



**THE CITY OF WINNIPEG**

# **TENDER**

**TENDER NO. 968-2022**

**2023 INDUSTRIAL STREET RENEWALS – GALT AVE, ARGYLE ST AND VARIOUS  
OTHER LOCATIONS**

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## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 2023 Industrial Street Renewals – Galt Ave, Argyle St and Various Other Locations

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, March 21<sup>st</sup>, 2023.

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](http://www.merx.com).
- B5.4 The Bidder is responsible for ensuring that they have 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 they wish 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](http://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.

B9.1.1 Prices stated on Form B: Prices shall not include any costs which may be incurred by the Contractor with respect to any applicable funding agreement obligations as outlined in D35. Any such costs shall be determined in accordance with D35.

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) N/A

## **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 D7).
- B12.4 Further to B12.3(c), the Bidder shall, within five (5) Business Days of a request by the Contract Administrator, provide proof satisfactory to the Contract Administrator that the Bidder/Subcontractor has a workplace safety and health program meeting the requirements of The Workplace Safety and Health Act (Manitoba), by providing:
- (a) 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](http://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](http://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 they are 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.

B18.4 If funding for the Work is provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada, Bidders are advised that the terms of D35 shall immediately take effect upon confirmation of such funding, regardless of when funding is confirmed.

B18.4.1 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](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) Pavement Rehabilitation.
  - (i) Alexander Ave – Martha St to Lily St
  - (ii) Argyle St – George Ave to Disraeli Fwy
  - (iii) Dagmar St – McDermot Ave to William Ave
- (b) Pavement Reconstruction
  - (i) Galt Ave – Lily St to Duncan St
  - (ii) Heaton Ave – Argyle St to Waterfront Dr
  - (iii) MacDonald Ave – Waterfront Dr to Gomez St
- (c) Streetscaping and Electrical Works
  - (i) Galt Ave – Lily St to Duncan St
  - (ii) Lily St – Market Ave to Disraeli Fwy

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

- (a) Pavement Rehabilitation
  - (i) Planing of existing asphalt as required;
  - (ii) Renewal of existing sidewalk as required;
  - (iii) Construction of concrete sidewalk;
  - (iv) Installation of detectable warning surface tiles;
  - (v) Installation of catch basin/catch pits and connection pipe;
  - (vi) Abandon existing drainage inlets;
  - (vii) Full-depth concrete repairs of existing joints and slabs;
  - (viii) Planing/ Removal / Renewal of existing barrier curb as required;
  - (ix) Construction of modified barrier curb;
  - (x) Adjustment of precast sidewalk blocks;
  - (xi) Adjustment of existing catch basins, manholes and appurtenances;
  - (xii) Placement of pavement repair fabric as required;
  - (xiii) Placement of asphalt overlay;
    - (i) Alexander Ave – Martha St to Lily St (average thickness 60mm)
    - (ii) Argyle St – George Ave to Disraeli Fwy (average thickness 60mm)
    - (iii) Dagmar St – McDermot Ave to William Ave (average thickness 90mm)
  - (xiv) Boulevard restoration and sod.
- (b) Asphalt Pavement Reconstruction

- (i) Installation of Catch Basins and connecting Sewer Pipes;
  - (ii) Pavement Removal;
  - (iii) Excavation;
  - (iv) Subgrade compaction;
  - (v) Installation of Subdrains;
  - (vi) Insulation of Water Services;
  - (vii) Placement of Geotextile Fabric;
  - (viii) Placement of Geogrid;
  - (ix) Placement of Sub-Base and Base Course material;
  - (x) Construction of Asphalt Pavement;
  - (xi) Construction of Barrier Curb and Gutter;
  - (xii) Construction of Modified Barrier Curb and gutter at radii;
  - (xiii) Construction of Ramp Curbs;
  - (xiv) Installation of Detectable Warning Tiles;
  - (xv) Construction of 200 mm Concrete Approaches (reinforced);
  - (xvi) Construction of 70 mm Asphalt Approaches;
  - (xvii) Construction of Asphalt tie ins;
  - (xviii) Sidewalk Removal;
  - (xix) Construction of 100 mm concrete sidewalk;
  - (xx) Construction of 70 mm asphalt sidewalk;
  - (xxi) Adjustment of existing Catch Basins, Manholes and Appurtenances;
  - (xxii) Restoration of Boulevard;
- (c) Streetscaping and Electrical Works
- (i) Construction of structural soil system;
  - (ii) Installation of various paving stones in concrete blockouts;
  - (iii) Installation of public art pieces;
  - (iv) Removal and replanting of trees;
  - (v) Installation of electrical conduit and wiring;
  - (vi) Installation of pedestrian lighting.

#### **D4. CONTRACT ADMINISTRATOR**

D4.1 The Contract Administrator is WSP Canada Inc, represented by:

Scott Suderman, C.E.T. P.Eng  
Senior Project Manager

Telephone No. 204-782-7189

Email Address Scott.Suderman@wsp.com

D4.2 At the pre-construction meeting, Scott Suderman, C.E.T. P.Eng will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

#### **D5. SITE INVESTIGATION DUE DILIGENCE AND RISK**

D5.1 Notwithstanding C3.1, the Contractor acknowledges that the site investigation reports and other site information included in this Tender have been provided to it and may be relied upon by the Contractor to the extent that the Contractor uses Good Industry Practice in interpreting such report(s) and site information and carries out the Work in accordance with Good Industry Practice based upon such report(s) and the information contained in them and such other site information. In the event that a site condition related to:

- (a) the location of any utility which can be determined from the records or other information available at the offices of any public authority or person, including a municipal corporation and any board or commission thereof, having jurisdiction or control over the utility;
- (b) the Site conditions, including but not limited to subsurface hazardous materials or other concealed physical conditions;
- (c) the location, nature, quality or quantity of the materials to be removed or to be employed in the performance of the Work;
- (d) the nature, quality or quantity of the Plant needed to perform the Work;
- (e) all matters concerning access to the Site, power supplies, location of existing services, utilities or materials necessary for the completion of the Work; and
- (f) all other matters which could in any way affect the performance of the Work;

that could not have been “properly inferable”, “readily apparent” and readily discoverable” using Good Industry Practice by the Contractor, results in additional Work which is a direct result of this newly discovered site condition, such additional Work will be considered by the City under Changes in Work.

#### **D6. CONTRACTOR'S SUPERVISOR**

- D6.1 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.
- D6.2 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 D6.1 or an alternate can be contacted twenty-four (24) hours a day to respond to an emergency.

#### **D7. ACCESSIBLE CUSTOMER SERVICE REQUIREMENTS**

- D7.1 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.
  - D7.1.1 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.
  - D7.1.2 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.

#### **D8. UNFAIR LABOUR PRACTICES**

- D8.1 Further to C3.2, the Contractor declares that in bidding for the Work and in entering into this Contract, the Contractor and any proposed Subcontractor(s) conduct their respective business



in accordance with established international codes embodied in United Nations Universal Declaration of Human Rights (UDHR) <https://www.un.org/en/about-us/universal-declaration-of-human-rights> International Labour Organization (ILO) <https://www.ilo.org/global/lang-en/index.htm> conventions as ratified by Canada.

- D8.2 The City of Winnipeg is committed and requires its Contractors and their Subcontractors, to be committed to upholding and promoting international human and labour rights, including fundamental principles and rights at work covered by ILO eight (8) fundamental conventions and the United Nations Universal Declaration of Human Rights which includes child and forced labour.
- D8.3 Upon request from the Contract Administrator, the Contractor shall provide disclosure of the sources (by company and country) of the raw materials used in the Work and a description of the manufacturing environment or processes (labour unions, minimum wages, safety, etc.).
- D8.4 Failure to provide the evidence required under D8.3, may be determined to be an event of default in accordance with C18.
- D8.5 In the event that the City, in its sole discretion, determines the Contractor to have violated the requirements of this section, it will be considered a fundamental breach of the Contract and the Contractor shall pay to the City a sum specified by the Contract Administrator in writing (“Unfair Labour Practice Penalty”). Such a violation shall also be considered an Event of Default, and shall entitle the City to pursue all other remedies it is entitled to in connection with same pursuant to the Contract.
- D8.5.1 The Unfair Labour Practice Penalty shall be such a sum as determined appropriate by the City, having due regard to the gravity of the Contractor’s violation of the above requirements, any cost of obtaining replacement goods/ services or rectification of the breach, and the impact upon the City’s reputation in the eyes of the public as a result of same.
- D8.5.2 The Contractor shall pay the Unfair Labour Practice Penalty to the City within thirty (30) Calendar Days of receiving a demand for same in accordance with clause D8.5. The City may also hold back the amount of the Unfair Labour Practice Penalty from payment for any amount it owes the Contractor.
- D8.5.3 The obligations and rights conveyed by this clause survive the expiry or termination of this Contract, and may be exercised by the City following the performance of the Work, should the City determine, that a violation by the Contractor of the above clauses has occurred following same. In no instance shall the Unfair Labour Practice Penalty exceed the total of twice the Contract value.

## **D9. FURNISHING OF DOCUMENTS**

- D9.1 Upon award of the Contract, the Contractor will be provided with ‘issued for construction’ Contract Documents electronically, including Drawings in PDF format only.

## **SUBMISSIONS**

### **D10. AUTHORITY TO CARRY ON BUSINESS**

- D10.1 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.

## **D11. SAFE WORK PLAN**

- D11.1 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.
- D11.2 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>
- D11.3 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.

## **D12. INSURANCE**

- D12.1 The Contractor shall provide and maintain the following insurance coverage:
- (a) commercial general liability insurance, in the amount of at least two million dollars (\$2,000,000.00) inclusive, with The City of Winnipeg added as an additional insured, with a cross-liability clause, such liability policy to also contain contractual liability, unlicensed motor vehicle liability, non-owned automobile liability, broad form property damage cover and products and completed operations, to remain in place at all times during the performance of the Work and throughout the warranty period;
  - (b) if applicable, Automobile Liability Insurance covering all motor vehicles, owned and operated and used or to be used by the Contractor directly or indirectly in the performance of the Work. The Limit of Liability shall not be less than \$2,000,000 inclusive for loss or damage including personal injuries and death resulting from any one accident or occurrence;
  - (c) an all risks Installation Floater carrying adequate limits to cover all machinery, equipment, supplies and/or materials intended to enter into and form part of any installation.
- D12.2 Deductibles shall be borne by the Contractor.
- D12.3 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.
- D12.4 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.

## **D13. CONTRACT SECURITY**

- D13.1 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.
- D13.1.1 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 D13.1(b).

D13.1.2 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.

D13.1.3 Digital bonds passing the verification process will be treated as original and authentic.

D13.2 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.

D13.3 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 D13.1(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.

#### **D14. SUBCONTRACTOR LIST**

D14.1 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.

#### **D15. DETAILED WORK SCHEDULE**

D15.1 The Contractor shall provide the Contract Administrator with a detailed work schedule at least ten (10) 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.

D15.2 The detailed work schedule shall consist of the following:

- (a) a critical path method (C.P.M.) schedule for the Work;
- (b) a Gantt chart for the Work based on the C.P.M. schedule; and

all acceptable to the Contract Administrator.

- D15.3 Further to D15.2(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:
- (a) Underground renewals;
  - (b) Excavation;
  - (c) Subbase and base placement;
  - (d) Concrete joint and slab repairs;
  - (e) Curb renewal/installation;
  - (f) Sidewalk renewal/installation;
  - (g) Asphalt mainline paving;
  - (h) Asphalt tie ins / approaches;
  - (i) Boulevard grading;
  - (j) Sodding;
  - (k) Soil cell installation;
  - (l) Lily street tree and artwork replacement;
  - (m) Electrical.
- D15.4 Further to D15.2(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.

## **D16. REQUIREMENTS FOR SITE ACCESSIBILITY PLAN**

- D16.1 The Contractor shall provide the Contract Administrator with an Accessibility Plan at least ten (10) 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.
- D16.2 The Accessibility Plan shall demonstrate how the Contractor will accommodate the safe passage of pedestrians and cyclists in accordance with the Manual of Temporary Traffic Control, the Contract Drawings, Staging Plans, and Streets By-Law No. 1481/77 at all times for the duration of the Construction. Unless noted in the Contract, the Accessibility Plan must include a written plan for the following:
- (a) How the Contractor will maintain at least one crossing in each direction for each intersection (one north/south crosswalk and one east/west crosswalk).
  - (b) How the Contractor will maintain access to bus stops within the site.
  - (c) How the Contractor will maintain access to pedestrian corridors and half signals.
  - (d) How the Contractor will maintain cycling facilities.
  - (e) How the Contractor will maintain access to residents and businesses unless otherwise noted in the Contract.
  - (f) Any required detour signage at adjacent crossings to facilitate sidewalk or active transportation pathway closures.
- D16.3 The Accessibility Plan may also include figures, sketches, or drawings to demonstrate the proposed plan.
- D16.4 The Accessibility Plan shall include written details on how the Contractor intends to review, maintain, and document all items related to the Accessibility Plan on-site during Construction, including, but not limited to:
- (a) Signage
  - (b) Temporary Ramping

- (c) Transit Stops
- (d) Detour Signage

- D16.5 At minimum, the Contractor shall review the site conditions on a daily basis to ensure that all features related to the Accessibility Plan are in place. The site review is intended to correct deficiencies as a result of unforeseen events such as wind, traffic, or the general public. Deficiencies that are direct result of the Contractors actions must be corrected immediately.
- D16.6 Any changes to the Accessibility Plan must be approved by the Contract Administrator.
- D16.7 Upon request from the Contract Administrator, the Contractor shall provide records demonstrating that the site has been maintained.
- D16.8 Deficiencies as a direct result of actions by the Contractor that are not immediately corrected and/or failure to produce records that demonstrate that the site was maintained in compliance with the Accessibility Plan may result in a pay adjustment via the monthly Progress Payment. The rate of pay adjustment will be as per the following schedule:
- (a) First Offence – A warning will be issued and documented in the weekly or bi-weekly site meeting.
  - (b) Second Offence – A field instruction to immediately correct the site will be issued by the Contract Administrator.
  - (c) Third and subsequent Offences – A pay reduction will be issued in the amount of \$250.00 per instance and per day.

## **SCHEDULE OF WORK**

### **D17. COMMENCEMENT**

- D17.1 The Contractor shall not commence any Work until they are in receipt of an award letter from the Award Authority authorizing the commencement of the Work.
- D17.2 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 D10;
    - (ii) evidence of the workers compensation coverage specified in C6.15;
    - (iii) the twenty-four (24) hour emergency response phone number specified in D6.2.
    - (iv) the Safe Work Plan specified in D11;
    - (v) evidence of the insurance specified in D12;
    - (vi) the contract security specified in D13;
    - (vii) the subcontractor list specified in D14;
    - (viii) the detailed work schedule specified in D15;
    - (ix) the Requirements for Site Accessibility Plan specified in D16; and
    - (x) the direct deposit application form specified in D31
  - (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.
- D17.3 The Contractor shall not commence the Work on the Site before July 3, 2023, and shall commence the Work on Site no later than July 17, 2023, as directed by the Contract Administrator and weather permitting.

## **D18. WORKING DAYS**

D18.1 Further to C1.1(tt);

D18.1.1 The Contract Administrator will determine daily if a Working Day has elapsed and will record their assessment. During the weekly site meeting the Contract Administrator will provide the Contractor with a record of the Working Days assessed for the preceding week and document in the minutes. The Contractor shall raise concerns or disputes during the weekly site meeting for Working Days assessed in the preceding week otherwise they are signifying that they agree with the Contract Administrator's determination of the Working Days assessed for the report period.

D18.1.2 Work done to restore the Site to a condition suitable for Work, shall not be considered "work" as defined in the definition of a Working Day.

## **D19. RESTRICTED WORK HOURS**

D19.1 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.

## **D20. WORK BY OTHERS**

D20.1 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.

D20.2 Work by others on or near the Site will include but not necessarily be limited to:

- (a) City of Winnipeg Geomatics Branch – various works on survey monuments;
- (b) City of Winnipeg Water Services – Inspection of water valves;
- (c) Manitoba Hydro – safety watch as required, Upgrading of streetlighting on Heaton Ave, Galt Ave, and MacDonald Ave;
- (d) BellMTS/Shaw – adjustments to utility infrastructure as required;

D20.3 Further to D20.1 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 D20.2 or additional parties, in their construction schedule as per D15 and accommodate the necessary area on Site required for the Work by Others to complete the Work.

## **D21. SEQUENCE OF WORK**

D21.1 Further to C6.1, the sequence of work shall comply with the following:

D21.1.1 Providing that the Work on each street is completed in a similar order to the order that the Work was commenced in, the Contractor will be permitted to have a maximum of three (3) streets under construction at any one time. Completion of a street means that all of the necessary concrete, asphalt including approaches and landscaping Work is completed to the satisfaction of the Contract Administrator.

D21.1.2 Where the Contractor utilizes two (2) or more crews that work independently on the same major component of the Work as identified in D3, the Contract Administrator may approve an increase to the maximum number of streets under construction at any time.

- D21.1.3 Placing the topsoil and finished grading of all boulevard and median areas shall be completed prior to commencing construction of asphaltic concrete overlays, including scratch courses.
- D21.1.4 Work on Argyle Street and Heaton Avenue shall not commence before July 1, 2023 (School Zone)
- D21.1.5 Work on Galt Avenue to be staged so that access is maintained to either dock 4 or dock 5 of 115 Alexander Avenue.
- D21.1.6 Work on Heaton Avenue and MacDonald Avenue to be staged so that access is maintained to 60 Heaton and 541 Waterfront Drive, respectively. Coordinate with property owners. Paving operations on MacDonald Avenue to be completed on a Monday or in coordination with the property owner of 541 Waterfront Drive.

## **D22. CRITICAL STAGES**

- D22.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) Argyle Street
    - (i) Substantial Performance including placement of topsoil and sod, shall be achieved on or before September 1, 2023 (school zone).
  - (b) Heaton Avenue
    - (i) Substantial Performance including placement of topsoil and sod, shall be achieved on or before September 1, 2023 (school zone).

## **D23. SUBSTANTIAL PERFORMANCE**

- D23.1 The Contractor shall achieve Substantial Performance within seventy (70) consecutive Working Days of the commencement of the Work as specified in D17.
- D23.2 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.
- D23.3 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.

## **D24. TOTAL PERFORMANCE**

- D24.1 The Contractor shall achieve Total Performance within seventy five (75) consecutive Working Days of the commencement of the Work as specified in D17.
- D24.2 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.
- D24.3 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.

## **D25. LIQUIDATED DAMAGES**

- D25.1 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 Working Day for each and every Working Day following the days fixed herein for same during which such failure continues:
- (a) Critical Stage D.22.1(a) - Three Thousand dollars (\$3,000.00);
  - (b) Critical Stage D.22.1(b) - Three Thousand dollars (\$3,000.00);
  - (c) Substantial Performance – Three Thousand dollars (\$3,000.00);
  - (d) Total Performance – One Thousand dollars (\$1,000.00).
- D25.2 The amounts specified for liquidated damages in D25.1 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.
- D25.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

## **D26. COVID-19 SCHEDULE DELAYS**

- D26.1 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.
- D26.2 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.
- D26.3 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.
- D26.4 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 D26.3. Failure to provide this notice will result in no additional time delays being considered by the City.
- D26.5 The Work schedule, including the durations identified in D19 to D24 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.
- D26.6 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.
- D26.7 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.



## **D27. SCHEDULED MAINTENANCE**

- D27.1 The Contractor shall perform the following scheduled maintenance in the manner and within the time periods required by the Specifications:
- (a) Sod Maintenance as specified in CW 3510-R10;
  - (b) Reflective Crack Maintenance as specified in CW 3250-R7.
  - (c) Landscape Maintenance as specified in E26.
- D27.2 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**

### **D28. JOB MEETINGS**

- D28.1 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.
- D28.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever they deem it necessary.

### **D29. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)**

- D29.1 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).

### **D30. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS**

- D30.1 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**

### **D31. PAYMENT**

- D31.1 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](https://winnipeg.ca/finance/files/Direct_Deposit_Form.pdf).

### **D32. FUEL PRICE ADJUSTMENT**

- D32.1 The Contract is subject to a fuel price adjustment which will be calculated monthly based on eligible Work completed utilizing the following mathematical formulas;
- (a) where the price of fuel has increased -  $((CFI/BFI)-1.15) \times Q \times FF$ ; and

(b) where the price of fuel has decreased -  $((CFI/BFI)-0.85) \times Q \times FF$ ; where

- (i) BFI = base fuel index
- (ii) CFI = current fuel index
- (iii) FF = fuel factor
- (iv) Q = monetary value of Work applied in the calculation.

D32.1.1 Eligible Work will be determined in accordance with D32.5.

D32.1.2 The base fuel index (BFI) will be the retail price of fuel identified on the Submission Deadline based on latest published "Monthly average retail prices for gasoline and fuel by geography" for Winnipeg, published by [Statistics Canada, Table 18-10-0001-01](#). The BFI is a blended rate based on 15% regular unleaded gasoline at self-service filling stations and 85% diesel fuel at self-service filling stations.

D32.1.3 The current fuel index (CFI) based on the above blended rate will be determined for each monthly progress estimate and applied on the following progress estimate as a change order once rates are published by Statistics Canada.

D32.1.4 A Fuel Factor (FF) rate of the monetary value of all eligible Work completed that month based on the Contract unit prices will be used to calculate the assumed apportioned cost of fuel.

D32.2 Fuel cost adjustments may result in additional payment to the Contractor or credit to the City within the Contract by way of a monthly change order.

D32.3 The fuel escalation or de-escalation adjustment will not be applied if the CFI is within  $\pm 15\%$  of the BFI.

D32.4 Fuel escalation adjustments will not be considered beyond the Substantial Performance/Critical Stages except where those dates/Working Days are adjusted by change order. Fuel de-escalation adjustments will apply for Work that extends beyond the dates/Working Days specified for Substantial Performance/Critical Stages.

D32.5 The Fuel Factor (FF) rates will be set as follows:

- (a) The Fuel Factor rate shall be set at 2.7% of the monetary value of all Work based on unit prices.

## WARRANTY

### D33. WARRANTY

D33.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) years thereafter for rehabilitation work, and two (2) years thereafter for pavement reconstruction works, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

D33.2 Notwithstanding C13.2 or D33.1, 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) 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.

D33.2.1 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

### D34. DISPUTE RESOLUTION

- D34.1 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 D34.
- D34.2 The entire text of C21.4 is deleted, and amended to read: "Intentionally Deleted"
- D34.3 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.
- D34.4 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.
- D34.4.1 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.
- D34.4.2 As these negotiations are not an adjudicative hearing, neither party may have legal counsel present during the negotiations.
- D34.4.3 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.
- D34.4.4 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 D34.4.3, 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

### D35. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

- D35.1 In the event that funding for the Work of the Contract is provided to the City of Winnipeg by the Government of Manitoba and/or the Government of Canada, the following terms and conditions shall apply, as required by the applicable funding agreements.
- D35.2 Further to D35.1, in the event that the obligations in D35 apply, actual costs legitimately incurred by the Contractor as a direct result of these obligations ("Funding Costs") shall be determined by the actual cost to the Contractor and not by the valuation method(s) outlined in C7.4. In all other respects Funding Costs will be processed in accordance with Changes in Work under C7.
- D35.3 For the purposes of D35:
- (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.
- D35.4 Modified Insurance Requirements
- D35.4.1 If not already required under the insurance requirements identified in D12, the Contractor will be required to provide wrap-up liability insurance in an amount of no less than two million dollars (\$2,000,000) inclusive per occurrence. Such policy will be written in the joint names of the City, Contractor, Consultants and all sub-contractors and sub-consultants and include twelve (12) months completed operations. The Government of Manitoba and their Ministers, officers, employees, and agents shall be added as additional insureds.
- D35.4.2 If not already required under the insurance requirements identified in D12, the Contractor will be required to provide builders' risk insurance (including boiler and machinery insurance, as applicable) providing all risks coverage at full replacement cost, or such lower level of insurance that the City may identify on a case-by-case basis, such as an installation floater.
- D35.4.3 The Contractor shall obtain and maintain third party liability insurance with minimum coverage of two million dollars (\$2,000,000.00) per occurrence on all licensed vehicles operated at the Site. In the event that this requirement conflicts with another licensed vehicle insurance requirement in this Contract, then the requirement that provides the higher level of insurance shall apply.
- D35.4.4 Further to D12.3, insurers shall provide satisfactory Certificates of Insurance to the Government of Manitoba prior to commencement of Work as written evidence of the insurance required. The Certificates of Insurance must provide for a minimum of thirty (30) days' prior written notice to the Government of Manitoba in case of insurance cancellation.
- D35.4.5 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.
- D35.5 Indemnification By Contractor
- D35.5.1 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.

- D35.5.2 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.

#### D35.6 Records Retention and Audits

D35.6.1 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.

D35.6.2 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 D35.6.1 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.

#### D35.7 Other Obligations

D35.7.1 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.

D35.7.2 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.

D35.7.3 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.

D35.7.4 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.

D35.7.5 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.

D35.7.6 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 D13)

KNOW EVERYONE 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. 968-2022

2023 Industrial Street Renewals – Galt Ave, Argyle St and Various Other Locations  
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 D13)

KNOW EVERYONE 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. 968-2022

2023 Industrial Street Renewals – Galt Ave, Argyle St and Various Other Locations

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 D14)

2023 Industrial Street Renewals – Galt Ave, Argyle St and Various Other Locations

<u>Portion of the Work</u>	<u>Name</u>	<u>Address</u>
<b>SURFACE WORKS:</b>		
<b><u>Supply of Materials:</u></b>		
Concrete		
Asphalt		
Base Course & Sub-base		
Catch Basins & Catch Pits		
Frames & Covers		
Pipes & Fittings		
Pavement Repair Fabric		
Sod		
Soil Cells		
Paving Stones		
Tree Grates		
Electrical Materials		
<b><u>Installation and Placement:</u></b>		
Concrete		
Asphalt		
Catch Basins & Catch Pits		
Base Course & Sub-base		
Sod		
Soil Cell Installation		
Electrical		

## 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>
	Cover Sheet	A1
968-2022_Drawing_221-07906-00-01-R0	ALEXANDER AVE – MARTHA ST TO LILY ST, MINOR REHABILITATION STA 1+35 TO STA 2+42.39	A1
968-2022_Drawing_221-07906-00-02-R0	ARGYLE ST – GEORGE AVE TO DISRAELI FWY, MAJOR REHABILITATION STA 0+93.79 TO STA 1+75	A1
968-2022_Drawing_221-07906-00-03-R0	ARGYLE ST – GEORGE AVE TO DISRAELI FWY, MAJOR REHABILITATION STA 1+75 TO STA 2+61.35	A1
968-2022_Drawing_221-07906-00-04-R0	DAGMAR ST – McDERMOT AVE TO WILLIAM AVE, MAJOR REHABILITATION STA 0+95.61 TO STA 2+10	A1
968-2022_Drawing_221-07906-00-05-R0	DAGMAR ST – McDERMOT AVE TO WILLIAM AVE, MAJOR REHABILITATION STA 2+10 TO STA 3+05	A1
968-2022_Drawing_221-07906-00-06-R0	GALT AVE – LILY ST TO DUNCAN AVE, ASPHALT RECONSTRUCTION STA 1+00.89 TO STA 1+90	A1
968-2022_Drawing_221-07906-00-07-R0	GALT AVE – LILY ST TO DUNCAN AVE, ASPHALT RECONSTRUCTION STA 1+90 TO STA 2+67.50	A1
968-2022_Drawing_221-07906-00-08-R0	HEATON AVE – ARGYLE ST TO WATERFRONT DR, ASPHALT RECONSTRUCTION STA 0+93.75 TO STA 1+91.45	A1
968-2022_Drawing_221-07906-00-09-R0	MacDONALD AVE – WATERFRONT DR TO GOMEZ ST, ASPHALT RECONSTRUCTION STA 0+94.37 TO STA 2+02.79	A1
968-2022_Drawing_L1.1-R0	GALT AVE – MATERIALS AND PLANTING PLAN	A1
968-2022_Drawing_L1.2-R0	LILY STREET TRIPOD REPLACEMENT, TREE REMOVAL, & REPLACEMENTS	A1
968-2022_Drawing_L2.1-R0	GALT STREET DETAILS 1	A1
968-2022_Drawing_L2.2-R0	GALT STREET DETAILS 2	A1
968-2022_Drawing_E1.0-R0	GALT STREET ELECTRICAL SYMBOL LEGEND, DRAWING LIST, & DETAILS	A1
968-2022_Drawing_E1.1-R0	GALT STREET ELECTRICAL RECONSTRUCTION	A1

## **E2. MOBILIZATION AND DEMOBILIZATION PAYMENT**

### DESCRIPTION

- E2.1 This Specification shall cover all operations relating to the mobilization and demobilization of the Contractor to the project location(s).
- E2.2 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.
- E2.3 The inclusion of a payment item for the Work under this Specification shall not release or reduce the responsibilities of the Contractor under any other specification in this Contract.

### SCOPE OF WORK

- E2.4 Further to C12 of the General Conditions, where Mobilization and Demobilization is included as a bid item, it shall consist of the following, as applicable:
- (a) Mobilization shall include, but not be limited to:
    - (i) All activities and associated costs for transportation of the Contractor's personnel, equipment, and operating supplies to the site, and/or sites, and/or between sites;
    - (ii) Establishment of offices, buildings, other necessary general facilities and equipment parking/staging areas for the Contractor's operations at the site or sites;
    - (iii) Premiums paid for performance and payment bonds including coinsurance and reinsurance agreements as applicable;
    - (iv) General cleanup and housekeeping needed maintain a neat and orderly project site(s);
    - (v) Other job related items.
  - (b) Demobilization shall include, but not be limited to:
    - (i) All activities and costs for transportation of personnel, equipment, and supplies not used in the project from the site, and/or sites, and/or between sites;
    - (ii) Disassembly, removal, and site cleanup and restoration of offices, buildings, and other facilities assembled on the site and/or sites;
    - (iii) Repair of access roads, temporary haul roads, and equipment parking areas leaving the project site in the same or better condition than at the start of the project;
    - (iv) General cleanup and housekeeping needed to restore a neat and orderly project site.
- E2.5 Access to the site, equipment parking, and staging areas are limited to that shown on the drawings or as approved by the Contract Administrator.

### MEASUREMENT AND PAYMENT

- E2.6 The lump-sum price for the Mobilization and Demobilization bid item shall not exceed five percent (5.00%) of the total bid price for the Contract.
- E2.6.1 Further to B9, B17, C12 and E2.6, should the lump sum price exceed 5% of the Total Bid Price the lump sum price will be reduced to 5% of the Total Bid Price, the Total Bid Price will be determined using the reduced lump sum price and payment will be based on the reduced lump sum price.
- E2.7 Payment for Mobilization:
- (a) 60% of the lump-sum price will be paid to the contractor for Mobilization on the first Progress Estimate for the Contract.
- E2.8 Payment for Demobilization:

- (a) The remaining 40% of the lump-sum price will be paid upon:
  - (i) Restoration of the site and/or sites to the satisfaction of the Contract Administrator;
  - (ii) Distribution of the Declaration of Total Performance.

**E2.9 Pay Reduction for Accessibility Plan**

- (a) The Demobilization payment will be reduced by the number of pay adjustments incurred in accordance with D16 and as determined by the Contract Administrator.

**E2.10** Mobilization and Demobilization will be paid only once (to a maximum of 100%), regardless of the number of times the Contractor mobilizes to the site and/or sites.

**E3. GEOTECHNICAL REPORT**

**E3.1** Further to C3.1, the geotechnical report is provided to aid the Contractor's evaluation of the pavement structure and/or existing soil conditions. The geotechnical report is contained in Appendix 'A'.

**E4. PROTECTION OF EXISTING TREES**

**E4.1** The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing boulevard trees within the limits of the construction area:

- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.
- (b) Trees identified to be at risk by the Contract Administrator are to be strapped with 25 x 100 x 2400mm wood planks, or suitably protected as approved by the Contract Administrator.
- (c) Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches), with the outcome read in feet, from the closest edge of the trunk. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.
- (d) Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the work required. 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.
- (e) Work on-site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.

**E4.2** 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 City Forester or their designate.

**E4.3** No separate measurement or payment will be made for the protection of trees.

**E4.4** Except as required in clause E4.1(c) and E4.1(e), Elm trees shall not be pruned at any time between April 1 and July 31.

**E5. TRAFFIC CONTROL**

**E5.1** 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 **supplying**, 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.

E5.2 Upon request from the Contract Administrator, the Contractor shall provide records demonstrating that the site has been maintained.

E5.3 Further to E5.1(c) and E5.1(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.

E5.4 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.

E5.5 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.

## **E6. TRAFFIC MANAGEMENT**

E6.1 Further to clause 3.7 of CW 1130:

- (a) Single lane closures on intersecting and/or adjoining Regional Streets shall only be permitted during non-peak periods when required for construction activities when approved by the Traffic Management Branch. Storage/parking of materials, equipment or vehicles is not permitted on Regional Streets at any time unless approved by the Contract Administrator, in consultation with the Traffic Management Branch.

E6.1 Further to clause 3.7 of CW 1130:

E6.1.1 The Contractor shall schedule construction activities to meet the following:

- (a) Alexander Avenue, Argyle Street and Dagmar Street at least one lane for local access traffic shall be maintained along this street during construction. Private approach access shall be maintained at all times.
- (b) Galt Avenue, Heaton Avenue, and MacDonald Avenue will be closed to through traffic. Local access shall be maintained. The Contractor shall sign the street "Road Closed – No Exit" in accordance with the Manual of Temporary Traffic Control.

(c) Prior to construction, a temporary access is to be constructed to 51 Heaton Avenue via the public lane by removal of the existing chain link and wood fences. Fence to be reinstalled following the completion of roadworks.

E6.1.2 Should the Contractor be unable to maintain an existing 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 72 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access subject to the approval of the Contract Administrator. Special attention must be given to accesses serving 60 Heaton Avenue, 541 Waterfront Drive, 145 Pacific Avenue, and docks 4 and 5 of 115 Alexander Avenue.

E6.1.3 Pedestrian and ambulance/emergency vehicle access must be maintained at all times.

## **E7. REFUSE AND RECYCLING COLLECTION**

E7.1 While access to refuse and/or recycling collection vehicles is restricted, on collection day(s) the Contractor shall move all of the affected property owners refuse and/or recycling materials to a nearby common area, prior to an established time, in accordance with E7.2 to permit the normal collection vehicles to collect the materials. Immediately following recycling collection the Contractor shall return recycling receptacles to the addresses marked on the receptacles.

E7.2 Collection Schedule:

### **Alexander Ave – Martha St to Lily St**

*Collection Day(s):* **Varies, Wednesday/Thursday for 184 Alexander Ave**

*Collection Time:* **7:00 am – 7:00 pm**

*Common Collection Area:* **Behind 184 Alexander Ave**

### **Argyle St – George Ave to Disraeli Fwy.**

*Collection Day(s):* **Monday, Thursday**

*Collection Time:* **7:00 am – 7:00 pm**

*Common Collection Area:* **Private Approaches / Front Street**

### **Dagmar Ave – McDermot Ave to William Ave**

*Collection Day(s):* **Varies**

*Collection Time:* **Varies**

*Common Collection Area:* **Private collection, coordinate temporary relocation as required**

### **Galt Ave – Lily St to Duncan St.**

*Collection Day(s):* **Varies**

*Collection Time:* **Varies**

*Common Collection Area:* **Private collection, coordinate temporary relocation as required**

### **Heaton Ave – Argyle St to Waterfront Dr.**

*Collection Day(s):* **Thursday, Private collection varies**

*Collection Time:* **7:00 am – 7:00 pm**

*Common Collection Area:* **Front Street, Private approaches**



**MacDonald Ave – Waterfront Dr to Gomez St.**

*Collection Day(s):* **Varies**

*Collection Time:* **Varies**

*Common Collection Area:* **Private collection, coordinate temporary relocation as required.**

E7.3 No measurement or payment will be made for the work associated with this specification.

**E8. PEDESTRIAN SAFETY**

E8.1 During the project, the Contractor shall ensure that proper and adequate signage and barricades are in place during sidewalk construction to direct any pedestrians within the construction zone either around the construction area or to the sidewalk on the opposite side of the street. The Contractor may also be required to install snow fencing to protect and keep pedestrians safely away from the construction area. The Contractor shall be responsible for maintaining the signage, barricades, and snow fence in a proper working condition, to the satisfaction of the Contract Administrator. No measurement for payment shall be made for this work.

**E9. WATER OBTAINED FROM THE CITY**

E9.1 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.

**E10. SURFACE RESTORATIONS**

E10.1 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.

**E11. INFRASTRUCTURE SIGNS**

E11.1 The Contractor shall obtain infrastructure signs from the Traffic Services Sign Shop at 421 Osborne Street. The Contractor shall mount each sign securely to a rigid backing material approved by the Contract Administrator. The Contractor shall fasten each sign to a suitable support and erect and maintain one sign at each street as directed by the Contract Administrator. When the Contract Administrator considers the Work on the street complete, the Contractor shall remove and dispose of the signs and supports. No measurement for payment will be made for performing all operations herein described and all other items incidental to the work described.

**E12. PORTLAND CEMENT CONCRETE SIDEWALK WITH BLOCK OUTS FOR INDICATOR SURFACES**

DESCRIPTION

E12.1 This specification shall supplement CW 3325-R5 "Portland Cement Concrete Sidewalks".

CONSTRUCTION METHODS

E12.2 Add the following to section 9 :

- E12.2.1 As shown on the drawings and as directed by the Contract Administrator, construct sidewalk with block outs and/or monolithic curb and sidewalk with block outs, to allow for the installation of indicator surfaces.
- E12.2.2 Verify dimensions of paving stones (indicator surface) prior to construction of the block-outs. Gaps between paving stones and concrete pavement shall not exceed five (5) millimetres.
- E12.2.3 Concrete curbs for monolithic curb and sidewalk with block outs shall be constructed in accordance with CW 3240.

#### MEASUREMENT AND PAYMENT

- E12.3 Add the following to section 12 :
- E12.3.1 Construction of concrete sidewalks with block outs for indicator surfaces will be measured on surface area basis. The surface area to be paid for shall be the number of square metres constructed in accordance with this specification and accepted by the Contract Administrator, as computed by measurements made by the Contract Administrator.

#### BASIS OF PAYMENT

- E12.4 Add the following to section 13 :
- E12.4.1 Construction of concrete sidewalks with block outs for indicator surfaces will be paid for at the Contract Unit Price per square meter for the "Items of Work" listed here below, measured as specified herein, which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this specification.
- E12.4.2 Items of Work:
- (a) 100 mm Sidewalk with Block Outs
  - (b) 150 mm Sidewalk with Block Outs
  - (c) Monolithic Curb and 100 mm Sidewalk with Block Outs\*
  - (d) Monolithic Curb and 150 mm Sidewalk with Block Outs\*
- \* - reveal height and type
- E12.4.3 Concrete thickness greater than the specified sidewalk thickness as a result of shaping the base material to accommodate the block outs is incidental to the listed Items of Work.

### E13. PAVING STONES FOR INDICATOR SURFACES

#### DESCRIPTION

- E13.1 This specification shall supplement CW 3330-R5 "Installation of Interlocking Paving Stones"

#### MATERIALS

- E13.2 Add the following to section 5 :
- E13.2.1 Paving Stones for indicator surfaces shall be as shown on the drawings.
- E13.2.2 Paving Stones for indicator surfaces shall be :
- Barkman Concrete paving stones -  
Charcoal Holland Paver (60mm X 210 mm X 210 mm)  
<https://www.barkmanconcrete.com/>
  - Endicott Clay Paver(92mm X 57mm X 194mm)- Dark Ironspot  
<https://endicott.com/>

Yankee Hill Brick (92mm X 57mm X 194mm)- Dark Ironspot  
<http://yankeehillbrick.com/>

#### CONSTRUCTION METHODS

- E13.3 Add the following to section 9.2 "Preparation of Sub-grade, Sub-base and Sand-base" :
- E13.3.1 Preparation of Sand-Base for Paving Stones in Sidewalk Block Outs.
- E13.3.2 Place a 15mm layer of bedding sand in the blocked out sidewalk areas.
- E13.3.3 The bedding sand shall be spread and levelled so that the paving stones when installed are 5 mm higher than the finished grade.
- E13.3.4 No more sand shall be spread than can be covered in with paving stone on the same day.
- E13.3.5 The bedding sand shall not be compacted or disturbed prior to laying the paving stones.
- E13.4 Add the following to section 9.3 "Installation of Paving Stones" :
- E13.4.1 For indicator surface paving stones, commence installation of paving stones against the long edge of the block out to obtain the straightest possible course of installation.

#### MEASUREMENT AND PAYMENT

- E13.5 Add the following to section 12 :
- E13.6 Supply and Installation of Paving Stones for Indicator Surfaces
- E13.6.1 Paving stones for indicator surfaces will be measured on surface area basis. The surface area to be paid for shall be the number of square metres constructed in accordance with this specification and accepted by the Contract Administrator, as computed by measurements made by the contract Administrator.

#### BASIS OF PAYMENT

- E13.7 Add the following to section 13 :
- E13.7.1 The supply and installation of paving stones for indicator surfaces will be paid for at the Contract Unit Price per square meter for "Paving Stone Indicator Surface", measured as specified herein, which price shall be payment in full for supplying all materials and for performing all operations herein described and all other items incidental to the work included in this specification.
- E13.7.2 Concrete thickness greater than the specified sidewalk thickness as a result of shaping the base material to accommodate the block outs is incidental to the listed Items of Work.

### **E14. SUPPLY AND INSTALL WATERMAIN AND WATER SERVICE INSULATION**

#### DESCRIPTION

- E14.1 Notwithstanding 3.12 of CW 2110, this specification covers the supply and installation of insulation in roadway excavations over watermains and water services.
- E14.2 Referenced Standard Construction Specifications
- (a) CW 2030 – Excavation Bedding and Backfill
  - (b) CW 3110 – Sub –grade, Sub-base and Base Course Construction
- E14.3 Referenced Standard Details
- (a) SD-018 - Watermain and Water Service Insulation

## MATERIALS

E14.4 Acceptable insulation is:

- (a) Extruded Polystyrene rigid foam insulation – Type 4, 4" in thickness.  
DOW - Roofmate or Highload 40  
Owen's Corning - Foamular 350 or Foamular 400.  
2" X 48" X 96", 2" X 24" X 96", 4" X 24" X 96"

E14.5 Sand Bedding:

- (a) In accordance with CW 2030

## CONSTRUCTION METHODS

- E14.6 Prior to the installation of any sub-base material or geotextile material, locate all existing water services. Further to SD-018, where directed by the Contract Administrator, excavate the sub-grade to allow the top of the insulation to be installed flush with the surrounding sub-grade. Install the insulation on a level surface centered over the located watermain or water service for the full width of the roadway excavation. Install sand bedding if required to level the surface. Stockpile and dispose of excavated material in accordance with CW 3110.
- E14.7 Thickness of insulation is 100 mm ( 4"). If using 50 mm ( 2") panels 2 layers are required. Total width of insulation to be as directed by the Contract Administrator. Place sufficient full width panels to meet or exceed the specified width.
- E14.8 Place insulation panels adjacent to each other over the specified area with no gaps between panels and less than 15mm of elevation difference along the adjoined edges. Where 2" thick panels are being used, offset the top layer to prevent the panel joints from aligning with the joints in the lower layer.
- E14.9 Use full panels of insulation where possible. Where necessary cut insulation panels to obtain coverage to specified lengths. Insulation pieces shall be a minimum of dimension of 300 mm in width or length.
- E14.10 Take appropriate measures to ensure panels are not displaced when installing geotextiles and during backfilling operations.

## MEASUREMENT AND PAYMENT

- E14.11 Watermain and Water Service Insulation shall be measured on an area basis and paid for at the Contract Unit Price per square metre of "Watermain and Water Service Insulation". The area to be paid for shall be the total square meters of watermain and water service insulation supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.
- (a) Excavation of the roadway subgrade in accordance with E14.6 will not be measured for payment and will be included in the payment for "Watermain and Water Service Insulation".

## E15. VIDEO INSPECTION OF SEWERS

### DESCRIPTION

- E15.1 This Specification amends CW 2130 and CW 2145. It covers the incidental video inspection of existing sewers following tying in new catch basin leads or the abandonment of existing catch basin leads.

### CONSTRUCTION METHODS

- E15.2 Video inspection of existing sewers shall be done in accordance with CW 2130 and CW 2145.

## MEASUREMENT AND PAYMENT

E15.3 Video inspection of existing sewers following tying in new catch basin leads or the abandonment of existing catch basin leads shall not be measured and shall be considered incidental to the Work.

### **E16. SOFT EXCAVATION TO EXPOSE UNDERGROUND UTILITIES**

#### E16.1 Description

E16.1.1 This specification covers the soft excavation to expose underground utilities to determine the depth of the underground utility and whether it will interfere with the installation of proposed Works on site.

E16.1.2 These underground utilities include, but are not limited to, Manitoba Hydro cables, MTS cables, CPR, existing sewers, and existing watermains.

#### E16.2 Materials

##### E16.2.1 Backfill Material

(a) Backfill material for backfill of shafts after hydro-excavation has been completed shall consist of sand as per City of Winnipeg Standard Construction Specification CW 2030.

#### E16.3 Construction Methods

E16.3.1 Prior to commencement of any construction works adjacent to underground utilities, the Contractor shall use soft digging or hand excavation to expose the underground utilities.

E16.3.2 Once the elevation of the top of the pipe or duct has been determined the resulting excavation shall be backfilled with bedding sand to the elevation of the existing ground.

#### E16.4 Measurement and Payment

E16.4.1 Soft excavation to expose underground utilities will be considered incidental to the Work. No measurement and payment will be made within this section.

### **E17. STRUCTURAL SOIL CELLS**

#### E17.1 Description

E17.1.1 Provide all labour, materials, methods, equipment and accessories for the supply and installation of structural soil cells and all related work.

#### E17.2 Submittals

E17.2.1 Product Data: For each type of product, submit manufacturer's product literature with technical data sufficient to demonstrate that the product meets these specifications.

E17.2.2 Shop Drawings: Submit manufacturer supplied shop drawings for structural soil cell system.

E17.2.3 Submit product samples of root barrier, geogrid, and geotextile.

#### E17.3 Delivery, Storage and Handling

E17.3.1 Deliver materials in manufacturer's original, unopened, undamaged palletized units with identification numbers intact.

##### E17.3.2 Bulk Materials:

(a) Do not deliver or place backfill, soils and soil amendments in frozen, wet, or muddy conditions

- (b) Do not dump or store bulk materials near structures, utilities, sidewalks, pavements, and other facilities, or on existing turf areas or plants.
- (c) Provide protection including tarps, plastic and or matting between bulk materials and finished surfaces sufficient to protect the finish material.

E17.3.3 Provide erosion-control measures to prevent erosion or displacement of bulk materials and discharge of soil-bearing water runoff or airborne dust to adjacent properties, water conveyance systems, and walkways. Provide additional sediment control to retain excavated material, backfill, soil amendments and planting mix within the project limits as needed.

E17.3.4 Protect structural cells from damage during delivery, storage and handling.

- (a) Store under tarp to protect from sunlight when time from delivery to installation exceeds one week. Storage should occur on smooth surfaces, free from dirt, mud and debris.
- (b) Handling is to be performed with equipment appropriate to the size (height) of cells and site conditions, and may include, hand, handcart, forklifts, extension lifts, small cranes, etc., with care given to minimize damage to structural cell components.

E17.3.5 Be responsible for the supply, safe storage and handling of all materials.

#### E17.4 Materials

##### E17.4.1 Structural Cell System

- (a) 3X silva cell system, one base, six 3X posts and one deck.
- (b) DeepRoot tree root barrier.
- (c) DeepRoot impervious liner.
- (d) Water & Air Vent - Rootball: Water and air system 01, cast aluminum body, stainless steel grate.
- (e) Water & Air Vent – Silva Cell: Water and air system 02, cast aluminum body, stainless steel grate, threaded for adjustable height.
- (f) Geogrid: Net-shaped woven polyester fabric with PVC coating uniaxial or biaxial geogrid, inert to biological degradation, resistant to naturally occurring chemicals, alkalis, and acids; used to provide a stabilizing force within soil structure as the fill interlocks with the grid. Acceptable products: Stratagrid SG 150, Miragrid 2XT, Fortac 35 Geogrid, SF 20 Biaxial Geogrid, or approved equal.
- (g) Geotextile per CW3120.
- (h) Galvanized anchoring spikes.
- (i) Manufactured by DeepRoot Green Infrastructure, LLC ph. 1.800.458.7668.

E17.4.2 Granular drainage material in accordance with specification CW3120 - Installation of Sub Drains.

E17.4.3 Drainage pipe: 150mm dia. perforated PVC pipe.

E17.4.4 Geotextile to CW3130.

E17.4.5 Base Course and Backfill Material: to CW3110 granular A base granite material only – do not use limestone.

E17.4.6 Compacted planting medium mound and planting medium to planting medium & finished grading specification.

##### E17.5 Construction Method

E17.5.1 Silva cell modules must be transported and stored on manufacturers pallets with pallet wrap intact until ready for installation. Pallets should be positioned on firm level base, so as not to impede traffic or workflow.

- E17.5.2 Prior to the start of work layout and stake the limits of excavation and horizontal and vertical control points sufficient to install the structural cells and required drainage features in the correct locations.
- E17.5.3 The Contractor must ensure that all buried utilities and services are located and if necessary, protected and exposed prior to any excavation in accordance with specification CW1120.
- E17.5.4 Excavate and confirm to the dimensions and depth shown on the Drawings, including provision for drainage and base course layer, allowing 200mm (8") additional clearance in length and width. Side walls of excavated pit to be clean, straight, and within 15° of vertical. Soft dig / day lighting process to be used in area of existing underground utilities. Ensure subgrade slopes to sub drain trench toward perforated drainage pipe system (min 2.0% slope).
- E17.5.5 Clear excavation of all construction debris, trash, rubble and any foreign material. Excavate and remove oil spills and other soil contamination sufficiently to remove the harmful material. Fill over excavations with approved fill and compact to the required subgrade compaction.
- E17.5.6 All excavated material shall be disposed of off-site in accordance with specification CW1130.
- E17.5.7 Compact sub-grade in accordance with specification CW3110.
- E17.5.8 Install geotextile fabric for aggregate sub base in accordance with CW3130.
- E17.5.9 Install aggregate sub-base below structural cell system to the depths indicated in the Drawings and compact to a minimum of 95% of maximum dry density at optimum moisture content, in accordance with ASTM D 698 Standard Proctor Method.
- E17.5.10 Install planting medium, geogrid, root barrier and backfill. These three materials must be installed and compacted together in alternating operations in 200mm lifts to top of silva cells to achieve correct compaction relationships within the structural cell system.
- E17.5.11 Obtain final approval from Contract Administrator of planting medium and backfill installation prior to installation of structural cell deck and geotextile.
- E17.5.12 Place geotextile over top of silva cell system, 450mm overlap past excavation.
- E17.5.13 Install root barrier directly adjacent to concrete edge restraint.
- E17.5.14 Assemble and install structural cell system in accordance with manufacturer's specifications.
- E17.6 Protection
- E17.6.1 Maintain a minimum of 100mm of aggregate sub-base over the geotextile material during construction. Use only low-pressure tire or low impact track vehicles with a maximum surface pressure under vehicle of 4 pounds per square inch, on top of structural cells prior to the installation of final paving.
- E17.6.2 When vehicle must cross structural cells that does not have final paving surfaces installed, use plates or mats to distribute vehicle loads to levels that would be expected at deck surface once final paving has been installed. Use low-pressure tire or low impact track vehicles.
- E17.6.3 Ensure that all construction traffic is kept away from limits of structural cells until final surface materials are in place. No vehicles shall drive directly on the structural cell deck.
- E17.7 Measurement and Payment
- E17.8 The construction of structural cell system shall be measured on a lump sum basis as accepted by the Contract Administrator for "Structural Soil Cell System – four locations" inclusive of excavation, sub grade compaction, aggregate sub base, backfill material, silva cells, root

barrier, water & air vent, geogrid, geotextile, and anchor spikes. Price shall be payment in full for supplying materials and for performing the Work in accordance with this Specification and accepted and measured by the Contract Administrator.

- E17.9 Granular A base material shall be measured on a cubic metre basis and paid for at the Contract Unit Price per "Supplying and Placing Base Course Material - Granular A Base Granite Material Under Sidewalks", which per price shall be paid in full for supplying materials and performing all operations herein described and all other items incidental to the Work included in this Specification, accepted and measured by the Contract Administrator.
- E17.10 Drainage Pipe shall be measured on a length basis and paid for at the Contract Unit Price per metre for "Drainage Pipe", which per price shall be paid in full for supplying materials and performing all operations herein described and all other items incidental to the Work included in this Specification, accepted and measured by the Contract Administrator.

## **E18. UNIT PAVING**

### **E18.1 Description**

- E18.1.1 Provide all labour, materials, methods, equipment and accessories for the supply and installation of unit paving as indicated on the Drawings.

### **E18.2 References**

- E18.2.1 CW 3335 – Installation of Interlocking Paving Stones on a Lean Concrete Base

### **E18.3 Materials**

#### **E18.3.1 Unit Pavers:**

- (a) Pavers available from Barkman Concrete Ltd. Ph. 204-667-3310, or approved equal:
  - (i) 210 x 210 x 60mm Holland 6cm square paver, buff or natural colour.
  - (ii) 300 x 151 x 100mm Boadway paver, mahogany colour.
- (b) Pavers available from Endicott ph. 402-729-3315, or approved equal
  - (i) 194 x 93 x 57mm clay paver, dark ironspot.
- (c) Unit Pavers from Stockpile:
  - (i) Munich pavers stockpiled from sidewalk demolition.

- E18.3.2 Bedding Sand: shall be fine aggregate to the requirements of specification CW3330.

- E18.3.3 Joint Sand: to the requirements of specification CW3330.

### **E18.4 Construction Method**

- E18.4.1 Contractor to verify the exact dimensions of all unit pavers types prior to the construction of blockouts in concrete sidewalk. Use physical samples of specified pavers when constructing form work for blockouts.

- E18.4.2 Contractor to review paving layout and patterns with Contract Administrator.

- E18.4.3 Install concrete sidewalk w/blockouts as specified on Drawings.

#### **E18.4.4 Preparation of Sand Base**

- (a) Remove all accumulated debris from blockouts.
- (b) Install bedding sand to the depths indicated on the Drawings and to CW3330.
- (c) Do not compact sand base prior to installing pavers.

#### **E18.4.5 Installation of Unit Pavers**

- (a) Unit pavers shall be installed in formed concrete blockouts and compacted subgrade in accordance with the specification CW3330 and CW3335, set in locations and patterns as shown on the Drawings. Spaces between joints shall be 5mm maximum



and shall be uniform and consistent while maintaining true patterns as indicated on the Drawings.

- (b) Commence installation of pavers against edge to obtain straightest possible course for installation.
- (c) Pavers shall be cut with saw only to obtain true even undamaged edges. Chipped pavers are unacceptable.
- (d) Crews shall work on installed pavers, not on sand layer.
- (e) Place pavers and spread and fine grade joint sand over paving surface and sweep into joints.
- (f) Sweep remaining sand over all paving areas and remove from site.
- (g) Replace at no extra cost all whole or cut stones marked as unacceptable.
- (h) Remove cracked, chipped, broken or otherwise damaged paving materials from Site immediately.
- (i) Upon completion, clean in accordance with manufacturer's recommendations.

#### E18.5 Quality Assurance

E18.5.1 All workmanship and all materials furnished and supplied under this Specification are subject to close and systematic inspection and testing by the Contract Administrator including all operations, from the selection and production of materials, through to final acceptance of the Work. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection of approval that may have been previously given. The Contract Administrator reserves the right to reject any materials or works that are not in accordance with the requirements of this specification.

#### E18.6 Measurement and Payment

E18.6.1 Unit Pavers shall be measured on an area basis and paid for at the Contract Unit Price per square metre for the following items of Work, 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 inclusive of bedding sand, joint sand and plastic edge support. The area to be paid for shall be the total installed area of each type of unit paving accepted and measured by the Contract Administrator.

- (a) Items of Work:
  - (i) Heavy Duty Indicator Strip: Broadway Paver, Mahogany Colour
  - (ii) Sidewalk Indicator Strip: Clay Brick Paver, Dark Ironspot
  - (iii) Clay Paver Dark Ironspot
  - (iv) Holland Square Pavers, Buff
  - (v) Holland Square Pavers, Natural
  - (vi) Munic Pavers from stockpile

### **E19. EXTERIOR METAL FABRICATION**

#### E19.1 Description

E19.1.1 Provide all labour, materials, methods, equipment and accessories for the fabrication and installation of tripods.

#### E19.2 References

E19.2.1 American Society for Testing and Materials International, (ASTM)

- (a) ASTM A53/A53M-02, Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
- (b) ASTM A269-02, Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.

- (c) ASTM B221-14 Specification for Aluminum and Aluminum-Alloy. Extruded Bars, Rods, Wire, Profiles, and Tubes.
- (d) ASTM A307-02, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- (e) ASTM F593-17 Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.

E19.2.2 Canadian Standards Association (CSA International).

- (a) CAN/CSA-G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel.
- (b) CAN/CSA-G164-M93(R1998), Hot Dip Galvanized or Irregularly Shaped Articles, or latest.
- (c) CAN/CSA-S16.1-01, Limit States Design of Steel Structures.
- (d) CSA W48-01, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
- (e) CSA W59-1989, R2001, Welded Steel Construction, Metal Arc Welding, Imperial Version.

E19.3 Materials

E19.3.1 Steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade 300W.

E19.3.2 Welding materials: to CSA W59.

E19.3.3 Welding electrodes: to CSA W48 Series.

E19.3.4 Hardware and anchor bolts: to ASTM F593-17.

- (a) Anchor Bolts: stainless steel conc. wedge anchors.

E19.4 Finishes

E19.4.1 To be painted in accordance with Exterior Metal Painting specification.

E19.5 Submittals

E19.5.1 Submit product data and means of removing paint from existing silhouette, round plate and eye piece.

E19.5.2 Submit samples for the following:

- (a) One (1) tripod, full size, unpainted.

E19.5.3 Submit Shop Drawings for the following:

- (a) Tripod.

E19.5.4 Contract Administrator to provide artwork for silhouette and round plate for the two (2) new tripods.

E19.6 Delivery, Storage and Handling

E19.6.1 Deliver materials, suitably packaged, clearly marked indicating manufacturer name and any other identifying symbols or information. Do not deliver materials long before they are required. Cause no delays to scheduling.

E19.6.2 Cover materials with cellophane plastic or bubble wrap designed to protect surfaces without scratching or marring them during transport. Secure wrappings with appropriate tape or adhesives that are sturdy but can easily be removed at the site.

E19.6.3 Leave protective covering in place until final cleaning of site. Provide instructions for removal of protective covering.

E19.6.4 Store materials in a dry location off the ground, and prevent damage.

E19.6.5 Materials that have been left unprotected, exposed to the elements, damaged or deemed unfit for use during storage and delivery will be rejected on site and shall be immediately replaced at no cost.

#### E19.7 Site Conditions

E19.7.1 Make a careful examination of the site and structures and investigate all matters relating to the nature of the work to be undertaken, the means of access and egress, the rights and interests which may be interfered with during the construction of the Work.

E19.7.2 Report any discrepancies or omissions to the Contract Administrator, who will issue written clarification. Oral interpretations or instructions are not acceptable.

#### E19.8 Construction Method

E19.8.1 Carefully remove the six (6) existing tripods on Lily from their concrete pedestals and retain the silhouette, round plate and eye piece from each one.

E19.8.2 Remove paint from silhouette, round plate and eye piece without damaging to metal.

E19.8.3 Obtain approval of submittals and shop drawings prior to ordering materials and commencing fabrication.

E19.8.4 Fabricate tripod pieces in shop and conduct an in-shop review with Contract Administrator prior to fabrication.

E19.8.5 Do welding work in accordance with CSA W59.

E19.8.6 Ensure exposed welds are continuous for length of each joint unless otherwise indicated. File or grind exposed welds smooth and flush.

E19.8.7 De-grease and be-bur all sharp edges in the shop left behind after fabrication is complete, prior to galvanization.

#### E19.9 Installation

E19.9.1 Erect metal work square, plumb, straight and true, accurately fitted, with tight joints and intersections.

E19.9.2 Provide suitable and acceptable means of anchorage, such as dowels, anchor clips, bar anchors, expansion bolts and shields, and toggles.

E19.9.3 Exposed fastening devices to match finish and be compatible with material through which they pass, per the Drawings.

#### E19.10 Acceptance

E19.10.1 Work will be accepted only if it is erected true to the design intent in conformation with shop drawings and site instructions.

#### E19.11 Measurement and Payment

E19.11.1 Supply and installation of tripods shall be measured on a unit basis, and be paid for at the Contract Unit Price per unit for installed tripods, as accepted and measured in the field by the Contract Administrator, for the following Items of Work, 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.

E19.11.2 Items of Work:

- (a) Lily Tripod c/w refurbished silhouette, round plate & eye piece
- (b) Tripod

### **E20. EXTERIOR METAL PAINTING**

E20.1 Description

- E20.1.1 Provide all labour, materials, methods, equipment and accessories for the painting of tripods.
- E20.2 References
- E20.2.1 Painting for Exterior Applications:
- (a) SSPC – Steel Structures Painting Council.
  - (b) CAN/CGSB-1.40-97, Anti-corrosive Structural Steel Alkyd Primer.
  - (c) CAN/CGSB-1.181-92, Ready-Mixed, Organic Zinc-Rich Coating.
- E20.3 Materials
- E20.3.1 Triopd:
- (a) Paint Prep Cleaner: Hi-Lite Solutions Aero-Green 4110 - Paint Prep Cleaner.
  - (b) Primer: Sherwin Williams Pro-Cryl Universal Primer self cross-linking acrylic primer. 1 ct. Wet mils: 5.0 - 10.0 [Dry mils: 1.8-3.6].
  - (c) Top Coat: Sherwin Williams Pro-Cryl Waterbased Alkyd Urethane Enamel. Exterior grade enamel with a urethane modified alkyd resin system. 2 cts. @ Wet mils: 4.0-5.0 [Dry mils: 1.4-1.7] per coat. Black, Semi-Gloss.
- E20.4 Submittals
- E20.4.1 Submit two (2) copies of WHMIS MSDS - Material Safety Data Sheets for each paint product.
- E20.4.2 Submit samples of the following:
- (a) One (1) 330 x 330mm flat bar with primer finish.
  - (b) One (1) 330 x 330 mm flat bar with top coat finish.
- E20.5 Quality Assurance
- E20.5.1 Painter shall be trained and qualified industrial metal painting professionals with more than five (5) years of experience. Shop must be ISO certified and fully equipped to prepare, prime and paint large scale structural metal members and deliver them to site for field erection.
- E20.5.2 All workmanship and all materials furnished and supplied under this specification shall be of the highest standards and are subject to close and systematic inspection and testing by the Contract Administrator including all operations, from the selection of materials, through to final acceptance of the Work.
- E20.5.3 Strict conformance to this specification will be enforced. The Contractor shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection or approval that may have been previously given. The Contract Administrator reserves the right to reject any materials or works that are not in accordance the requirements of this specification.
- E20.6 Construction Method
- E20.6.1 Ensure that sample is approved prior to proceeding.
- E20.6.2 Preparation, priming and painting of members shall be completed in the controlled environment of a paint shop if at all possible. If painting operations must occur in the field Contract Administrator to review the Work and work materials, prior to proceeding.
- E20.6.3 Debur and degrease metal surfaces using products approved by the paint manufacturer.
- E20.6.4 Cleaning of non galvanized metal:
- (a) Conduct abrasive blasting to fully metal.

- (b) Clean metal to white metal by dry abrasive blasting. Ensure surface is free of grease, rust, or scale.
  - (c) Review cleaned surface with Contract Administrator prior to proceeding with painting.
- E20.6.5 Cleaning of Galvanized Metal:
  - (a) Clean galvanized metal with paint prep cleaner.
  - (b) Review cleaned surface with Contract Administrator prior to proceeding with painting.
- E20.6.6 Apply paint within 12 hours of cleaning.
- E20.6.7 Paint shall be stored, thinned, handled, mixed and applied in accordance with SSPC-PA 1, Shop Field and Maintenance Coating of Steel, and per the express written specifications of the manufacturer.
- E20.6.8 Apply paint coats only when temperatures can be controlled or predicted to be within the manufacturers acceptable window. When there is a drop in temperature after the coating is applied adjust recoat time period per manufacturers specifications.
- E20.6.9 Paint shall be applied within 24 hours of completion of surface preparation.
- E20.6.10 Use spray gun system for main application and brushes of suitable size for field touch ups. Point spray gun at outside edges coating edges and seams thoroughly prior to coating remaining areas.
- E20.6.11 Touch-up runs and snags immediately while paint application is in progress.
- E20.6.12 Application related failures shall be corrected prior to the application of a subsequent coat.
- E20.6.13 Where excessive coating thickness produces 'Mud Cracking' coating shall be scraped back to bare metal, and sanded to a soundly bonded coating layer then reapplied to the specified thickness.
- E20.6.14 Apply as many coats as necessary to ensure even and proper coating of metal, to be reviewed and approved by the Contract Administrator.
- E20.7 Delivery to Site
  - E20.7.1 Allow all painted members to fully cure before preparing for shipment.
  - E20.7.2 Once fully cured wrap members in cellophane plastic or bubble wrap designed to protect finished surfaces without scratching or marring them during transport. Secure wrappings with appropriate tape or adhesives that are sturdy but can easily be removed at the site.
  - E20.7.3 Deliver to site with equipment suitable for carrying steel loads and capable of hoisting steel members over other features into their final locations.
- E20.8 Touch-Ups
  - E20.8.1 Ensure all welding work and mechanical fasteners are wiped clean and free of oil, debris and grit.
  - E20.8.2 Apply touch-ups with appropriately sized brushes to get into all grooves and voids.
  - E20.8.3 Thickness of touch-ups shall match thickness of adjacent paint.
  - E20.8.4 Once all touch-ups are complete contact Contract Administrator for review and approval of metal work and coating.
- E20.9 Standard of Acceptance
  - E20.9.1 Paint finishes shall be accepted if they meet the performance standards of the product supplier and match the sample accepted as the standard of performance at the commencement of painting.
  - E20.9.2 Painted surfaces shall be warranted against corrosion, peeling and general failure for two (2) years after date of total performance.

## E20.10 Final Acceptance

E20.10.1 Provide the City of Winnipeg with maintenance manual inserts detailing products and methods used to achieve metal painting finishes.

E20.10.2 Provide City of Winnipeg with one (1) gallon of each type of paint.

## E20.11 Measurement and Payment

E20.11.1 No payment will be made for the painting of tripods. Painting of tripods shall be considered incidental to the Contact Unit Price "Lily Tripod c/w refurbished silhouette, round plate & eye piece" and "Tripod".

## **E21. PLANTING MEDIUM AND FINISHED GRADING**

### E21.1 Description

E21.1.1 Provide all labour, materials, methods, equipment and accessories for the supply and installation of planting medium for structural soil cells.

### E21.2 References

E21.2.1 Agriculture and Agri-Food Canada

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

E21.2.2 Canadian Council of Ministers of the Environment (CCME) Guidelines.

E21.2.3 The City of Winnipeg Standard Construction Specifications

.1 CW 1130 – Site Requirements

.2 CW 3540 – Topsoil and Finish Grading for Establishment of Turf Areas

### E21.3 Submittals

E21.3.1 Submit 0.5kg sample of planting medium 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. Submit samples for:

(a) Clay-Rich Planting Medium for Structural Soil Cells and tree planting bed.

E21.3.2 Submit two (2) copies of soil analysis and recommendations for corrections to Contract Administrator.

E21.3.3 Submit two (2) litre sample of compost to Contract Administrator with manufacturers literature and material certification that the product meets the CCME guidelines.

### E21.4 Quality Assurance

E21.4.1 Inform Contract Administrator of proposed source of materials to be supplied and provide a sample for review by Contract Administrator prior to installation.

E21.4.2 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.

E21.4.3 Test planting medium for nutrients N, P, K, micronutrients, soluble salt content, pH value and OM (organic matter).

E21.4.4 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.

### E21.5 Delivery, Storage and Handling

E21.5.1 Store materials in a dry area, protected from freezing, sedimentation and contamination.

E21.5.2 Deliver and store fertilizer in waterproof bags labeled with weight, analysis and name of manufacturer.

E21.6 Materials

E21.6.1 Black Topsoil: In accordance with CW 3540 for topsoil except organic matter to be in the range of 5-10%.

E21.6.2 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.

E21.6.3 Compost:

- (a) mixture of soil, decomposing organic matter used as fertilizer, mulch or soil conditioner.
- (b) Dark brown in colour, no objectionable odour.
- (c) Processed organic matter containing 40% or more organic matter as determined by Walkley-Black or Lost On Ignition (LOI) test.
- (d) Must be sufficiently decomposed (i.e. stable) so that any further decomposition does not adversely affect plant growth (C:N ratio below 25:1) and contain no toxic or growth inhibiting contaminants.
- (e) Composed bio-solids to: CCME Guidelines for Compost Quality, Category A.

E21.6.4 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%

E21.6.5 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 m<sup>2</sup> which is 8 pounds per 100 sq ft.

E21.6.6 Clay-Rich Planting Medium for Structural Soil Cells and Tree Planting Beds: planting medium for structural soil cells and tree wells shall be a blend of black topsoil, compost, and coarse sand mixed to the following proportion:

<u>Material</u>	<u>% by volume</u>
Black Topsoil	70%
Compost	15%
Coarse Sand	15%

E21.7 Construction Method

E21.7.1 Excavation

- (a) Excavate tree planting beds by hand or using approved soft digging technology unless otherwise directed by Contract Administrator. 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.

E21.7.2 Planting Medium Placement

- (a) Place planting medium in uniform layers over approved, unfrozen sub-grade, to the depth indicated on the Drawings.
- (b) Eliminate rough spots and low areas, Prepare a loose, friable bed, boot firm and level.

E21.7.3 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.

E21.7.4 Finished Grading and Rolling

- (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.

E21.8 Surplus Material

- E21.8.1 Dispose of unused planting medium off site in accordance with CW1130.

E21.9 Cleaning

- E21.9.1 Perform cleaning to remove accumulated environmental dirt from all paved surfaces of building faces. Remove surplus materials, rubbish, tools and equipment barriers.

E21.10 Measurement and Payment

- E21.10.1 Supply and placement of planting medium mix for soil cells and tree planting beds shall be measured on a volume basis and paid for at the Contract Unit Price per cubic metre as "Clay-Rich Planting Medium". The volume to be paid for shall be the total cubic metre volume installed in accordance with this specification, accepted and measured by the Contract Administrator.

**E22. CLEARING & GRUBBING OF TREES**

E22.1 Description

- E22.1.1 Provide all labour, materials, methods, equipment and accessories for the clearing and grubbing of existing trees in existing tree vault and in concrete sidewalk.

E22.2 Definitions

- E22.2.1 Clearing consists of cutting off trees and brush vegetative growth to not more than specified height above ground and disposing of felled trees, previously uprooted trees and stumps, and surface debris.
- E22.2.2 Grubbing consists of excavation and disposal of stumps and roots boulders and rock fragments of specified size to not less than 300mm below existing ground surface.

E22.3 Storage and Protection

- E22.3.1 Prevent damage to trees, vault covers, pavers, sidewalks, curbs, roads, buildings, utility lines, and all other site appurtenances which are to remain. Repair damaged items to approval of Contract Administrator at no cost to the City.

E22.4 Preparation

- E22.4.1 Inspect site and review items designated to remain with the Contract Administrator.



- E22.4.2 Locate and protect utility lines: preserve in operating condition active utilities traversing site. Notify Contract Administrator immediately of damage to or when unknown existing utility lines are encountered. When utility lines which are to be removed are encountered within area of operations, notify Consultant Administrator in ample time to minimize interruption of service.
- E22.4.3 Notify utility authorities and have all utilities clearly located on site before commencing clearing and grubbing operations.
- E22.4.4 Keep roads and walks free of dirt and debris at all times.
- E22.5 Construction Method
- E22.5.1 Carefully remove indicator strip unit pavers and concrete vault cover from tree vault and store in a protected location for re-use.
- E22.5.2 Clearing
- (a) Clearing includes felling, trimming, and cutting of trees into sections and satisfactory disposal of trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within cleared areas. Remove all trees as indicated on the Drawings.
- E22.5.3 Grubbing
- (a) Remove and dispose of roots larger than 7.5cm in diameter, matted roots, and designated stumps from indicated grubbing areas.
- (b) Grub out stumps and roots to not less than 200mm below ground surface.
- (c) Fill depressions made by grubbing with compacted planting medium or suitable material and compact to the acceptance of the Contract Administrator. At vault covers fill to the underside of the vault cover lip so that there is no void.
- (d) and to make new surface conform with existing adjacent surface of ground.
- E22.5.4 Re-install vault covers from stockpile. Ensure that existing tree vault lip is free of debris and vault cover does not wobble. Shim as required to the acceptance of the Contract Administrator.
- E22.5.5 Fill in void in vault cover opening or concrete sidewalk with black granite mulch to Tree Planting Specification.
- E22.5.6 Re-install unit pavers from stockpile in running bond pattern over bedding sand and sweep in joint sand. Ensure pavers are flush with top of vault cover and join seamlessly with existing indicator strip pavers to the acceptance of the Contract Administrator.
- E22.6 Finished Surface
- E22.6.1 Leave finished surface clean and free of construction materials and debris.
- E22.7 Measurement and Payment
- E22.7.1 Clearing and grubbing of existing trees in concrete vault and in concrete sidewalk shall be measured on a unit basis for "Lily: Clear & Grub Tree incl. removal & reinstallation of vault cover, clay pavers, compacted planting medium infill and granite mulch infill", and be paid for at the Contract Unit Price per unit in accordance with this specification, accepted and measured by the Contract Administrator.

## **E23. TREE REPLACEMENTS AT EXISTING TREE VAULTS**

- E23.1 Description
- E23.1.1 Provide all labour, materials, methods, equipment and accessories for the clearing and grubbing of existing trees and the installation of new trees at existing tree vaults.
- E23.2 Definitions

- E23.2.1 Clearing consists of cutting off trees and brush vegetative growth to not more than specified height above ground and disposing of felled trees, previously uprooted trees and stumps, and surface debris.
- E23.2.2 Grubbing consists of excavation and disposal of stumps and roots boulders and rock fragments of specified size to not less than 300mm below existing ground surface.
- E23.3 Storage and Protection
- E23.3.1 Prevent damage to trees, vault covers, tree grates, tree grate frames, pavers, sidewalks, curbs, roads, buildings, utility lines, and all other site appurtenances which are to remain. Repair damaged items to approval of Contract Administrator at no cost to the City.
- E23.4 Preparation
- E23.4.1 Inspect site and review items designated to remain with the Contract Administrator.
- E23.4.2 Locate and protect utility lines: preserve in operating condition active utilities traversing site. Notify Contract Administrator immediately of damage to or when unknown existing utility lines are encountered. When utility lines which are to be removed are encountered within area of operations, notify Consultant Administrator in ample time to minimize interruption of service.
- E23.4.3 Notify utility authorities and have all utilities clearly located on site before commencing clearing and grubbing operations.
- E23.4.4 Keep roads and walks free of dirt and debris at all times.
- E23.5 Construction Method
- E23.5.1 Carefully remove indicator strip unit pavers and concrete vault cover from tree vault and store in a protected location for re-use.
- E23.5.2 Carefully remove tree grate and tree grate frame and from tree vault and store in a protected location for re-use.
- E23.5.3 Clearing
- (a) Clearing includes felling, trimming, and cutting of trees into sections and satisfactory disposal of trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within cleared areas. Remove all trees as indicated on the Drawings.
- E23.5.4 Grubbing
- (a) Remove and dispose of roots larger than 7.5cm in diameter, matted roots, and designated stumps from indicated grubbing areas.
- (b) Grub out stumps and roots to not less than 200mm below ground surface.
- E23.5.5 Carefully remove loose material by hand without damage to existing geotech fabric.
- E23.5.6 Install new tree in vault on compacted soil mound and in clay-rich planting medium to Tree Planting Specification. Re-set geotech fabric as required.
- E23.5.7 For tree vaults with tree grates and frames, re-install tree grates and frames from stockpile. Ensure that frame and grate rest on tree vault lip free of debris and do not wobble. Shim as required to the acceptance of the Contract Administrator.
- E23.5.8 For tree vaults with vault covers, re-install vault covers from stockpile. Ensure that existing tree vault lip is free of debris and vault cover does not wobble. Shim as required to the acceptance of the Contract Administrator.
- E23.5.9 For tree vaults with vault covers re-install unit pavers from stockpile in running bond pattern over bedding sand and sweep in joint sand. Ensure pavers are flush with top of vault cover and join seamlessly with existing indicator strip pavers to the acceptance of the Contract Administrator.

## E23.6 Finished Surface

E23.6.1 Leave finished surface clean and free of construction materials and debris.

## E23.7 Measurement and Payment

E23.7.1 Clearing and grubbing of existing trees and the installation of new trees at existing tree vaults shall be measured on a unit basis, and be paid for at the Contract Unit Price per unit in accordance with this specification, accepted and measured by the Contract Administrator, for the following Items of Work, 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.

### E23.7.2 Items of Work:

- (a) Lily: Clear, Grub & Replacement of Tree at Tree Grate incl. removal & reinstallation of tree grate, geotech re-set, clay-rich planting medium and compacted soil mound
- (b) Lily: Clear, Grub & Replacement of Tree at Vault Cover incl. removal & reinstallation of vault cover & pavers, geotech re-set, clay-rich planting medium and compacted soil mound

E23.7.3 The cost for new tree shall be considered incidental to the Work in this Specification Section as it is covered under the Tree Planting Specification.

## **E24. TREE PLANTING**

### E24.1 Description

E24.1.1 Provide all labour, materials, methods, equipment and accessories for the supply and installation of trees and black granite mulch.

### E24.2 References

E24.2.1 Agriculture and and Agri-Food Canada (AAFC)

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

E24.2.2 Canadian Nursery Landscape Association (CNLA)

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

E24.2.3 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.

E24.2.4 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

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

### E24.3 Submittals

E24.3.1 Submit product data for:

- (a) Fertilizer.

### E24.4 Source Quality Control

E24.4.1 Obtain approval from Contract Administrator of plant material at source.

E24.4.2 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.

E24.4.3 Acceptance of plant material at source does not prevent rejection on Site prior to or after planting operations.

E24.4.4 Plant material imported from other nations will not be accepted.

- E24.4.5 Bare root plant material will not be accepted.
- E24.5 Storage and Protection
- E24.5.1 Coordinate the shipping of plants and excavation of tree vaults to ensure minimum time laps between digging and planting.
- E24.5.2 Protect plant material from frost, excessive heat, wind and sun during delivery.
- E24.5.3 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.
- E24.5.4 Protect stored plant material from frost, wind and sun as follows:
- (a) For balled and burlapped and wire basket rootballs, place to protect branches from damage. Maintain moisture level in root zones.
- E24.5.5 Remove broken and damaged roots with sharp pruning shears. Make clean cut and cover cuts over 20mm (3/4") diameter with wound dressing.
- E24.5.6 Keep roots moist and protect from sun and wind. Heel-in trees that cannot be planted immediately in shaded areas and water well.
- E24.6 Scheduling
- E24.6.1 Order plant material as soon as possible after award of contract to ensure plant availability. Request substitutes as required.
- E24.6.2 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.
- E24.7 Warranty of Nursery Stock
- E24.7.1 For all plant material a two (2) year warranty period is required.
- E24.7.2 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, which stock shall be replaced at the cost of The City.
- E24.7.3 At the end of the two (2) year warranty period an inspection will be conducted by Contract Administrator.
- E24.7.4 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.
- E24.8 Replacements
- E24.8.1 During warranty period, remove and replace any plant material that has died or failed to grow satisfactorily, at no cost to the City, as directed by the Contract Administrator.
- E24.8.2 A two (2) year warranty period shall be required on all replacement plant material.
- E24.8.3 All replacement plant material shall be the same size and species as specified, and shall be supplied and planted in accordance with the original Drawings and Specifications.

E24.8.4 Should the replaced plant material not survive, the Contractor will be responsible for a third replacement and a two (2) year warranty period shall be required.

#### E24.9 Plant Material

E24.9.1 Type of root preparation, sizing, grading and quality shall comply to the Canadian Standards for Nursery Stock.

E24.9.2 Source of plant material: grown in Zone 3 only in accordance with Plant Hardiness Zones in Canada. Plant material must be planted in zone indicated as appropriate for its species.

E24.9.3 Plant material free of disease, insects, defects or injuries and structurally sound with strong fibrous root system.

E24.9.4 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.

E24.9.5 Refer to Plant Specification List on the Drawings and the Drawings for species, quantities, size and quality of plant materials.

E24.9.6 Mulch: black granite mulch

#### E24.10 Water

E24.10.1 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.

E24.10.2 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.

E24.11 Planting Medium: backfill with planting medium as specified in Planting Medium Specification.

E24.12 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 m<sup>2</sup> which is 8 pounds per 100 sq ft.

E24.13 Granite Mulch: granite mulch, black in colour.

#### E24.14 Pre-Planting Preparation

E24.14.1 Obtain approval from Contract Administrator of finish grading, and planting medium installation prior to commencing Work in this section.

E24.14.2 Ensure plant material is acceptable to the Contract Administrator.

E24.14.3 Remove damaged roots and branches from plant material with sharp clean equipment treating wounds as necessary to maintain plant health.

E24.14.4 Apply anti-desiccant to deciduous trees in leaf in accordance with manufacturer's instructions.

#### E24.15 Plant Material Layout

E24.15.1 Prepare planting areas. Refer to Planting Medium Specification.

E24.15.2 For individual trees:

(a) Excavate tree pits to depths and widths indicated on the Drawings.

(b) Remove rocks, roots, debris and toxic material from the tree pit.

E24.15.3 Remove water that has entered the excavated tree pit prior to planting. Notify Contract Administrator if water source is groundwater.

#### E24.16 Planting

- E24.16.1 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.
- E24.16.2 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.
- E24.16.3 Plant vertically in locations as indicated. Orient plant material to give best appearance in relation to structure, roads and walks.
- E24.16.4 Set plants and trees at elevations indicated on the drawings with no more than 50mm of soil above the root flair. Review with City Forestry representative and Contract Administrator when trees are on site, prior to installation.
- E24.16.5 For trees:
- (a) Prepare compacted soil mound below tree root ball. Ensure top of mound is set to suit the depth of rootball.
  - (b) 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.
- E24.16.6 Water plant material thoroughly. Report extreme ponding in planters indicative of malfunctioning drains to the Contract Administrator immediately.
- E24.16.7 After soil settlement has occurred, fill with soil to finish grade.
- E24.16.8 Dispose of burlap, wire and container material off Site.
- E24.17 Pruning
- E24.17.1 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.
- E24.18 Maintenance
- E24.19 Maintain plant material from date of planting to the end of the two (2) year warranty period. Refer to Landscape Maintenance Specification.
- E24.20 Measurement and Payment
- E24.20.1 Supply and installation of trees shall be measured on a unit basis, and be paid for at the Contract Unit Price per unit for installed trees, as accepted and measured in the field by the Contract Administrator, for the following Items of Work, 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.
- E24.20.2 Items of Work:
- (a) Trees
    - (i) Gladiator Crabapple
    - (ii) Lily: Prairie Horizon Alder
    - (iii) Lily: Boulevard Linden
    - (iv) Lily: Brandon Elm
- E24.20.3 Black granite mulch will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Granite Mulch". The area to be paid shall be the total square metre area in accordance with this specification, accepted and measured by the Contract Administrator.

## **E25. SITE FURNISHINGS**

- E25.1 Description

- E25.1.1 Provide all labour, materials, methods, equipment and accessories for the supply and install of trench grate with frame and tree grate.
- E25.2 Submittals
- E25.2.1 Submit product data for trench grate with frame and tree grate. Indicate sizes, assembly, and installation details.
- E25.3 Materials
- E25.3.1 Trench Grate c/w Frame & Tamper Proof Bolts
- (a) Trench Grate: 203 x 457 trench grate 'tidal wave' grey iron, standard raw finish.
  - (b) Trench Grate Frame: +/- 8" wide frame, mild steel, standard raw finish, light vehicular load classification, embedded into concrete sidewalk.
  - (c) Grate to Frame Fastening: fasten grates to frame with tamperproof screws type and size as recommended by manufacturer.
  - (d) Available from Parkworks by MAKR, contact: Brennan Fedak 1-431-334-9627, or approved equal.
- E25.3.2 Lily Tree Grate
- (a) 48 x 48" Metropolitan tree grate model R-8706-1A available from Reliance Foundry 1-877-789-3245, or approved equal.
- E25.4 Construction Methods
- E25.4.1 All work is to be located and installed in accordance with the Drawings and manufacturers specifications.
- E25.4.2 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.
- E25.4.3 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.
- E25.5 Measurement and Payment
- E25.5.1 The supply and installation of trench grates c/w frame & tamper proof bolts shall be paid for on a lineal metre basis and shall be paid for at the Contract Unit Price per lineal metre 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.
- E25.5.2 Items of Work:
- (a) Trench Grate c/w Frame & Tamper Proof Bolts
- E25.5.3 The supply and installation of lily tree grate shall be paid for on a unit each basis and shall be paid for at the Contract Unit Price per unit each 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.
- E25.5.4 Items of Work:
- (a) Lily Tree Grate: 1.2 x 1.2m metropolitan grate model # R8706-1A

## **E26. LANDSCAPE MAINTENANCE**

### **E26.1 Description**

- E26.1.1 Provide all labour, materials, methods, equipment and accessories for the maintenance of trees following acceptance of the plant material to start warranty.

E26.1.2 In general, the Work shall include:

- (a) Fertilizing
- (b) Watering
- (c) Weed Control
- (d) Pest and disease Control
- (e) Winter Preparation

E26.1.3 Maintenance shall be performed on a bi-weekly basis at a minimum.

E26.2 Maintenance and Warranty Period

E26.2.1 Thirty (30) 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.

E26.2.2 The maintenance and warranty period shall begin following acceptance of plant material by Contract Administrator and shall be for a period of two (2) years.

E26.3 Submittals

E26.3.1 Submit maintenance log to Contract Administrator indicating date, times, employee, start time, stop time and maintenance activities.

E26.3.2 Payment will not be processed without receipt of maintenance logs.

E26.4 Materials and Equipment

E26.4.1 Materials shall conform to the requirements of related Specification sections.

E26.4.2 Provide all equipment to properly execute Work. Maintain such equipment in a workable, safe condition while in use during this project.

E26.4.3 Contract Administrator shall review equipment to be used to execute Work prior to execution.

E26.5 Method

E26.5.1 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) Provide maintenance schedule to Contract Administrator prior for the two (2) year maintenance period.
- (c) Contractor shall notify Contract Administrator of the exact time Contractor proposes to commence each application.
- (d) Schedule operations in accordance with growth, health, weather conditions, and use of Site.
- (e) Perform each operation continuously and completely within a reasonable time period.
- (f) Store equipment and materials off Site.
- (g) Collect and dispose of debris or excess material on the day the maintenance is undertaken.

E26.5.2 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.

- (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 soil 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.

#### E26.6 Measurement and Payment

E26.6.1 Landscape maintenance shall be paid for on a lump sum basis for the items of work listed below and 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 and accepted by the Contract Administrator.

Items of Work:

- (i) Year One Landscape Maintenance
- (ii) Year Two Landscape Maintenance

#### **E27. ELECTRICAL WORKS**

##### E27.1 General Requirements

E27.1.1 The specification covering the General Conditions of the Contract, General Specifications, and all associated sections form an integral part of this specification and shall be read in conjunction herewith.

##### E27.2 Scope

E27.2.1 Provide all materials, labour, plant and equipment required for a complete and working installation as herein specified and as shown on the drawings.

E27.2.2 The electrical installation shall be in accordance with the current edition of the Canadian Electrical Code, Provincial and Municipal codes and regulations.

E27.2.3 Obtain all permits, approvals and pay all related fees required for this installation.

E27.2.4 All equipment supplied under this Contract shall be new and be C.S.A. approved.

E27.2.5 Arrange for, and coordinate, rough-in and final inspections with the City of Winnipeg and Contract Administrator.

### E27.3 Definitions

E27.3.1 The following are definitions of terms and expressions used in the specification:

- (a) CONTRACT ADMINISTRATOR means Electrical Engineering Contract Administrator:
- (b) INSPECTION AUTHORITY means agent of any authority having jurisdiction over construction standards associated with any part of electrical work on site.
- (c) SUPPLY AUTHORITY means electrical power utility company responsible for delivery of electrical power to project.
- (d) ELECTRICAL CODE means as shown on contract drawings or noted in Contract Documents.
- (e) TYPE TESTED means that each piece of equipment produced by Manufacturer is not fully tested. An original piece with similar arrangement has been fully tested and results of that test are available.
- (f) PROVIDE means to supply, install and leave in working order all materials and necessary wiring, supports, access panels, etc., as necessary for equipment indicated.

### E27.4 Examination

E27.4.1 Examine the architectural, structural, and landscaping drawings to ensure that the work under this Contract can be satisfactorily carried out. Report any discrepancies to the Contract Administrator prior to submission of bid.

E27.4.2 Examine the site, local conditions and all existing apparatus if any to be re-used and verify that the condition of this equipment is suitable for its intended use in the new construction.

### E27.5 Supervision

E27.5.1 Supervise the work at all times through a responsible and competent supervisor.

E27.5.2 Full co-operation shall be shown with other trades to facilitate installations and to avoid delays in carrying out the work.

### E27.6 Accuracy of Data

E27.6.1 Drawings are schematic; exact locations, distances, levels and other dimensions shall be governed by the building as constructed.

E27.6.2 Outlets or equipment shall be moved to any point within a 10' radius when the Contract Administrator requests relocation before the work has been substantially completed, without additional cost.

E27.6.3 Branch circuit wiring shall be installed with circuits arranged exactly as shown on the drawings. Conduit and cable runs shall be modified to suit the installation.

### E27.7 Approval of Material

E27.7.1 Request for approval of material as equals or alternates to that specified shall be submitted to the Contract Administrator with a stamped self-addressed envelope and performance specifications ten (10) working days prior to the bid submittal. Samples shall be provided on request.

E27.7.2 Approvals shall be transmitted electronically providing all pertinent information is included for a complete review by the Contract Administrator.

#### E27.8 Shop Drawings

E27.8.1 Submit shop drawings of electrical equipment to the Contract Administrator for review. Fabrication of equipment shall not commence until the Contract Administrator has reviewed shop drawings of such equipment. Two (2) sets shall be submitted with local Inspection Department approval where required.

E27.8.2 Shop drawings shall be transmitted electronically and in PDF format and Contractor shall include their review confirmation.

E27.8.3 Electronic Submissions (.pdf only).

- (a) Send electronic shop drawings submittals to [wpg.shopdrawing@mcw.com](mailto:wpg.shopdrawing@mcw.com) only, please do not copy staff members directly.

#### E27.9 "As-Built" Drawings

E27.9.1 Contractor shall maintain accurate "as-built" drawings on site and shall be present for review at each site review. Submit these record drawings in AutoCAD 2010 or newer format for review at the completion of the project. Note that changes to architectural and structural floor plans must be included. (A minimum of \$1,000.00 per drawing shall be held-back until all drawings are submitted and deemed complete.) The Contract Administrator will not perform final inspections nor certify for occupancy until the "as-built" drawings have been received, reviewed and accepted. After acceptance of "as-built" drawings by the Contract Administrator, provide one (1) complete set on CD-ROM and three (3) sets of prints.

E27.9.2 As-builts shall include circuiting of new and existing equipment to remain. Transfer changes to electronic disc AutoCAD file. Submit disc and hard copy for final review and submission to Owners.

E27.9.3 Submit a Certificate of Inspection from the local Inspection Authority upon completion of work and include with As-builts.

E27.9.4 The Contract Administrator reserves the right to recommend that a portion of the Contract funds be withheld pending submission of acceptable as-built drawings.

#### E27.10 Test

E27.10.1 The electrical installation shall be completely tested demonstrating that the equipment and systems installed perform in the manner intended.

#### E27.11 Guarantee

E27.11.1 The satisfactory operation of all work shall be guaranteed for a period of 12 calendar months after final acceptance of the building.

#### E27.12 Request for Change

E27.12.1 All quotations in response to request for change shall be submitted complete with an itemized cost breakdown of all materials and labour required in the change.

#### E27.13 Request for Information

E27.13.1 Allow ten (10) working days for MCW/AGE to respond to all requests for information.

E27.13.2 All requests for information shall be reviewed by the Contractor prior to submitting to ensure the information is not on the drawings or specification. Point 1

#### E27.14 Grounding

E27.14.1 The entire installation shall be grounded in accordance with the Canadian Electrical Code.

## E27.15 Workmanship

- E27.15.1 Install equipment, conduit and cables in a workmanlike manner to present a neat appearance to the satisfaction of the Contract Administrator. Install conduit and cable runs parallel and perpendicular in chases, behind furring or above ceilings. In areas where systems are to be exposed (electrical room only), install neatly and group to present a tidy appearance.
- E27.15.2 Install equipment and apparatus requiring maintenance, adjustment or eventual replacement with adequate clearances and accessibility for same.
- E27.15.3 Include, in the work, all requirements shown on the shop drawings or manufacturers' installation instructions.
- E27.15.4 Replace work unsatisfactory to the Contract Administrator without extra cost.

## E27.16 Identification of Equipment

- E27.16.1 All equipment, including receptacles, shall be identified with engraved lamacoid nameplates either screwed or riveted in place. Where Phenolic plastic coverplates are utilized, the circuit identification to be attached to the outlet box, visible when the coverplate is removed.
- E27.16.2 The utilization of Dynamo 6000, P-Touch or equal is acceptable for receptacle.
- E27.16.3 Wording for coverplates shall be confirmed by Contract Administrator.

## E27.17 Cutting and Patching

- E27.17.1 Arrange and pay for all cutting and patching as required for the electrical installation

## E27.18 Wiring Methods

- E27.18.1 Unless otherwise shown on the drawings, all wires shall be copper, minimum #12 AWG with 90°C x-link insulation. Wiring to be installed in conduit.
- E27.18.2 All wiring in finished areas shall be concealed. Conduits shall be run at right angles to the building lines.
- E27.18.3 Conduit and wiring shall be grouped where possible and clipped in a neat and workmanlike manner.
- E27.18.4 Conduit runs shall be installed and inspected before runs are installed to ensure conformance with Item 5 herein.
- E27.18.5 Main underground wiring shall be run in 53mm (2") red PVC conduit.
- E27.18.6 Underground wiring shall be suitable for installation in wet areas, such as RWU90 or equivalent.
- E27.18.7 U/G wiring shall be as specified on the drawings. Utilize #12AWG RW90 Cu. for connection to luminaires and wiring devices.

## E27.19 Mounting

- E27.19.1 Mounting height of equipment is from finished floor to centerline of equipment unless specified or indicated otherwise.
- E27.19.2 If mounting height of equipment is not indicated, verify with Contract Administrator before proceeding with installation.
- E27.19.3 Install electrical equipment at the following heights unless indicated or directed otherwise.
  - (a) .1 As per landscape details and elevations.

## E27.20 Outlet Boxes

E27.20.1 Outlet, junction, and switch boxes shall be galvanized pressed steel of size and type to suite each individual application.

#### E27.21 Miscellaneous Apparatus and Appliances

E27.21.1 Provide all required electrical devices, components, conduits, fittings, wiring, disconnects, and miscellaneous equipment to make all connections to equipment.

E27.21.2 Be familiar with the apparatus being supplied and carefully coordinate and cooperate with the supplier/installer to ensure a proper and complete installation.

#### E27.22 Panelboards

E27.22.1 Circuit breakers shall be bolt on moulded case with thermal breakers rated at 10,000A symmetrical.

E27.22.2 Affix typewritten directory to the inside of the panelboard indicating loads controlled by each circuit.

E27.22.3 Revise the directory in existing panels to suit revised circuiting (typewritten). Place existing directory behind new directory for verification by Contract Administrator.

#### E27.23 Wiring Devices

E27.23.1 Wet location covers shall be equal to Cooper, Metal WeatherBox While-In-Use protective covers, WIUMV-1 for vertical mounting and WIUMH-1 for horizontal mounting. Plastic covers will not be accepted.

#### E27.24 Lighting

##### E27.24.1 General

(a) Supply and install all luminaires complete with lamps. All new luminaires shall be provided with Driver or electronic ballast, Power Smart approved.

##### E27.24.2 Accessories

(a) Provide accessories as indicated.  
(b) Drivers used in exterior luminaires shall be rated at -40°C (-4°F) starting.

##### E27.24.3 Site Lighting

(a) Provide post top, landscape and roadway luminaires as indicated.  
(b) Coordinate with the Contractor to provide concrete bases for pole-mounted luminaires and bollards as detailed. Anchor bolts to be designed to suit local wind conditions.  
(c) Provide a hand hole, complete with gasketed cover and ground lug on each pole. Poles shall be supplied by Valmont. Coordinate with City of Winnipeg for exact product information.  
(d) Pole shall be provided with bonding lugs.

##### E27.24.4 LED Lighting

(a) All LED lighting shall have the following I.E.S. testing to be considered for installation.  
(b) LM 80 08 Approved methods measuring lumen maintenance for SSL light sources.  
(c) LM 79 08 Approved methods for electrical photo and metric measurements of solid state lighting products.  
(d) All LED lamps and drivers shall have minimum 5 year warranty with minimal hours of operation of 50,000 hours or equal to luminaires hours.  
(e) Heat dissipation and maximum heat build up shall be submitted for review.

##### E27.24.5 Installation (Luminaires)

- (a) Install luminaires at locations indicated, complete with all wiring, connections, fittings, hangers, aligners, box covers and accessories, as required.
- (b) Install luminaires and lens materials in architectural details, as indicated.
- (c) Install luminaires parallel with building lines. Wall-mounted luminaires shall be installed plumb.
- (d) Review all ceiling type, construction details and mounting arrangements before placing luminaire orders and ensure that all mounting assemblies, frames, rings and similar features are included for and match the required installation.
- (e) All luminaires and assemblies shall be properly secured and supported. Support luminaires independent of the ceiling construction, complete with all fasteners, framing and hangers, as may be required. Do not secure luminaires to mechanical ductwork or other vibration producing apparatus, unless specifically detailed on the drawings.
- (f) Where a luminaire is suspended from the ceiling using a self-aligning box cover, an additional ground wire from the outlet box to the luminaire shall be provided.
- (g) Coordinate the installation of luminaires with the work of other trades, ensuring that the necessary depths and mounting spaces are provided. Luminaires which cannot be installed due to a conflict with structural members, pipes or ductwork shall be relocated to a more suitable location, as directed by the Contract Administrator and/or Contract Administrator.
- (h) Install post top, landscape and roadway luminaires plumb.

E27.24.6 Wiring

- (a) Connect luminaires to lighting circuits as indicated.
- (b) Provide an insulated bond wire as specified in each under ground conduit connected to the pole grounding lug.

E27.24.7 Tests

- (a) Perform tests in accordance with Section 26 00 10.
- (b) Check luminaires and replace defective lamps, ballasts, lenses and accessories.

E27.24.8 Cleaning

- (a) Prior to take-over of the project, clean the lenses and reflectors of all luminaires with a damp cloth to remove dust, smudges and fingerprints.