. The Contractor shall make arrangements to drop off the stockpiled materials to Traffic Services at 495 Archibald Street.

E7.5 Any changes to the approved Traffic Management Plan must be submitted to the Contract Administrator a minimum of five (5) Working Days prior to the required change for approval.

E7.6 If the Contract Administrator determines that the Contractor is not performing Traffic Control in accordance with this specification, Traffic Services may be engaged to perform the Traffic Control. In this event the Contractor shall bear costs charged to the project by the Traffic Services Branch of the City of Winnipeg in connection with the required Works.

E8. TRAFFIC MANAGEMENT

E8.1 Further to clause 3.7 of CW 1130:

- (a) No long-term storage of equipment or materials will be permitted on Lyndale Drive. Haul truck staging may occur on Lyndale Drive.
- (b) Any lane closures or parking bans shall be subject to review and approval by the Contract Administrator and the City of Winnipeg Traffic Services Branch.
- (c) Should the contractor be unable to maintain pedestrian or vehicular access to a residence or business, they shall review the planned disruption with the business or residence and the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 24 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.
- (d) Pedestrian and ambulance/emergency vehicle access shall be maintained at all times.
- (e) Flag persons shall be provided as necessary to maintain the flow of traffic during certain work operations.

E8.1.1 Should the Contractor be unable to maintain an existing access to a residence or business, he/she shall review the planned disruption with the business or residence and the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 24 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.

E8.1.2 Pedestrian and ambulance/emergency vehicle access must be maintained at all times.

E9. REFUSE AND RECYCLING COLLECTION

E9.1 Access to refuse and/or recycling collection vehicles shall be maintained at all times.

E9.2 Collection Schedule for Lyndale Drive is Tuesday (A).

E9.3 No measurement or payment will be made for the work associated with this specification.

E10. PEDESTRIAN SAFETY

E10.1 During the project, the following measures shall be implemented by the Contractor:

- (a) Close the gravel pathways within Lyndale Drive Park between the east edge of Balsam Place and the west edge of Birchdale Avenue, only during periods where construction activities present a hazard to pathway users.
- (b) Close the asphalt pathway along Lyndale Drive at the west edge of Lawndale Avenue.
- (c) Sign the pathway "Sidewalk Closed" with reflectorized light barricades.
- (d) Place continuous reflectorized light barricades or security fencing along the back of curb of Lyndale Drive between Birchdale Avenue and Lawndale Avenue. This closure may remain in place from commencement until the first Critical Stage, but shall be removed during periods of non-working time thereafter.

E10.2 Install and maintain a temporary snow fence around any excavations, steep drop-offs, broken river ice / open water areas, access ramps or other conditions hazardous to pedestrians. Signage shall be installed on the river ice as required to notify recreational vehicles (e.g. snowmobiles) of safety hazards such as obstructions, drop-offs or open water.

E10.3 Place a fence and appropriate signs as required for pedestrian safety during non- working hours to discourage public access to the Site.

E10.4 No measurement for payment shall be made for this work.

E11. WATER OBTAINED FROM THE CITY

E11.1 Further to clause 3.7 of CW 1120, the Contractor shall pay for all costs, including sewer charges, associated with obtaining water from the City in accordance with the Waterworks and Sewer By-laws.

E12. SURFACE RESTORATIONS

E12.1 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.

E13. SITE DEVELOPMENT

E13.1 Description

E13.1.1 This Specification shall cover the following Site development items:

- (a) Construction of temporary access ramps and site haul roads to undertake riverbank erosion protection works.
- (b) Removal of existing trees and shrubs necessary for temporary access
- (c) Removal of temporary access ramps and bank reshaping prior to the spring freshet.
- (d) Restoration of all areas disturbed by temporary access, staging and laydown.

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 other things necessary for and incidental to the satisfactory performance and completion of all Work hereinafter specified.

E13.2 Submittals

E13.2.1 Site Access Plan

- (a) At least five (5) days prior to commencement of construction, submit a Site Access Plan for acceptance by the Contract Administrator to facilitate installation of riverbank erosion protection works (rock riprap). The Site Access Plan shall be sufficient to satisfy the Contract Administrator that the proposed access ramps and any site haul roads will be in accordance with this Specification and will not adversely impact riverbank stability for the duration of the project. Acceptance of the Site Access Plan shall not diminish the Contractor's responsibility for development and maintenance of site access, and adherence to the conditions of the City of Winnipeg Waterway Permit.
- (b) The Site Access Plan shall include a plan view layout, typical cross-section(s), and sequencing of any access ramps from the top of the bank area to the lower riverbank and any hauling roads at the Site. Cuts and fills shall also be clearly shown in plan and cross-section. All access ramps and haul roads shall be removed prior to the spring.
- (c) As the work proceeds, provide any changes to the Site Access Plan to the Contract Administrator for review and acceptance prior to modifying the access works.
- (d) The Site Access Plan shall demonstrate that all ramps shall be constructed by a net cut above the normal summer river level, and a net fill below the normal summer river level. Normal summer river level is defined as the elevation contour 223.7 m. Should the Contractor's proposed Site Access Plan fail to satisfy these requirements, the Contractor shall, at no cost to the City, retain a Geotechnical Engineer to prepare and submit a sealed shop drawing demonstrating that no adverse impacts to bank stability will result from the proposed Site Access Plan.

E13.2.2 Waterways Permit for Temporary Access Works

- (a) Temporary access ramps conforming with this specification will be included in the Work covered under the Waterway Permit application for the Project. Any modifications to the limits or grades proposed by the Contractor may require an application for a new or amended permit. Contact Kendall Thiessen, Ph. D., P.Eng., Riverbank Management Engineer, at 986-5159 for information regarding Waterways Permits.
- (b) Other than the original Waterway Permit for the Project paid for by the City of Winnipeg described in E13.2.2(a), the Contractor is responsible for obtaining and paying for all required permits and permissions that are necessary for Site Development, including any additional or amended Waterways Permits from the City of Winnipeg. The Contractor shall include sufficient time for obtaining such permits in their detailed schedule as per D14.

E13.3 Materials

E13.3.1 Fill Material

- (a) The Contractor shall be responsible for supplying imported clean fill or granular materials, or other materials that the Contractor may deem suitable for its operations, for construction and maintenance of access ramps and haul roads. Any native soil excavated to offset imported fill materials shall be hauled and disposed off-site immediately.
- (b) Rock riprap used for lower bank haul roads may be accepted by the Contract Administrator for re-use, if the materials satisfy the specifications for riprap as per E17.

E13.4 Construction Methods

E13.4.1 Site Access Development

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, removal of existing trees and shrubs, 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.

- (a) Unless otherwise determined by the Contractor's Geotechnical Engineer, all temporary access ramps shall be cut into the existing bank above the normal summer river level. Placement of fill below the normal summer river level is permitted, as accepted by the Contract Administrator. Fill placement in the lower bank shall not result in sedimentation of any watercourse.
- (b) The Contractor's Site access routes shall minimize tree removal. Pre-approved tree removals are shown on the Drawings. Any required tree removals shall be performed in accordance with E13.4.3. Tree removals proposed by the Contractor shall be identified in the Site Access Plan for prior approval by the Engineer and the City's Forester.

E13.4.2 Protection of Existing Infrastructure

The Contractor shall be responsible for protection of existing infrastructure at the Site including above ground and buried infrastructure.

- (a) The Contractor is responsible to obtain any required utility clearances prior to commencement of the Works. Any damaged infrastructure shall be repaired at the Contractor's expense.
- (b) The Contractor is advised that no equipment crossing of or material stockpiling on top of the existing land drainage facilities at Highfield Street shall be permitted.

E13.4.3 Vegetation and Debris Removal

- (a) Existing vegetation shall not be removed without prior approval from the Contract Administrator. The Contractor shall load and haul off-site any removed vegetation and existing debris including deadfall and material deposited by the river. Stockpiling of vegetation or debris is not permitted, except as approved by the Contract Administrator.
- (b) Remove trees and shrubs as specified on the Drawings and immediately dispose of off-site.
- (c) Tree stumps will be removed and/or ground out to a depth of 150 mm below the final grade or pathway subgrade including all surface roots. Immediately after grinding each stump, the grindings must be removed from the work area.

E13.4.4 Snow Removal

- (a) Snow cover shall be cleared from the riverbank work areas and may be stockpiled on top of existing riprap above the winter ice level. All snow clearing and stockpile locations shall be subject to the acceptance of the Contract Administrator. Snow cleared from the upper bank areas shall be removed off-site or stockpiled at locations approved by the Contract Administrator.

E13.4.5 Safety Fence

- (a) Erect and maintain a safety fence for the duration of the project, to restrict access to the Site. The fence shall prevent public access to hazardous areas of work (e.g., staging areas, temporary access locations). Appropriate signs shall be erected to warn all recreational users of the site that a hazard exists. Fence construction on the riverbank shall consist of orange plastic safety fence with a minimum height of 1.2 metres supported by posts driven into the ground. The wood posts shall be sized and capable of maintaining the safety fence upright, regardless of conditions. Upon completion of the work, all fence materials shall be removed and disposed off-site.
- E13.4.6 Posts used to support any fencing or barriers on the river ice shall either be self supporting structures and placed on the surface of the ice, or be un-treated wood if embedded into the ice
- E13.4.7 Stockpiling
- (a) The rate at which materials are delivered to the Site shall be controlled to minimize stockpiling and handling.
- (b) All stockpile locations shall be subject to prior approval by the Contract Administrator.
- (c) Stockpiled material shall be handled and maintained in a manner that prevents contamination with other soils and materials, debris, and snow. Contaminated material shall be removed and replaced at the Contractor's expense.
- (d) Prevent release of fine grain sediments into the river.
- E13.4.8 Site Access Restoration
- (a) Remove temporary access upon completion of riverbank erosion protection works by reshaping to the original (pre-construction) riverbank grades shown on the Drawings.
- (b) Prior to Total Performance, restore all riverbank areas disturbed by temporary construction access, staging and laydown to original (pre-construction) conditions.
- E13.5 Measurement and Payment
- E13.5.1 Constructing, maintaining, removal and restoration of the temporary access ramps, haul roads, staging and laydown areas shall not be measured. This item of work shall be paid for at the Contract Lump Sum Price for "Site Development", which price shall be payment in full for supplying all materials and performing all operations herein described and all of the items incidental to the work included in this Specification and accepted by the Contract Administrator.
- E13.5.2 Site Development will be paid for at a percentage of the Contract Lump Sum Price for "Site Development", specified as follows:
- (a) 40% when the Contract Administrator is satisfied that site development is complete for the commencement of riverbank erosion protection works;
- (b) 30% when the Critical Stage has been met;
- (c) 30% when Substantial Performance has been met.

E14. PROTECTION OF EXISTING TREES

E14.1 Description

- (a) This Specification shall cover all operations relating to the protection of existing riverbank and boulevard trees during construction.
- (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 other things necessary for and incidental to the satisfactory performance and completion of all Work hereinafter specified.

E14.2 Construction Methods

E14.2.1 General

- (b) Field-verify the presumed limits of work indicated on the Drawings, and flag all trees that require pruning or removal to facilitate the Work, subject to the Contract Administrator's approval. Overhanging branches in the work zone shall only be pruned if they interfere with the Work. No trees may be removed or pruned without written approval from the Contract Administrator.
- (c) Trees within or adjacent to a construction area that are not approved for removal by the Contract Administrator must be protected during construction by means of a barrier surrounding a "Tree Protection Zone" (TPZ) as outlined in this specification.
- (d) Activities which are likely to injure or destroy the tree are not permitted within the TPZ.
- (e) Tree pruning or root pruning of City of Winnipeg owned trees may only be done by a Contractor approved by the project's certified arborist or Urban Forestry Branch.
- (f) No objects may be attached to trees protected by City of Winnipeg by-laws without written authorization by the City of Winnipeg.
- (g) No City of Winnipeg tree or tree protected by a City of Winnipeg by-law may be removed without the written permission of the City of Winnipeg.
- (h) Tree Protection Zone
- (i) Table 1 shows the minimum distance for determining a Tree Protection Zone (TPZ). Minimum protection distances are to be measured from the outside edge of the tree base toward the drip line, and may be limited by an existing paved surface, provided that surface remains intact through the construction period.
- (j) Some site conditions may dictate the need for a smaller TPZ. The City of Winnipeg Urban Forestry Branch must be notified in these instances to determine if a smaller TPZ is acceptable in the specific circumstance and advise of any additional tree protection or removal requirements.

Table 1 – Tree Protection Zones

| Trunk Diameter at Breast Ht. (DBH) | Minimum Protection Distance Required |
|---------------------------------------|---|
| <10 cm | 2.0m |
| 11-40cm | 2.4m |
| 41-50cm | 3.0m |
| 51-60cm | 3.6m |
| 61-70cm | 4.2m |
| 71-80cm | 4.8m |
| 81-90cm | 5.4m |
| 91-100cm+ | 6.0m |

E14.2.2 Tree Protection Barriers

- (a) Tree protection barriers shall be erected around trees to be protected to keep crowns and branching structure clear from contact by equipment, materials, and activities; to preserve roots and soil condition in an intact and non-compacted state; and to identify the Tree Protection Zone in which no soil disturbance is permitted and activities are restricted, unless otherwise approved by the Contract Administrator.
- (b) The required barrier is a 1.2 m high orange plastic web snow fencing on 50 mm x 100 mm frame or as directed by the City of Winnipeg Urban Forestry Branch in accordance with the City of Winnipeg Protection of Existing Tree Specifications. The barrier can be lowered around branches lower than 1.2 m. The barrier location can be adjusted to align with curbs and edges at clear path of travel zones.
- (c) Tree strapping material shall be installed on individual trees, in accordance with CW1140, where Work will be completed within the TPZ.
- (d) Tree protection barriers shall be erected prior to the commencement of any construction or grading activities on the site and are to remain in place throughout the entire duration of any adjacent work. The Contractor shall notify the City of Winnipeg prior to commencing any construction activities to confirm that the tree protection

barriers are in place. Tree protection barriers shall be removed prior to the spring freshet and re-established in areas of future adjacent work following recession of high river levels.

- (e) All supports and bracing used to safely secure the barrier shall be located outside the TPZ and shall minimize damage to roots.
- (f) No grade change, storage of materials or equipment is permitted within the Tree Protection Zone. The tree protection barrier must not be removed without the written authorization of the City of Winnipeg.

E14.2.3 The Contractor shall take the following precautionary steps to prevent damage to existing trees:

- (a) Material shall not be stockpiled or vehicle and equipment parked on boulevards within 2 metres of trees.
- (b) Where authorized, operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the Work. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
- (c) Take precautions to ensure tree limbs overhanging the Site are not damaged by construction equipment. Contact the Forestry Branch for consultation on pruning of overhanging or damaged limbs and branches and other unanticipated problems with trees during construction of the Works.

E14.2.4 Root Protection, Cutting and Care

- (a) Avoid cutting roots. If root cutting appears to be necessary, obtain approval from the Contract Administrator before proceeding. If required and approved, root pruning must be performed under the direction of the Forestry Branch.
- (b) Cut roots cleanly with sharp, sterilized hand tools to promote quick wound closure and regeneration.
- (c) Minimize damage by avoiding excavation during hot, dry weather.
- (d) Keep protected plants well watered before and after digging.
- (e) Cover exposed roots with approved temporary root cover material such as soil, mulch, or damp burlap immediately after exposure. Temporary root covers shall be kept damp as long as they are in place.

E14.2.5 American elm trees are not to be pruned between April 1st and August 1st and Siberian elm trees between April 1st and July 1st of any year under provisions of The Dutch Elm Disease Act.

E14.2.6 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the Forestry Branch. Damages must be repaired by an individual with a Manitoba Arborist licence or by the Forestry Branch.

E14.2.7 The Forestry Branch will remove and replace any trees deemed to have died or that are dying due to damage from carelessness during construction. Removal and compensation costs will be determined by size, market price of the largest transplantable tree of same or different species and may include appraised value of existing tree as determined by current International Society of Arboriculture evaluation procedure presently used by Forestry Branch in conjunction with City Claims Branch. Estimated compensation of a 250mm and 600mm diameter American elm on a boulevard will be approximately \$4,700.00 and \$27,000.00 respectively.

E14.3 Measurement and Payment

- (a) Tree protection shall be considered incidental to Site Development and no additional measurement payments will be made for work described in this specification.
- (b) Forestry compensation arising from damage or destruction of trees that are not approved for removal will be assessed by the Forestry Branch and shall be deducted from the Contractor's progress claims.

E15. PRUNING OF EXISTING TREES

E15.1 Description

- (a) Provide all labour, materials, methods, equipment and accessories for pruning of existing trees within the limit of Work.

E15.2 Quality Assurance

- (a) Pruning shall be provided by a person with a Manitoba Arborists Certificate with demonstrable experience sourcing and Work.
- (b) Contact the City of Winnipeg Forestry Branch at 204-986-2004 to arrange an on site meeting to review trees to be pruned. Meeting to include the Contract Administrator.

E15.3 Pruning Methodology

- (a) Prune as required to remove dead, broken or damaged limbs.
- (b) Prune back to healthy growth while maintaining balanced crown shape.
- (c) Employ clean sharp tools.
- (d) Make cuts smooth and flush with outer edge of branch collar near the main stem or branch.
- (e) Cuts must be smooth and sloping to prevent accumulation of water on cut.
- (f) Do not leave little stumps ("horns") on trunks or main branches.
- (g) Prune according to accepted horticultural practices as outline in "The Pruning Manual", Publication No. 1505-1977 by Agriculture Canada.

E15.4 Measurement and Payment

Tree Pruning will be considered incidental to Site Development and no additional measurement or payment will be made for work described in this specification.

E16. EROSION AND SEDIMENT CONTROL

- E16.1 This Specification covers the supply, implementation and maintenance of erosion control measures during construction to control the release of sediments into the river during and following construction.
- E16.2 The Work to be done 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.
- E16.3 Erosion and sediment control measures shall be established and maintained until vegetation has been established. Erosion and sediment control measures shall be installed at all temporary construction ramp locations, the riverbank path and landing location, and other locations where natural vegetation has been stripped or where fill or topsoil has been placed.
- E16.4 **Materials**
- Maintain a supply of erosion control products such as erosion control blankets, silt fencing, straw bales or mulch on Site at all times suitable for trapping and preventing sediments from entering the river during construction.
- E16.5 **Construction Methods**
- (a) Plan and carry out all Work in a manner that will mitigate the potential for the release of sediments into the river.
 - (b) Install erosion control products in accordance with manufacturer's recommendations
 - (c) Sediment control measures shall satisfy the applicable requirements of Fisheries and Oceans Canada.
 - (d) Monitor the Work and implement appropriate sediment control measures as Site conditions warrant. Such measures may include installation of silt fences, straw bales, straw wattles, or other measures as required in the event that there is runoff from the Site.
 - (e) All erosion control products to be left in place following Total Performance or during the spring freshet shall be composed of organic and biodegradable materials. All inorganic and non-biodegradable erosion control products shall be removed.
 - (f) Upon completion of the construction Work, remove from site all surplus or waste materials, and materials containing fine-grained sediments.
- E16.6 **Measurement and Payment**
- No separate measurement or payment shall be made for erosion control measures supplied, installed and maintained under this Specification. This Work shall be incidental to "Site Development".

E17. RIPRAP

- E17.1 **Description**
- (a) These Specifications govern all operations necessary for and pertaining to the supplying and placing of approved riprap as a protective covering along the side slopes and bases of river channels, or such other places as may be indicated on the plans or designated by the Contract Administrator in the field.
 - (b) This specification shall amend and supplement Specification No. CW 3615.
- E17.2 **Submittals**
- (a) The Contractor shall submit the proposed supplier(s) and location of quarry sites at least ten (10) business days prior to the supply of riprap to the Site, to confirm that sufficient quantity of specified rock is available.

- (b) The Contractor shall arrange for a visit by the Contract Administrator to the proposed quarry Site(s) for inspection of the proposed riprap material and quarry faces a minimum of fourteen (14) days prior to supply and placement of riprap from each proposed quarry.
- (c) The Contractor shall supply representative test results at least ten (10) business days prior to the supply of riprap to the Site, demonstrating that the material to be supplied is of adequate quality and gradation to satisfy the material specifications contained herein. Smaller size material as required for specific tests will be considered representative of the quarried riprap.

E17.3 Materials

E17.3.1 Rock Riprap

- (a) The material used for the riprap shall be 450 mm down quarried rock manufactured from sound durable limestone or dolomite meeting the following properties:
 - (i) minimum bulk specific gravity of 2.6 (ASTM C127),
 - (ii) maximum Los Angeles abrasion loss of 32% (ASTM C131),
 - (iii) maximum soundness loss of 13% (ASTM C88)
 - (iv) maximum absorption of 2.5% (ASTM C127),
 - (v) gradation requirements, as follows:
- (b) The riprap shall be well graded having a full range and even distribution of sizes and shall conform to the following gradation:

GRADATION REQUIREMENTS FOR RIPRAP

| Diameter (mm) | Percent Passing by dry weight |
|------------------|----------------------------------|
| 450 | 100% |
| 300 | 40-70% |
| 100 | 25-50% |
| 5 | 0-5% |

- (c) Individual particles shall be shaped such that no dimension is greater than four times the smallest dimension. Flat, elongated, or platy particle shapes will not be accepted.
- (d) The diameter shall be taken as the average of the shortest and longest dimension measured on an individual piece of riprap.
- (e) Riprap shall be free from sod, roots, organic material and debris prior to placement. Individual pieces of riprap shall be free of defects such as seams or cracks that would cause rapid or excessive deterioration or degradation.
- (f) Contractors supplying riprap shall be responsible for demonstrating that the material is of adequate quality, gradation, and volume to meet the material specifications contained herein.
- (g) All materials set forth in this Specification shall be subject to inspection and testing by the Contract Administrator or by the testing laboratory designated by the Contract Administrator.
- (h) No supply and placement of riprap will be permitted prior to the Contract Administrator approving the source.

E17.3.2 Geotextile

- (a) Geotextile for riprap installation shall consist of a separation/filtration geotextile fabric in accordance with CW 3130.

E17.4 Construction Methods

- (a) Prior to placement, the riverbank shall be sub-excavated as required to achieve the lines and grades on the Drawings for the finished riprap surface.
- (b) The subgrade shall be prepared in accordance with CW 3130 and covered in a heavy-duty non-woven geotextile. The geotextile shall be installed with joints overlapping a minimum of 600 mm in a shingle pattern in both the direction of surface flow (upslope/downslope direction) and the direction of river flow (upstream/downstream). The geotextile shall be anchored in accordance with manufacturer's recommendations or CW 3130 (whichever is more strict).
- (c) The riprap shall be dumped or placed in such a manner that the larger particles are uniformly distributed, the smaller particles serve to fill the spaces between the larger particles, and that excessive segregation of the various particle sizes does not occur. Riprap shall not be dumped directly onto geotextile, to prevent punching or tearing of geotextile fabric; in this regard, riprap shall be dumped on adjacent riprap and pushed onto exposed geotextile fabric.
- (d) The riprap shall be placed to the grades and lines shown on the Drawings. Sufficient placing and leveling of riprap shall be done to produce a firmly bedded neat and uniform surface conforming to the thickness, shape, and dimensions shown on the plans.
- (e) The Contractor is advised that it may be necessary to break ice to place the riprap to the dimensions shown on the drawings. In this case, the Contractor shall obtain a Frozen Waterway Permit to undertake the work. The permit is available through the City of Winnipeg Zoning and Permits Office at 204-986-5140. In particular, vehicular traffic on the ice surface is prohibited without this permit. The Contractor is required to supply and install the appropriate safety fences and signage for open water and thin ice conditions.
- (f) The winter river level shown on the drawings is based on typical conditions. The Contractor is advised that these levels can vary above and below the level indicated.

E17.5 Measurement and Payment

- (a) Supply and placement of riprap will be measured on a weight basis. Riprap will be paid at the contract unit price per tonne for "Supply and Place Riprap" for the total number of tonnes measured by truck weight scale tickets, supplied and placed as accepted by the Contract Administrator.
- (b) The Contractor is to supply all truck weight scale tickets to the Contract Administrator by the end of each work day.
- (c) Sub-excavation and disposal of excavated soil, shaping the riprap bed, supply and placement of geotextile, supplying, loading, hauling, and placing stone riprap shall be considered incidental to the Work.

E18. PATHWAY EMBANKMENT CONSTRUCTION

E18.1 Description

- (a) This Specification shall cover the excavation or fill placement required for pathway construction shown on the Drawings.
- (b) This Specification shall supplement the requirements of CW 3170.
- (c) 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 an incidental to the satisfactory performance and completion of all work hereinafter specified.

E18.2 Materials

- (a) Suitable fill required pathway embankments shall consist of clay fill material in accordance with CW 3170. 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.

E18.3 Construction Methods

E18.3.1 Embankment Grading

- (a) Embankment grading will be understood to mean excavation or backfilling (including compaction) so that the ground geometry is at rough finished grade, ready for pathway construction.
- (b) Embankment grading will be required for construction of fill embankments for the Cedar Place and Larchwood Place pathway connections to Lyndale Drive, and for the dock landing pathways near Birchdale Avenue.
- (c) Strip native topsoil from proposed subgrade areas of riverbank grading. Stockpile suitable topsoil materials for re-use, as approved by the Contract Administrator. Haul and dispose of unsuitable topsoil materials.
- (d) Grade riverbank and prepare the existing ground surface as shown on the Drawings or as directed by the Contract Administrator. Benching of existing ground shall be considered incidental to the Work. Stockpile suitable fill material for re-use, as approved by the Contract Administrator.
- (e) Place and compact suitable backfill material, either salvaged from on-site excavation or imported from an off-site source in accordance with CW 3170 to meet the final grade requirements.
- (f) Unsuitable fill material encountered shall be hauled off-site and disposed of in accordance with CW 3170.

E18.4 Measurement and Payment

E18.4.1 Measurement and payment shall be in accordance with CW 3170 with the following items of work:

- (a) Preparation of Existing Ground Surface
- (b) Topsoil Excavation
- (c) Common Excavation – Suitable Site Material
- (d) Common Excavation – Unsuitable Site Material
- (e) Supplying and Placing Imported Material
- (f) Placing Suitable Site Material

E19. PLANTING MEDIUM & FINISHED GRADING

E19.1 Description

- (a) Provide all labour, materials, methods, equipment and accessories for the supply and installation of planting medium in revegetation areas and tree pits.

E19.2 References

E19.2.1 Agriculture and Agri-Food Canada

- .1 The Canadian System of Soil Classification, Third Edition, 1998.

E19.2.2 Canadian Council of Ministers of the Environment (CCME) Guidelines.

E19.2.3 The City of Winnipeg Standard Construction Specifications

- .1 CW 1130 – Site Requirements
- .2 CW 3540 – Topsoil and Finish Grading for Establishment of Turf Areas

E19.3 Submittals

- (a) Submit 0.5kg sample of topsoil to National Testing Laboratory, or approved alternate, and indicate present use and intended use. Prepare and ship sample in accordance with Provincial regulations and testing laboratory requirements.
- (b) Submit two (2) copies of soil analysis and recommendations for corrections to Contract Administrator.

E19.4 Quality Assurance

- (a) Inform Contract Administrator of proposed source of materials to be supplied and provide a sample for review by Contract Administrator prior to installation.
- (b) Testing of planting medium to be carried out and paid for by Contractor. Prepare and ship planting medium samples to approved laboratory in accordance with Provincial regulations and laboratory requirements, indicating intended use on each sample.
- (c) Test planting medium for nutrients N, P, K, micronutrients, soluble salt content, pH value and OM (organic matter).
- (d) Acceptance of planting medium is subject to an inspection of material and confirmation of test results. Do not commence soft landscaping work until Contract Administrator has accepted planting medium.

E19.5 Delivery, Storage and Handling

- (a) Store materials in a dry area, protected from freezing, sedimentation and contamination.
- (b) Deliver and store fertilizer in waterproof bags labeled with weight, analysis and name of manufacturer.

E19.6 Materials

- (a) Planting Medium: In accordance with CW 3540 for topsoil except organic matter to be in the range of 5-10%.
- (b) Peatmoss: deliver from partially decomposed fibrous or cellular stems and leaves of species of sphagnum mosses. Elastic and homogeneous, brown in colour. Free of wood and deleterious material that could prohibit growth. Shredded particle minimum size: 5 mm.
- (c) Sand: hard fine silica sand, well washed and free of impurities, chemical or organic matter. Coarse texture, and to the following gradation:

| <u>Particle Size (mm)</u> | <u>% Passing through Screen</u> |
|---------------------------|---------------------------------|
| 2.0 | 100% |
| 1.0 | 95 to 100% |
| 0.5 | 80 to 100% |
| 0.25 | 0 to 30% |
| 0.15 | 0 to 8% |
| 0.075 | 0 to 1% |

- E19.6.2 Fertilizer: Synthetic start-up slow release fertilizer with a N-P-K analysis of 12-36-15 ratio at a rate of 4 kg per 100 m² which is 8 pounds per 100 sq ft.

E19.7 Construction Method

E19.7.1 Subsoil Preparation

- (a) Prior to placing topsoil in revegetation areas, scarify subsoil across the slope to a depth of 150 mm.

E19.7.2 Excavation

- (a) Excavate tree pits. Dispose of all rock, clay soils and other deleterious materials off Site.
- (b) Protect bottom of excavations against freezing.

- (c) Remove water that has entered the excavation prior to planting. Notify Contract Administrator if water source is groundwater.
- (d) Verify and obtain approval by Contract Administrator of tree planting beds prior to compacted soil mound and planting medium placement.

E19.7.3 Planting Medium Placement

- (a) Obtain approval of subsoil scarification and rough grading of revegetation areas prior to placing planting medium.
- (b) Place planting medium in uniform layers over unfrozen sub-grade, to the depth indicated on the Drawings.
- (c) Eliminate rough spots and low areas, Prepare a loose, friable bed, boot firm and level.

E19.7.4 Soil Amendments

- (a) Apply lime, sulphur, or other soil amendment at a rate determined and recommended from planting medium sample test.
- (b) Mix soil amendment well into full depth topsoil prior to application of fertilizer.

E19.7.5 Finished Grading

- (a) Per CW3540.
- (b) Fine grade entire soil area to elevations as indicated on the Drawings. Eliminate rough spots and low areas. Leave surfaces smooth, uniform and firm against foot printing with a fine loose texture.

E19.8 Surplus Material

Dispose of unused planting medium off Site in accordance with CW1130.

E19.9 Cleaning

Perform cleaning to remove accumulated environmental dirt from all paved surfaces of building faces. Remove surplus materials, rubbish, tools and equipment barriers.

E19.10 Measurement and Payment

- (a) Supply and placement of planting medium in tree wells will not be measured. This item of Work shall be considered incidental to the cost of "Supply and Installation of Trees" performed in accordance with this Specification and accepted by the Contract Administrator.
- (b) Supply and placement of planting medium in revegetation areas shall be measured on an area basis. Planting medium will be paid for at the Contract Unit Price per square metre for "Supply and Place Planting Medium in Revegetation Areas" for the total number of square metres measured and accepted by the Contract Administrator.
 - (i) The area measured and paid for "Supply and Place Planting Medium in Revegetation Areas" shall be the horizontal area measured in plan view
- (c) Finish grading and disposal of excess material shall be considered incidental to the Work.

E20. EROSION CONTROL BLANKET

E20.1 Description

E20.1.1 This Specification shall cover supply and installation of erosion control blankets on exposed soils on sloping areas of access ramps, and other areas disturbed during construction.

E20.1.2 The Work to be done 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.

E20.2 Materials

E20.2.1 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/100m of thread). The mesh dimension shall be a 16 x 16 mm sewn together on 38 mm centres.
- (d) Approved products are:
 - Erosion Control Blanket C32BD;
 - North American Green C125BN
- (e) The Contractor shall submit all manufacturers' product specifications and recommended installation methods for the proposed erosion control blankets.

E20.1 Construction Methods

E20.1.1 Erosion Control Blanket (ECB) shall be installed:

- (a) Over exposed, sloping, unvegetated areas of the riverbank following completion of temporary access removal on the riverbank and prior to rising river levels in the spring.
- (b) Over sloping areas of topsoil and seed placement, following completion of site restoration works.

E20.1.2 ECB Installation

- (a) The Contractor shall follow the manufacturer's recommended installation procedure, and/or the following supplemental requirements.
- (b) Roll blanket out in direction of river flow.
- (c) Securely fasten blanket against soil surface with a staggered staple pattern as per the 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 with a double row of staples, staggered 100 mm (maximum) apart.
- (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.

E20.1.3 ECB Maintenance

- (a) The areas covered with ECB shall be regularly inspected, and in particular after severe rainfall, or flooding events 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/repaired immediately. Regrading of the slope by manual labour methods may be required in the event of rill or gully erosion.

E20.2 Measurement and Payment

E20.2.1 Erosion Control Blanket

- (a) Erosion Control Blanket and related Work specified herein will be measured on an area basis and paid for at the Contract Unit Price for "Supply and Install Erosion Control Blanket", completed in accordance with this Specification, and as accepted by the Contract Administrator.

- (i) The area measured and paid for "Supply and Install Erosion Control Blanket" shall be the horizontal area measured in plan view.
- (a) Areas requiring replacement as directed by the Contract Administrator will be re-measured and additionally paid for at the Contract Unit Price for the Work item. The Contractor shall be compensated for replacing ECB only if the damage occurred as a result of conditions beyond their control, such as severe run-off, or from ice or floating debris. The Contractor shall not be compensated for replacing or repairing ECB damaged as a result of faulty materials, installation methods, or the Contractor's own operations.

E21. DOCK LANDING RETAINING WALL

E21.1 Description

E21.1.1 This Specification shall include the supply and placement of Durahold concrete blocks that form a confining edge for granular paving, including fastening plates and other supplies needed as indicated on the Drawings. The Durahold block platform system consists of multiple staggered rows, which includes an upper row of coping blocks and lower rows of regular standard blocks.

E21.1.2 The Work to be done by the Contractor shall include superintendence, labor, materials, and all other things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E21.2 Materials

E21.2.1 General

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

E21.2.2 Granular Base Course for Dock Landing Retaining Wall

- (a) Granular base course shall consist of crushed limestone Granular A Base Course in accordance with CW 3110.

E21.2.3 Durahold Concrete Blocks

- (a) Durahold blocks shall consist of Standard, coping, closed-end coping, ½ standard and corner 90 degree blocks.
- (b) Available from available from Unilock (1-800-864-5625) or approved equal.

E21.2.4 Steel Fastening Plates for Durahold Blocks

- (a) Fastening plates and anchors shall be supplied as per the specifications shown on the Drawings.

E21.2.5 Non-woven geotextile to CW 3130.

E21.3 Construction Methods

- (a) Excavate to the required subgrade elevation as per the lines and grades on the Drawings.
- (b) Compact the sub-grade to minimum 95% Standard Proctor Maximum Dry Density (SPMDD) at +/- 2% of optimum moisture content prior to placement of base course material. If soft spots or silty zones are encountered, soft materials shall be removed and replaced with granular sub-base, as directed by the Contract Administrator.
- (c) Place base course to the thicknesses shown on the Drawings and compact to 100% SPMDD using light hand-operated equipment.
- (d) Place geotextile as indicated on the drawings.
- (e) Durahold block installation shall follow manufacturer's specification. The installation of the Durahold blocks shall have the shape and dimensions as shown on the Drawings,

and final approval of the above will be provided by the Contract Administrator. All components shall be installed to within 0.05 m of the dimensions shown on the Drawings; minor field adjustments to the location and shape may be required and approval must be obtained by the Contract Administrator prior to construction.

- (f) Fasten plates to concrete blocks with cinch anchors as per manufacturer's recommendations at the locations shown on the Drawings.

E21.4 Quality Control

- (a) All workmanship under this Specification will be subject to inspection by the Contract Administrator, including all operations through the final acceptance of the specific Work. The Contractor shall be responsible for the control of all operations to complete the Work, except the inspections or approvals that have been previously given.
- (b) The Contract Administrator shall have full access for inspection and control of testing of materials at the Site to determine whether the materials are being selected and placed or Work being conducted in accordance with this Specification.

E21.5 Measurement and Payment

- E21.5.1 The supply and installation of the dock landing retaining wall will be measured on a lump sum basis and paid for at the Contract Lump Sum Price for "Dock Landing". Price shall be payment in full for supplying materials and for performing the Work in accordance with this specification, accepted and measured by the Contract Administrator.

E22. CABLE CONCRETE MATS

E22.1 Description

- E22.1.1 This Specification shall include the supply and installation of cable concrete mats at the dock landing location as indicated on the Drawings.
- E22.1.2 The mats shall be placed over a scarified surface and a thin bed of 19mm down crushed limestone that is hard compacted, followed by a nonwoven geotextile. A minimum 30 mm overlap at the seams of the geotextile is required and it shall be placed in an orientation consistent with the long edge extends into the river on the northeast axis. The first three rows and last two rows of the concrete mat system shall be keyed into 50 to 100mm dia. rocks as shown on the Drawings. The spacing between the blocks in the mats shall be filled with clean 10 to 20mm limestone.
- E22.1.3 The Work to be done by the Contractor shall include superintendence, labor, materials, and all other things necessary for and incidental to the satisfactory performance and completion of all Work as hereinafter specified.

E22.2 Materials

- E22.2.1 Geotextile for riprap installation shall consist of a separation/filtration geotextile fabric in accordance with CW 3130.
- E22.2.2 Granular Base Course for Cable Concrete Mats
 - (a) Granular base course shall consist of crushed limestone Granular A Base Course in accordance with CW 3110.
 - (b) Granular sub-base course shall consist of crushed limestone Granular A – 50 mm in accordance with CW 3110.
- E22.2.3 Cable Concrete Mat: Model #CC45 2.4m (8 ft) x 4.8m (16 ft) as distributed by Titan Environmental, or approved equal.

E22.3 Construction Methods

- E22.3.1 The Contractor shall follow the manufacturer's recommended installation procedure, and the following supplemental requirements.

- E22.3.2 Excavate to the required subgrade elevation to achieve a smooth, level surface as per the lines and grades on the Drawings. Any disturbed, loose or deleterious material at the subgrade shall be removed as directed by the Contract Administrator.
- E22.3.3 Place base course to the thicknesses shown on the Drawings and compact to 100% SPMDD.
- E22.3.4 Install separation/filtration geotextile fabric over the prepared subgrade as per the manufacturer's specifications.
- E22.3.5 Cable concrete mats shall be installed over the compacted base course and geotextile as shown on the Drawings.
- E22.3.6 Cable concrete mats shall be connected to adjoining mats per the manufacturer's specifications.
- E22.3.7 Cable concrete joints shall be infilled with granular base course and lightly compacted with hand operated equipment to fill all voids. Care should be taken to avoid damage to the cable concrete mats.
- E22.3.8 The supply and placement of the cable concrete mats and all other components shall have the shape and dimensions as shown on the drawings, and as specified by the manufacturer. Final approval of the above will be provided by the Contract Administrator. The mat locations shall be within 0.1 m of that shown on the Drawings; minor field adjustments to the location and shape may be required and approval must be obtained by the Contract Administrator prior to construction.
- E22.4 Quality Control
- E22.4.1 All workmanship and materials furnished and supplied under this Specification will be subject to inspection by the Contract Administrator, including all operations from the selection and production of materials through the final acceptance of the specific Work. The Contractor shall be responsible for the control of all operations to complete the Work, except the inspections or approvals that have been previously given.
- E22.4.2 The Contract Administrator shall have full access for inspection and control of testing of materials at the Site to determine whether the materials are being selected and placed or Work being conducted in accordance with this Specification.
- E22.5 Measurement and Payment
- E22.5.1 The supply and installation of cable concrete mats will be measured on a square metre basis and paid for at the Contract Lump Sum Price for "Supply and Install Cable Concrete Mats". Price shall be payment in full for supplying materials and for performing the Work in accordance with this specification, accepted and measured by the Contract Administrator.

E23. BOULDER RETAINING WALL

- E23.1 Provide all labour, materials, methods, equipment and accessories for the supply and install of boulder retaining wall.
- E23.2 References
- E23.2.1 The City of Winnipeg Standard Construction Specifications:
(a) CW 3110 – Sub-Grade, Sub-Base and Base Course Construction
(b) CW 3130 – Supply and Installation of Geotextile Fabrics
- E23.3 Submittals
- E23.3.1 Submit sample of boulder.
- E23.3.2 Submit testing results.

E23.4 Testing

E23.4.1 All materials set forth in this Specification shall be subject to inspection and testing by the Contract Administrator or by the testing laboratory designated by the Contract Administrator.

E23.5 Materials

E23.5.1 Boulders: round granite boulders grey / red salmon colour mix. Available from Reimer Soils ph. 204-237-6668, or approved equal.

E23.5.2 Granular Base: crushed limestone to CW 3110.

E23.5.3 Bedding sand to section 5.2.1 of Specification CW 3310.

E23.5.4 Weeping Tile: perforated plastic pipe and fitting to CAN/CSA B182.1. Size as indicated on the drawings with geotextile sock.

E23.5.5 Non-woven geotextile to CW 3130.

E23.6 Construction Methods

E23.6.1 Confirm locations and sizes of boulders with Contract Administrator prior to installation.

E23.6.2 Use equipment suited to the application. Do not damage adjacent structures, finishes, natural features, services or completed work. Contractor is responsible for making good all damage at no cost to City.

E23.6.3 Place granular base course and bedding sand in locations and to depths indicated on the Drawings.

E23.6.4 Place boulders into bedding sand. Ensure boulders are set on a stable side so it is fixed in place with no movement. Place boulders in a manner so as to have the most attractive side of the stone facing outward.

E23.6.5 Install weeping tile as indicated on the Drawings. Ensure weeping tile ends daylight and drain away without any pooling.

E23.7 Measurement and Payment

E23.7.1 The supply and installation of boulder retaining wall will be measured on Lump Sum basis and paid for at the Contract Lump Sum Price for "Boulder Retaining Wall". Price shall be payment in full for supplying materials and for performing the Work in accordance with this specification, accepted and measured by the Contract Administrator.

E24. PARK PATHWAY CRUSHED LIMESTONE

E24.1 Provide all labour, materials, methods, equipment and accessories for the supply and install of park pathway crushed limestone.

E24.2 References

E24.2.1 City of Winnipeg Standard Construction Specifications:

- (a) CW 3110 – Sub-Grade, Sub Base & Base Course Construction
- (b) CW 3130 – Supply and Installation of Geotextile Fabrics

E24.2.2 City of Winnipeg Standard Details:

- (a) SCD-646 – Park Pathway Crushed Limestone

E24.3 Testing

E24.3.1 All materials set forth in this Specification shall be subject to inspection and testing by the Contract Administrator or by the testing laboratory designated by the Contract Administrator.

E24.4 Materials

E24.4.1 Crushed limestone topping, crushed limestone base course, crushed limestone sub-base and compacted subgrade to CW 3110.

E24.4.2 Non-woven geotextile fabric to CW 3130.

E24.5 Construction Methods

E24.5.1 Excavate to the subgrade based on the lines and grades shown on the Drawings.

E24.5.2 Place non-woven geotextile and crushed limestone sub-base immediately after sub-grade is inspected and testing is approved by Contract Administrator. Construct sub-base to depths as indicated on SCD-646 and to the grades indicated on the Drawings, and compact to 98% of SPMDD.

E24.5.3 Place limestone base course immediately after sub-base is inspected and testing is approved by the Contract Administrator. Construct base course to depths as indicated on SCD-646 and to the grades indicated on the Drawings, and compact to 98% of SPMDD.

E24.5.4 Place limestone topping immediately after base course is inspected and testing is approved by the Contract Administrator. Construct topping to depths as indicated on SCD-646 and to the grades indicated on the Drawings, and compact to 95% of SPMDD.

E24.5.5 Begin spreading topping on down line or high side of cross slope. Place topping using methods which do not lead to segregation or degradation.

E24.5.6 Do not place frozen or excessively wet material. Do not place materials when daytime temperatures are below -5 °C. Place material only on clean unfrozen surface, free from snow and ice.

E24.5.7 For spreading and shaping of topping, use spreader boxes having adjustable templates or screens, which will place material in uniform layers of required thickness.

E24.5.8 Place limestone layers to full width in uniform layers not exceeding 150mm compacted thickness.

E24.5.9 Shape each layer to smooth contours and compact to specified density before succeeding layer is placed.

E24.5.10 Remove and replace any portion of each lift in which material becomes segregated during spreading and commence installation from a firm compacted surface.

E24.5.11 Compact each limestone layer to CW 3110. Add water as necessary between passes to achieve required compaction.

E24.5.12 Remove surplus material off site.

E24.6 Measurement and Payment

E24.6.1 The supply and installation of park pathway crushed limestone shall be paid for on a square metre basis each and paid for at the Contract Unit Price for "Park Pathway Crushed Limestone". Price shall be payment in full for supplying materials and for performing the Work in accordance with this specification, accepted and measured by the Contract Administrator.

E25. SODDING

E25.1 Description

E25.1.1 This specification shall amend and supplement City of Winnipeg Standard Construction Specification CW 3510 "Sodding", and covers all operations relating sod supply and installation, including preparation of finish grade, watering and rolling, and thirty (30) day maintenance.

E25.1.2 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.

E25.2 References

E25.2.1 City of Winnipeg Standard Construction Specifications:

- (a) CW 3510 - Sodding
- (b) CW 3540 – Topsoil and Finished Grading

E25.2.2 City of Winnipeg Standard Details:

- (a) SD-243 – Sodding Details

E25.3 Materials

E25.3.1 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 acceptance by the Contract Administrator.

E25.3.2 Turf Grass Sod

- (a) Turf grass sod shall conform to CW 3510.
- (b) Sod shall be a mixture of ninety-five percent (95%) Kentucky bluegrass, using equal proportions of any three (3) Class 2 cultivars, and five percent (5%) Creeping Red fescue.
- (c) Soil and fine grading shall conform to CW 3540 and E19 Planting Medium & Finish Grading Specification.

E25.4 Construction Methods

E25.4.1 Install 75mm depth topsoil and finished grading in accordance with CW 3540.

E25.4.2 Sod placement, watering, rolling and thirty (30) day maintenance in accordance with CW 3510 and SD-243.

E25.5 Measurement and Payment

E25.5.1 Turf Grass Sod will be measured on an area basis and paid for at the Contract Unit Price per square metre for “Sodding”. The area to be paid shall be the total square metre area in accordance with this specification, accepted and measured by the Contract Administrator.

- (a) No measurement or payment shall be provided for sod replacement in areas disturbed by temporary access, staging and laydown.

E26. TREE PLANTING

E26.1 Description

E26.1.1 Provide all labour, materials, methods, equipment and accessories for the supply and installation of trees.

E26.2 References

E26.2.1 Agriculture and Agri-Food Canada (AAFC)

- (a) Plant Hardiness Zones in Canada-2000.

E26.2.2 Canadian Nursery Landscape Association (CNLA)

- (a) Plant Canadian Standards for Nursery Stock-2001.

E26.2.3 Department of Justice Canada (JUS)

- (a) Plant Canadian Environmental Protection Act (CEPA), 1999, c. 33.
- (b) Transport of Dangerous Goods Act (TDGA), 1992, c.34.

E26.2.4 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

- (a) Materials Safety Data Sheets (MSDS).

E26.3 Submittals

E26.3.1 Submit product data for:

- (a) Fertilizer.

E26.4 Source Quality Control

E26.4.1 Obtain approval from Contract Administrator of plant material at source.

E26.4.2 Notify Contract Administrator of source of material at least seven (7) days in advance of shipment. No work under this Section is to proceed without approval.

E26.4.3 Acceptance of plant material at source does not prevent rejection on Site prior to or after planting operations.

E26.4.4 Plant material imported from other nations will not be accepted.

E26.4.5 Bare root plant material will not be accepted.

E26.5 Storage and Protection

E26.5.1 Coordinate the shipping of plants and excavation of holes to ensure minimum time lapse between digging and planting.

E26.5.2 Protect plant material from frost, excessive heat, wind and sun prior to delivery.

E26.5.3 Protect plant material from damage during transportation:

- (a) When delivery distance is less than 30 km and vehicle travels at speeds under 80 km/h, tie tarpaulins around plants or over vehicle box.
- (b) When delivery distance exceeds 30 km or vehicle travels at speeds over 80 km/h, use enclosed vehicle where practical.
- (c) Protect foliage and rootballs using anti-desiccants and tarpaulins, where use of enclosed vehicle is impractical due to size and weight of plant material.

E26.5.4 Protect stored plant material from frost, wind and sun as follows:

- (a) For pots and containers, maintain moisture level in containers.
- (b) For balled and burlapped and wire basket rootballs, place to protect branches from damage. Maintain moisture level in root zones.

E26.5.5 Remove broken and damaged roots with sharp pruning shears. Make clean cut and cover cuts over 20mm (3/4") diameter with wound dressing.

E26.5.6 Keep roots moist and protect from sun and wind. Heel-in trees that cannot be planted immediately in shaded areas and water well.

E26.6 Scheduling

E26.6.1 Order plant material as soon as possible after award of contract to ensure plant availability. Request substitutes as required.

E26.6.2 Provide Contract Administrator a written schedule fourteen (14) days in advance of shipment of plant material. Schedule to include: quantity and type of plant material, shipping dates, arrival dates on Site, and planting dates.

E26.7 Warranty of Nursery Stock

E26.7.1 For all plant material a warranty period of two (2) calendar years is required.

- E26.7.2 During the warranty period, upon written notification from the Contract Administrator, the Contractor warrants to replace and replant any nursery stock found dead and/or in poor condition as soon as possible thereafter, without cost to The City. "Poor Condition" shall be interpreted as meaning nursery stock on which branches are dead or dying or have not shown satisfactory growth in leaves. Exempted is nursery stock damaged by accidental causes or vandalism, if directed by the Contract Administrator, this stock shall be replaced at the cost of The City.
- E26.7.3 End-of-Warranty inspection will be conducted by Contract Administrator.
- E26.7.4 Contract Administrator reserves the right to extend Contractor's warranty responsibilities for an additional one (1) year if, at end of initial warranty period, leaf development and growth is not sufficient to ensure future survival.
- E26.8 Replacements
- E26.8.1 All required replacements shall be by plants of at least the same size and species as specified and shall be supplied and planted in accordance with the original Drawings and Specifications or applicable Site Instructions.
- E26.8.2 Should the replaced plant material not survive, the Contractor will be responsible to replace it a third time and guarantee it for a period equal to the original warranty period unless it is determined that unique Site conditions or inadequate maintenance causes the death of plants.
- E26.9 Materials
- E26.9.1 Plant Material
- (a) Type of root preparation, sizing, grading and quality: comply to Canadian Standards for Nursery Stock.
 - (b) Source of plant material: grown in Zone 3 only in accordance with Plant Hardiness Zones in Canada.
 - (c) Plant material must be planted in zone indicated as appropriate for its species.
 - (d) Plant material free of disease, insects, defects or injuries and structurally sound with strong fibrous root system.
 - (e) Substitutions to plant material as indicated on planting plan are not permitted unless written approval has been obtained as to type, variety and size. Plant substitutions must be of similar species and of equal size as those originally specified.
 - (f) Refer to Plant Specification List on the Drawings for species, quantities, size and quality of plant materials.
- E26.9.2 Water
- (a) Water free of impurities that would hinder plant growth. The Contractor shall provide water, so that all costs to provide water for the watering operation and all associated costs shall be borne by the Contractor. These costs may include hydrant permit and meter rental fees.
 - (b) Further to clause 3.7 of CW 1120, the Contractor shall pay for all costs associated with obtaining water in accordance with the Waterworks By-law. Sewer charges will not be assessed for water obtained from a hydrant.
- E26.9.3 Planting Medium to Planting Medium and Finished Grading specification.
- E26.9.4 Tree Tie: biodegradable or polyethylene fabric strapping min. 30mm wide.
- E26.9.5 Tree Stakes: 76mm dia. x 2440mm ht. wooden stakes.
- E26.9.6 Tree Protection: 914mm height 19 gauge galvanized hardware cloth, 12.7mm square openings.

E26.9.7 Fertilizer: synthetic start-up slow release fertilizer with a N-P-K analysis of 12-36-15 ratio at a rate of 4 kg per 100 m² which is 8 pounds per 100 sq ft.

E26.10 Construction Methods

E26.10.1 Planting Time and Workmanship

- (a) Plant only under conditions that are conducive to sustaining good health and physical condition of plants.
- (b) Provide planting schedule. Extended planting operations over a long period of time using a limited crew will not be accepted.

E26.10.2 Pre-Planting Preparation

- (a) Obtain approval from Contract Administrator of finish grading, and planting medium installation prior to commencing Work in this section.
- (b) Ensure plant material is acceptable to the Contract Administrator.
- (c) Remove damaged roots and branches from plant material with sharp clean equipment treating wounds as necessary to maintain plant health.
- (d) Apply anti-desiccant to deciduous trees in leaf in accordance with manufacturer's instructions.

E26.11 Plant Material Layout

E26.11.1 For individual trees:

- (a) Stake out locations of all trees and obtain approval from Contract Administrator prior to excavating tree pits.
- (b) Excavate tree pits to depths and widths indicated on the Drawings with a backhoe unless other methods are indicated or approved.
- (c) Remove rocks, roots, debris and toxic material from the tree pit.
- (d) Scarify sides of planting hole.
- (e) Protect excavations from freezing. Remove any water which enters the excavations prior to planting. Notify the Contract Administrator if water source is groundwater,
- (f) If the planting location contains a stump with a diameter less than 15cm it shall be removed.

E26.11.2 Planting

- (a) For jute burlap rootballs, cut away top one third of wrapping and wire basket without damaging rootball. Do not pull burlap or rope from under rootball.
- (b) For container stock or rootballs in non-degradable wrapping, remove entire container or wrapping without damaging rootball. Loosen rootball to encourage bonding with planting medium and subgrade.
- (c) Plant vertically in locations as indicated. Orient plant material to give best appearance in relation to structure, roads and walks.
- (d) Backfill soil in 150 mm (6") lifts. Tamp each lift to eliminate air pockets. When two thirds of depth of planting pit has been backfilled, fill remaining space with water. After water has penetrated into soil, backfill to finish grade.
- (e) Form watering saucer as indicated on the Drawings.
- (f) Water plant material thoroughly. Report persistent ponding in planting areas to the Contract Administrator immediately.
- (g) After soil settlement has occurred, fill with soil to finish grade.
- (h) Dispose of burlap, wire and container material off Site.

E26.12 Tree Supports and Tree Protection Cloth

E26.12.1 Install tree supports and tree protection cloth as indicated on the Drawings taking care not to damage or puncture underground utilities.

E26.12.2 Use double stake tree support for deciduous trees:

- (a) Place first stake on prevailing wind side of tree trunk.
- (b) Drive stakes minimum 150mm into undisturbed soil beneath bottom of roots. Ensure stakes are secure, vertical and unsplit.
- (c) Install tree tie 1500mm above grade.
- (d) Install tree protection cloth and fasten to tree stakes. Burry bottom of cloth 150mm into planting medium.

E26.13 Pruning

E26.13.1 Undertake corrective pruning after planting to eliminate torn and broken branches. Do not damage lead branches or remove smaller twigs along main branches. Do not prune to compensate for root loss. Pruning shall be performed by a certified arborist or tree professional.

E26.14 Maintenance

E26.14.1 Maintain plant material from date of planting to the end of the warranty period. Refer to Landscape Maintenance Specification.

E26.15 Measurement and Payment

E26.15.1 Supply and installation of trees will be measured on a unit basis and will be paid for at the Contract Unit Price per unit for the following items of work, measured as specified herein, which price shall be payment in full for performing all operations herein described and all other items incidental to the Work included in this Specification.

Items of Work:

- (a) Manitoba Maple
- (b) American Elm
- (c) Basswood
- (d) Cottonwood (male)
- (e) Peachleaf Willow

E27. SITE FURNISHINGS

E27.1 Provide all labour, materials, methods, equipment and accessories for the supply and install of benches.

E27.2 References

E27.2.1 City of Winnipeg Standard Details:

- (a) SCD-121A – Tache Bench Composite with Arms

E27.3 Submittals

E27.3.1 Submit product data and shop drawings for bench.

E27.3.2 Submit sample of cedar tone composite boards.

E27.4 Materials

E27.4.1 Bench: Tache Bench Composite with Arms to SCD-121A, cedar tone composite boards, galvanized metal, or approved equal.

E27.5 Construction Methods

- E27.5.1 All work is to be located and installed in accordance with the Drawings and manufacturers specifications.
- E27.5.2 All furnishings to be installed plumb and true to correct elevations and location, as directed by the Contract Administrator. The Contractor shall confirm proposed locations of all site furnishings with Contract Administrator prior to installation.
- E27.5.3 All furnishings to be carefully handled so that no parts will be bent, broken, or otherwise damaged. Contractor is responsible for replacing any damaged furnishings, prior to installation, at no cost to the City.

E27.6 Measurement and Payment

- E27.6.1 The supply and installation of site furnishings shall be paid for on a unit each basis each and paid for at the Contract Unit Price per unit for the Items of Work listed below. Price shall be payment in full for supplying materials and for performing the Work in accordance with this specification, accepted and measured by the Contract Administrator. Prices to include all mounting hardware.
- E27.6.2 Items of Work:
- (a) Bench

E28. LANDSCAPE MAINTENANCE

E28.1 Description

- E28.1.1 Provide all labour, materials, methods, equipment and accessories for the maintenance of trees following acceptance of the plant material to start warranty.
- E28.1.2 In general, the Work shall include:
- (a) Fertilizing
 - (b) Watering
 - (c) Weed Control
 - (d) Pest and disease Control
 - (e) Winter Preparation
- E28.1.3 Maintenance shall be performed on an as required basis.

E28.2 Maintenance and Warranty Period

- E28.2.1 Maintenance shall occur between the date of installation and up to a period of two (2) years from date landscaped areas are accepted to start warranty. The warranty period for plant materials will be coincidental to the maintenance period.
- E28.2.2 Thirty days after the planting installation has been completed, the Contract Administrator shall perform an inspection of the plant material to determine if the plant material is acceptable to start warranty.

E28.3 Materials and Equipment

- E28.3.1 Materials shall conform to the requirements of related Specification sections.
- E28.3.2 Provide all equipment to properly execute Work. Maintain such equipment in a workable, safe condition while in use during this project.
- E28.3.3 Contract Administrator shall review equipment to be used to execute Work prior to execution.

E28.4 Method

E28.4.1 General

- (a) Provide watering service within 24 hours, weeding services within 48 hours of the request by the Contract Administrator. Monitor the Site and advise the Contract Administrator of conditions that might void the Contractor's warranty responsibilities.
- (b) The Contractor shall maintain a log noting times, dates, equipment used, and quantity of materials used and areas treated for each maintenance application. Forms shall be provided by Contract Administrator. Submit log to Contract Administrator upon request. Contractor shall notify Contract Administrator of the exact time Contractor proposes to commence each application.
- (c) Schedule operations in accordance with growth, health, weather conditions, and use of Site.
- (d) Perform each operation continuously and completely within a reasonable time period.
- (e) Store equipment and materials off Site.
- (f) Collect and dispose of debris or excess material on the day the maintenance is undertaken.

E28.4.2 Maintenance of Trees:

- (a) Fertilizing: Apply fertilizer only at frequency, ratio and rates as recommended by manufacturer. Water immediately after fertilizing. Apply fertilizer no later than May 30th of each maintenance year.
- (b) Watering: Apply water as required to supplement rainfall and to maintain optimum growing conditions. In general, water once a week to achieve rates as indicated. Allow soil to adequately dry between watering to prevent over saturation without creating water stress. Subject to the above-noted requirements, the Contractor must water at least once a week between May 1st and October 15th inclusive. A complete record is to be kept of each series of waterings for all planted trees noting location and date of watering. This record is to be given to the Contract Administrator when requested. Apply 40 litres of water per 25 mm calliper per application using a deep root feeder or low pressure open flow nozzle and hose. The water stream must not gouge the soil and mulch.
- (c) Weed Control: Inspect and undertake weed control weekly during the first year of maintenance and monthly during the second year. By hand, remove all weeds with their roots from tree pits and tree beds and dispose of off Site. When weeding operation is complete, replace and rake displaced mulch to its original condition.
- (d) Pests and Diseases: Obtain written approval of Contract Administrator prior to using any pesticide. Control pests and disease through pruning or application of pesticides. Use species specific pesticides where possible. Use only pesticides of low mammalian toxicity. Strictly follow manufacturer's written instructions.
- (e) Pruning: The Contractor shall provide a person with a Manitoba Arborists Certificate for each work crew or Work Site. Prune as required to remove dead, broken or damaged limbs. Prune back to healthy growth while maintaining balanced crown shape. Employ clean sharp tools. Make cuts smooth and flush with outer edge of branch collar near the main stem or branch. Cuts must be smooth and sloping to prevent accumulation of water on cut. Do not leave little stumps ("horns") on trunks or main branches. Prune according to accepted horticultural practices as outline in "The Pruning Manual", Publication No. 1505-1977 by Agriculture Canada.
- (f) Winter Preparation: Ensure adequate moisture in tree root zones prior to freeze-up.

E28.5 Measurement and Payment

- E28.5.1 Landscape maintenance shall be paid for on a lump sum basis for the items of work listed below. Price shall be payment in full for supplying all material and performing all operations herein described and all other items incidental to the Work included in this Specification.

Items of Work:

- (i) Landscape Maintenance Year 1
- (ii) Landscape Maintenance Year 2