



THE CITY OF WINNIPEG

TENDER

TENDER NO. 1-2024

**2024 LOCAL STREET RENEWAL PROGRAM – CHARLES STREET AND VARIOUS
OTHER LOCATIONS**

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PART B - BIDDING PROCEDURES

B1. CONTRACT TITLE

B1.1 2024 Local Street Renewal Program – Charles Street and Various Other Locations

B2. SUBMISSION DEADLINE

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, March 21, 2024.

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

B3. SITE INVESTIGATION

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

B3.2 The Bidder is responsible for inspecting the Site, the nature of the Work to be done and all conditions that might affect their Bid or their performance of the Work, and shall assume all risk for conditions existing or arising in the course of the Work which have been or could have been determined through such inspection.

B4. ENQUIRIES

B4.1 All enquiries shall be directed to the Contract Administrator identified in D5.1.

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

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

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

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

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

B5. CONFIDENTIALITY

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

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

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

B6. ADDENDA

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

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

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

B6.4 The Bidder is responsible for ensuring that 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.

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

B6.6 Notwithstanding B4, enquiries related to an Addendum may be directed to the Contract Administrator indicated in D5.

B7. SUBSTITUTES

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

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

B7.3 Requests for approval of a substitute will not be considered unless received in writing by the Contract Administrator at least five (5) Business Days prior to the Submission Deadline.

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

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

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

B8. BID COMPONENTS

- B8.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
 - (b) Form B: Prices;
 - (c) Form G1: Bid Bond and Agreement to Bond.
- B8.2 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely.
- B8.3 The Bid shall be submitted electronically through MERX at www.merx.com.
- B8.3.1 Bids will **only** be accepted electronically through MERX.
- B8.4 Bidders are advised that inclusion of terms and conditions inconsistent with the Tender document, including the General Conditions, will be evaluated in accordance with B18.1(a).

B9. BID

- B9.1 The Bidder shall complete Form A: Bid/Proposal, making all required entries.
- B9.2 Paragraph 2 of Form A: Bid/Proposal shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in 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.
- B9.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B9.2.

- B9.3 In Paragraph 3 of Form A: Bid/Proposal, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B9.4 Paragraph 13 of Form A: Bid/Proposal shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in 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.
- B9.4.1 The name and official capacity of all individuals signing Form A: Bid/Proposal should be entered below such signatures.
- B9.5 If a Bid is submitted jointly by two or more persons, the word "Bidder" shall mean each and all such persons, and the undertakings, covenants and obligations of such joint Bidders in the Bid and the Contract, when awarded, shall be both joint and several.

B10. PRICES

- B10.1 The Bidder shall state a price in Canadian funds for each item of the Work identified on Form B: Prices.
- B10.1.1 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 D37. Any such costs shall be determined in accordance with D37.
- B10.2 The quantities listed on Form B: Prices are to be considered approximate only. The City will use said quantities for the purpose of comparing Bids.
- B10.3 The quantities for which payment will be made to the Contractor are to be determined by the Work actually performed and completed by the Contractor, to be measured as specified in the applicable Specifications.
- B10.4 Payments to Non-Resident Contractors are subject to Non-Resident Withholding Tax pursuant to the Income Tax Act (Canada).
- B10.5 The Bidder shall enter the Total Bid Price from Form B: Prices into the Total Bid Price field in MERX.
- B10.5.1 Bidders are advised that the calculation indicated in B18.4 will prevail over the Total Bid Price entered in MERX.
- B10.6 Form B: Prices is organized into Parts: Part 1 of the Work and Part 2 of the Work. Bidders shall provide a total price for each Part and, on the summary sheet, a Total Bid Price consisting of the sum of prices for Part 1 and Part 2.

B11. DISCLOSURE

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

B12. CONFLICT OF INTEREST AND GOOD FAITH

- B12.1** Further to C3.2, Bidders, by responding to this Tender, declare that no Conflict of Interest currently exists, or is reasonably expected to exist in the future.
- B12.2** Conflict of Interest means any situation or circumstance where a Bidder or employee of the Bidder proposed for the Work has:
- (a) other commitments;
 - (b) relationships;
 - (c) financial interests; or
 - (d) involvement in ongoing litigation;
- that could or would be seen to:
- (i) exercise an improper influence over the objective, unbiased and impartial exercise of the independent judgment of the City with respect to the evaluation of Bids or award of the Contract; or
 - (ii) compromise, impair or be incompatible with the effective performance of a Bidder's obligations under the Contract;
- (e) has contractual or other obligations to the City that could or would be seen to have been compromised or impaired as a result of 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.
- B12.3** In connection with their Bid, each entity identified in B12.2 shall:
- (a) avoid any perceived, potential or actual Conflict of Interest in relation to the procurement process and the Work;
 - (b) upon discovering any perceived, potential or actual Conflict of Interest at any time during the Tender process, promptly disclose a detailed description of the Conflict of Interest to the City in a written statement to the Contract Administrator; and
 - (c) provide the City with the proposed means to avoid or mitigate, to the greatest extent practicable, any perceived, potential or actual Conflict of Interest and shall submit any additional information to the City that the City considers necessary to properly assess the perceived, potential or actual Conflict of Interest.
- B12.4** Without limiting B12.3, the City may, in 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.
- B12.5** Without limiting B12.3, and in addition to all contractual or other rights or rights at law or in equity or legislation that may be available to the City, the City may, in 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 B12.4 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.

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

B13. QUALIFICATION

B13.1 The Bidder shall:

- (a) undertake to be in good standing under The Corporations Act (Manitoba), or properly registered under The Business Names Registration Act (Manitoba), or otherwise properly registered, licensed or permitted by law to carry on business in Manitoba; and
- (b) be financially capable of carrying out the terms of the Contract; and
- (c) have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract.

B13.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) be responsible and not be suspended, debarred or in default of any obligations to the City. A list of suspended or debarred individuals and companies is available on the Information Connection page at The City of Winnipeg, Corporate Finance, Purchasing Division website at <https://www.winnipeg.ca/matmgt/Templates/files/debar.pdf>

B13.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (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 B13.5 and D7)

B13.4 Further to B13.3(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, Purchasing Division website at <http://www.winnipeg.ca/matmgt/>.)

- B13.5 Further to B13.3(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.
- B13.6 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.
- B13.7 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.

B14. BID SECURITY

- B14.1 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, Purchasing Division website at <https://www.winnipeg.ca/MatMgt/templates/files/eBidsecurity.pdf>.
- B14.2 Bid security shall be submitted in a digital format meeting the following criteria:
- (a) The version submitted by the Bidder must have valid digital signatures and seals;
 - (b) The version submitted by the Bidder must be verifiable by the City with respect to the totality and wholeness of the bond form, including: the content; all digital signatures and digital seals; with the surety company, or an approved verification service provider of the surety company.
 - (c) The version submitted must be viewable, printable and storable in standard electronic file formats compatible with the City, and in a single file. Allowable formats include pdf.
 - (d) The verification may be conducted by the City immediately or at any time during the life of the bond and at the discretion of the City with no requirement for passwords or fees.
 - (e) The results of the verification must provide a clear, immediate and printable indication of pass or fail regarding B14.2(a).
- B14.3 Bonds failing the verification process will not be considered to be valid and the bid shall be determined to be non-responsive in accordance with B18.1(a).
- B14.4 Bonds passing the verification process will be treated as original and authentic.
- B14.4.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.
- B14.5 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly formed with the successful Bidder and the contract securities are furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.
- B14.6 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Tender.

B15. OPENING OF BIDS AND RELEASE OF INFORMATION

- B15.1 Bids will not be opened publicly.
- B15.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the MERX website at www.merx.com.

- B15.3 After award of Contract, the name(s) of the successful Bidder(s) and their Contract amount(s) will be available on the MERX website at www.merx.com.
- B15.4 The Bidder is advised that any information contained in any Bid may be released if required by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).
- B15.4.1 To the extent permitted, the City shall treat as confidential information, those aspects of a Bid Submission identified by the Bidder as such in accordance with and by reference to Part 2, Section 17 or Section 18 or Section 26 of The Freedom of Information and Protection of Privacy Act (Manitoba), as amended.

B16. IRREVOCABLE BID

- B16.1 The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid/Proposal.
- B16.2 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly formed and the contract securities have been furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid/Proposal.

B17. WITHDRAWAL OF BIDS

- B17.1 A Bidder may withdraw their Bid without penalty prior to the Submission Deadline.

B18. EVALUATION OF BIDS

- B18.1 Award of the Contract shall be based on the following bid evaluation criteria:
- (a) compliance by the Bidder with the requirements of the Tender, or acceptable deviation therefrom (pass/fail);
 - (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B13 (pass/fail);
 - (c) Total Bid Price;
 - (d) economic analysis of any approved alternative pursuant to B7.
- B18.2 Further to B18.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.
- B18.2.1 Any bid with an apparent imbalance between the unit prices in Part 1 and Part 2 may be determined to be non-responsive and rejected by the Award Authority in their sole discretion, acting reasonably.
- B18.3 Further to B18.1(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.
- B18.4 Further to B18.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices.
- B18.4.1 Further to B18.1(a), in the event that a unit price is not provided on Form B: Prices, the City may determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.
- B18.4.2 Bidders are advised that the calculation indicated in B18.4 will prevail over the Total Bid Price entered in MERX.

B19. AWARD OF CONTRACT

- B19.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B19.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be qualified, and the Bids are determined to be responsive.
- B19.2.1 Without limiting the generality of B19.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
 - (b) the prices are materially in excess of the prices received for similar work in the past;
 - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with 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.
- B19.3 The Work of this Contract is contingent upon Council approval of sufficient funding in the 2024 Capital Budget. If the Capital Budget approved by Council does not include sufficient funding for the Work, the City will have no obligation to award a Contract.
- B19.4 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 D37 shall immediately take effect upon confirmation of such funding, regardless of when funding is confirmed.
- B19.5 Where an award of Contract is made by the City, the award shall be made to the qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B18.
- B19.5.1 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.
- B19.6 As noted in D3 and identified in Form B: Prices, the Work of Part 2 will be contingent upon Manitoba Hydro approving funding for the Work. If sufficient funding for Part 2 Work is not approved by Manitoba Hydro, the City shall have the right to eliminate all or any portion of Part 2 Work in accordance with D2.

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, Purchasing Division website at http://www.winnipeg.ca/matmgt/gen_cond.stm
- C0.2 A reference in the Tender to a section, clause or subclause with the prefix “**C**” designates a section, clause or subclause in the *General Conditions for Construction*.

PART D - SUPPLEMENTAL CONDITIONS

GENERAL

D1. GENERAL CONDITIONS

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

D2. FORM OF CONTRACT DOCUMENTS

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

D3. SCOPE OF WORK

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

- (a) Part 1 – City Funded Work
- (b) Part 2 – Manitoba Hydro Funded Work.

Part 1 – City Funded Work

D3.2 Part 1 – City Funded Work shall consist of:

- (a) Asphalt Pavement Reconstruction and Associated Works
 - (i) St. Johns Avenue/Anderson Avenue Alley from Main Street to Fowler Street
 - (ii) Charles Street from Church Avenue to Machray Avenue
 - (iii) Church Avenue from Charles Street to Main Street
 - (iv) Luxton Avenue from St. Cross Street to End
 - (v) Machray Avenue from Aikins Street to Main Street
- (b) Concrete Pavement Rehabilitation and Associated Works
 - (i) Cochrane Street from End (Backlane) to Lansdowne Avenue
 - (ii) Lansdowne Avenue from Main Street to St. Cross Street
 - (iii) McAdam Avenue from End (Backlane) to Scotia Street
- (c) Concrete Sidewalk Reconstruction and Associated Works
 - (i) Dufferin Avenue from Aikins Street to Robinson Street (North Side)
- (d) Concrete Sidewalk Rehabilitation and Associated Works
 - (i) Dufferin Avenue from Robinson Street to King Street (North Side)
 - (ii) Robinson Street from Dufferin Avenue to Flora Avenue (Both Sides)
- (e) Sewer Repairs and Associated Works
 - (i) Charles Street from Church Avenue to Machray Avenue
 - (ii) Church Avenue from Charles Street to Main Street
 - (iii) Lansdowne Avenue from Main Street to St. Cross Street
 - (iv) Luxton Avenue from St. Cross Street to End
 - (v) Machray Avenue from Aikins Street to Main Street
 - (vi) McAdam Avenue from End (Backlane) to Scotia Street

Part 2 – Manitoba Hydro Funded Work

- D3.3 Part 2 – Manitoba Hydro Funded Work shall consist of:
- (a) Street Lighting and Associated Works
 - (i) Luxton Avenue from St. Cross Street to Scotia Street
 - (ii) Machray Avenue from Aikins Street to Main Street
- D3.4 The City currently has no approved funding for Part 2 of the Work, but is anticipating receiving notification about funding from the Manitoba Hydro by late May. Part 2 of the Work is contingent upon Manitoba Hydro approving sufficient funding.
- D3.4.1 Further to C7.1, if notice of sufficient funding is not received, the City shall have the right to eliminate all or any portion of Part 2, and the Contract Price will be reduced accordingly.
- D3.4.2 Further to C7.5, C7.5.1, and C7.6, a reduction in the Contract Price pursuant to D3.4.1 shall not be considered in calculating the aggregate reduction in the Contract Price for purposes of C7.5.
- D3.4.3 If all or any portion of Part 2 is eliminated pursuant to D3.4.1, the time periods stipulated in D24 for Substantial Performance of the Work and in D25 for Total Performance of the Work will be reduced proportionally by the Contract Administrator acting reasonably.
- D3.5 The major components of the Work are as follows:

Part 1 – City Funded Work

- (a) Asphalt Pavement Reconstruction and Associated Works
 - (i) Removal of existing sidewalk;
 - (ii) Planing of existing asphalt and at intersections as required;
 - (iii) Renewal of existing concrete sidewalk;
 - (iv) Installation of detectable warning surface tiles;
 - (v) Regrading of existing sidewalk blocks as required;
 - (vi) Regrading of existing interlocking paving stones as required;
 - (vii) Removal of existing pavement;
 - (viii) Removal of existing curb;
 - (ix) Complete required sewer service and sewer repairs;
 - (x) Installation of catch pits and drainage connection pipes;
 - (xi) Installation of catch basins and sewer service pipe;
 - (xii) Installation of subdrains;
 - (xiii) Removal of existing catch basins;
 - (xiv) Abandon existing catch basins and drainage inlets;
 - (xv) Excavation;
 - (xvi) Compaction of existing sub-grade;
 - (xvii) Adjustment of existing pavement and boulevard structures;
 - (xviii) Insulation of water services;
 - (xix) Placement of geotextile fabric and geogrid;
 - (xx) Placement of sub-base material (placed in two lifts);
 - (xxi) Construction of 150mm concrete pavement (reinforced);
 - (xxii) Construction of 200mm concrete pavement (reinforced);
 - (xxiii) Construction of barrier curb for asphalt pavement (SD-200A), utilizing slip-form paving equipment;
 - (xxiv) Construction of modified barrier curb for asphalt pavement;
 - (xxv) Construction of lip curb for asphalt pavement;
 - (xxvi) Construction of curb ramp for asphalt pavement;

- (xxvii) Construction of modified barrier curb;
 - (xxviii) Construction of barrier curb;
 - (xxix) Construction of curb ramp;
 - (xxx) Renewal of existing curb as required;
 - (xxxi) Placement and compaction of 50mm sub-base material as backfill behind barrier curb for asphalt pavement within excavated area;
 - (xxxii) Placement and compaction of suitable site material as backfill behind barrier curb for asphalt pavement within excavated area;
 - (xxxiii) Placement of base course material;
 - (xxxiv) Tree stump grinding;
 - (xxxv) Boulevard restoration and sod;
 - (xxxvi) Placement of asphalt pavement (Type III, 75mm thickness);
 - (xxxvii) Installation of pavement repair fabric at inlets and manholes (SD-220D);
 - (xxxviii) Placement of asphalt pavement (Type 1A, 50mm thickness);
 - (xxxix) Planing or removal of existing asphalt for asphalt speed table; and
 - (xl) Construction of asphalt speed table (Machray Avenue).
- (b) Concrete Pavement Rehabilitation and Associated Works
- (i) Planing of existing asphalt at intersections as required;
 - (ii) Milling of existing integral curb as required;
 - (iii) Renewal of existing sidewalks as required;
 - (iv) Installation of detectable warning surface tiles;
 - (v) Regrading of existing sidewalk blocks as required;
 - (vi) Regrading of existing interlocking paving stones as required;
 - (vii) Construction of concrete sidewalk;
 - (viii) Complete required sewer service and sewer repairs;
 - (ix) Abandon existing drainage inlets;
 - (x) Adjusting curb inlet with new inlet box;
 - (xi) Installation of catch pits and drainage connection pipes;
 - (xii) Renewal of existing catch basins (Lansdowne Avenue & McAdam Avenue);
 - (xiii) Full depth concrete repairs of existing slabs and joints;
 - (xiv) Adjustment of existing pavement and boulevard structures;
 - (xv) Renewal of existing curb as required;
 - (xvi) Construction of modified barrier curb;
 - (xvii) Construction of curb ramp;
 - (xviii) Tree stump grinding;
 - (xix) Boulevard restoration and sod;
 - (xx) Installation of pavement repair fabric;
 - (xxi) Construction of asphalt overlay Cochrane Street and McAdam Avenue from End to St. Cross Street (average thickness 75mm, two lifts); and
 - (xxii) Construction of asphalt overlay Lansdowne Avenue and McAdam Avenue from St. Cross Street to Scotia Street (average thickness 50mm, one lift).
- (c) Concrete Sidewalk Reconstruction and Associated Works
- (i) Removal of existing sidewalk;
 - (ii) Removal of existing curb;
 - (iii) Removal of existing monolithic curb and sidewalk;
 - (iv) Removal of existing concrete pavement approaches;
 - (v) Adjustment of existing sidewalk and boulevard structures;
 - (vi) Construction of concrete sidewalk;

- (vii) Construction of monolithic curb and sidewalk;
 - (viii) Construction of 150mm concrete pavement (reinforced);
 - (ix) Construction of 200mm concrete pavement (reinforced);
 - (x) Construction of asphalt patches; and
 - (xi) Boulevard restoration and sod.
- (d) Concrete Sidewalk Rehabilitation and Associated Works
- (i) Renewal of existing concrete sidewalks as required;
 - (ii) Adjustment of existing sidewalk and boulevard structures;
 - (iii) Installation of detectable warning surface tiles;
 - (iv) Full depth repair of existing concrete slab;
 - (v) Renewal of existing curb as required;
 - (vi) Construction of asphalt patches; and
 - (vii) Boulevard restoration and sod.
- (e) Sewer Repairs and Associated Works
- (i) Pre-sewer and sewer service video inspection;
 - (ii) Sewer service renewals and reconnections;
 - (iii) External point repair of existing sewer service pipe or sewer main;
 - (iv) Post-sewer and sewer service video inspection;
 - (v) Replace pre-cast concrete risers;
 - (vi) Patching pre-cast concrete risers;
 - (vii) Patching of manholes;
 - (viii) Patching of pipe/MH interface; and
 - (ix) Remove and replace benching of existing manhole.

Part 2 – Manitoba Hydro Funded Work

- (f) Street Lighting and Associated Works
- (i) Installation of temporary overhead feed;
 - (ii) Installation of foundation – concrete base;
 - (iii) Installation of breakaway bases;
 - (iv) Installation of street light poles on concrete bases;
 - (v) Installation of 10' ground rods;
 - (vi) Installation of the luminaire and associated wiring;
 - (vii) Splicing /connecting of electrical cables;
 - (viii) Excavation of street light cable/conduit trench;
 - (ix) Installation of conduits and cables;
 - (x) Backfill the street light cable/conduit trench;
 - (xi) Removal of street light poles from existing bases;
 - (xii) Removal of concrete bases and direct buried street light poles;
 - (xiii) Removal of temporary overhead feed; and
 - (xiv) Provide as-built drawing of the buried street light cable, conduits and street light standards.

D4. SITE INVESTIGATION DUE DILIGENCE AND RISK

- D4.1 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.

D5. CONTRACT ADMINISTRATOR

D5.1 The Contract Administrator is:

Erik Hansen, C.E.T.
Technologist III
Public Works, Engineering
Telephone No. 204-918-4367
Email Address EHansen@winnipeg.ca

D5.2 At the pre-construction meeting, the Contract Administrator will identify additional personnel representing the Contract Administrator and their respective roles and responsibilities for the Work.

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 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, Purchasing Division website at <http://www.winnipeg.ca/matmgt/safety/default.stm>
- D11.3 Notwithstanding B13.4 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 D5 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 two (2) Business Days prior to the commencement of any Work on the Site but in no event later than the date specified in the General Conditions for the return of the executed Contract Documents, as applicable.
- D15.2 If, after submitting the Detailed Work Schedule, the Contractor receives notification that all or any portion of Part 2 of the Work may be commenced, they shall submit a revised Detailed Work Schedule no later than two (2) Business Days from receipt of the notification.
- D15.3 The detailed work schedule shall consist of the following:
- (a) a critical path method (C.P.M.) schedule for the Work; and
 - (b) a Gantt chart for the Work based on the C.P.M. schedule;
- all acceptable to the Contract Administrator.
- D15.4 Further to D15.3(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.
- D15.5 Further to D15.3(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 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.
- 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.

D17. CONSTRUCTION METHOD STATEMENT FOR CONSTRUCTION OVER 600 FEEDERMAIN

- D17.1 The Contractor shall provide the Contract Administrator with a construction method statement and it shall be approved by the Water and Waste Department prior to any work commencing on Charles Street from Church Avenue to the North limit of Machray Avenue. For further information refer to: E20. ROADWORKS IN CLOSE PROXIMITY TO A FEEDERMAIN.

SCHEDULE OF WORK

D18. COMMENCEMENT

- D18.1 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.
- D18.2 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;
 - (x) the direct deposit application form specified in D32, and
 - (xi) the Construction Method Statement for Construction over 600 Feedermain specified in D17.
 - (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.

- D18.3 The Contractor shall not commence the Work on the Site before May 13, 2024, and shall commence the Work on Site no later than May 21, 2024, as directed by the Contract Administrator and weather permitting.
- D18.4 The Contractor shall not commence Part 2 of the Work as described in D3 and identified in Form B: Prices, until they have received notification from the Contract Administrator that the City has received notice of sufficient funding from Manitoba Hydro.
- D18.5 The City intends to award this Contract by May 7, 2024.

D19. WORKING DAYS

- D19.1 Further to C1.1(tt);
- D19.1.1 The Contract Administrator will determine daily if a Working Day has elapsed and will record their assessment. On a weekly basis the Contract Administrator will provide the Contractor with a record of the Working Days assessed for the preceding week. The Contractor shall sign each report signifying that they agree with the Contract Administrator's determination of the Working Days assessed for the report period.
- D19.1.2 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.
- D19.1.3 When the Work includes two or more major types of Work that can be performed under different atmospheric conditions, the Contract Administrator shall consider all major types of Work in determining whether the Contractor was able to work in assessing Working Days.
- D19.1.4 Saturdays and Sundays will be considered a Working Day if the Contractor is working at least seven (7) hours on Site and the Contract Administrator deems that the Contract Administrator's staff is also required on Site.

D20. RESTRICTED WORK HOURS

- D20.1 Further to 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.

D21. WORK BY OTHERS

- D21.1 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 Contractors 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.
- D21.2 Work by others on or near the Site will include but not necessarily be limited to:
- (a) City of Winnipeg Traffic Services – traffic diversion signing;
 - (b) City of Winnipeg Geomatics Branch – various works on survey monuments;
 - (c) City of Winnipeg Water and Waste – manhole inspections;
 - (d) City of Winnipeg Forestry – tree inspections;
 - (e) Manitoba Hydro – supply and inspection of new street lighting hardware (to be installed by the contractor) and the energizing of new street light plant;
 - (f) Manitoba Hydro Gas Division – lowering and/or rock wrapping of gas main and services;

D21.3 Further to D21.1 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 D21.2 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.

D22. SEQUENCE OF WORK

D22.1 Further to C6.1, the sequence of work shall comply with the following:

D22.1.1 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.

D22.1.2 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.

D22.1.3 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.

D22.1.4 Immediately following the completion of asphaltic concrete works, the Contractor shall clean up the site and remove all plant, surplus material, waste and debris, other than that left behind by the City or other contractors.

D22.1.5 The Work on St. Johns Avenue/Anderson Avenue Alley from Main Street to Fowler Street will be divided into two stages. The Work must reach Substantial Performance and traffic in both directions restored in one stage before Work on the next stage can begin. The work will be divided as follows:

(a) **Stage 1** – Alley (south-north) from St. Johns Avenue to 1+50 and Alley (west-east) from 1+00 to Fowler Street.

(i) All work must be completed as outlined in D3.5(a) to the satisfaction of the Contract Administrator before beginning Stage 2.

(b) **Stage 2** – Alley (south-north) from 1+50 to Anderson Avenue.

(i) The Contractor shall complete all remaining work as outlined in D3.5(a).

D22.1.6 The Work on Church Avenue from Charles Street to Main Street will be divided into two stages. The Work must reach Substantial Performance and traffic in both directions restored in one stage before Work on the next stage can begin. The work will be divided as follows:

(a) **Stage 1** – Church Avenue from 1+54 to Main Street

(i) All work must be completed as outlined in D3.5(a) to the satisfaction of the Contract Administrator before beginning Stage 2.

(b) **Stage 2** – Church Avenue from Charles Street to 1+54

(i) The Contractor shall complete all remaining work as outlined in D3.5(a).

(c) Construction Works at Alley shall be continuous, so as to maintain vehicle access to Alley as much as possible. A temporary gravel ramp can be constructed to help with maintaining vehicle access to Alley.

D22.1.7 The Work on Charles Street from Church Avenue to Machray Avenue and Church Avenue (Stage 2) from Charles Street to 1+54 may run concurrently, as outlined in D3.5(a) to the satisfaction of the Contract Administrator.

D22.1.8 The Work on Machray Avenue from Aikins Street to Main Street and Charles Street from Church Avenue to Machray Street must not run concurrently.

- D22.1.9 The Work on Robinson Street from Dufferin Avenue to Flora Avenue:
- (a) Construction activity is to be limited to one side of the street at a time.
 - (b) Pedestrian access must be maintained on one side of the street at all times.

D23. CRITICAL STAGES

- D23.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) Machray Avenue from Aikins Street to Charles Street
 - (i) The Contractor shall not commence the Work on the Site before July 1, 2024, and shall complete all Work on Site as outlined in D3.5(a) no later than September 2, 2024, as directed by the Contract Administrator.
- D23.2 When the Contractor considers the Work associated with D22.1 to be completed, the Contractor shall arrange, attend and assist in the inspection of the Work with the Contract Administrator for purposes of verifying Completion. Any defects or deficiencies in the Work noted during that inspection shall be remedied by the Contractor at the earliest possible instance and the Contract Administrator notified so that the Work can be re-inspected.
- D23.3 The date on which the D22.1 Work has been accepted by the Contract Administrator as being completed to the requirements of the Contract is the date on which completion of D22.1 has been achieved.

D24. SUBSTANTIAL PERFORMANCE

- D24.1 The Contractor shall achieve Substantial Performance within ninety-five (95) consecutive Working Days of the commencement of the Work as specified in D18.
- D24.2 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.
- D24.3 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.

D25. TOTAL PERFORMANCE

- D25.1 The Contractor shall achieve Total Performance within one-hundred (100) consecutive Working Days of the commencement of the Work as specified in D18.
- D25.2 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.
- D25.3 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.

D26. LIQUIDATED DAMAGES

- D26.1 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: Machray Avenue from Aikins Street to Charles Street – three thousand and five hundred dollars (\$3500.00);
- (b) Substantial Performance – three thousand and five hundred dollars (\$3500.00);
- (c) Total Performance – one thousand dollars (\$1000.00).

D26.2 The amounts specified for liquidated damages in D26.1 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.

D26.3 The City may reduce any payment to the Contractor by the amount of any liquidated damages assessed.

D27. SUPPLY CHAIN DISRUPTION SCHEDULE DELAYS

D27.1 The City acknowledges that the schedule for this Contract may be impacted by the Supply Chain Disruption. Commencement and progress of the Work shall be performed by the Contractor with due consideration to the delivery requirements and schedule identified in the Contract, in close consultation with the Contract Administrator.

D27.2 If the Contractor is delayed in the performance of the Work by reason of the Supply Chain Disruption, 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.

D27.3 A minimum of seven (7) Calendar Days prior to the commencement of Work, the Contractor shall declare whether a Supply Chain Disruption will affect the start date. The Contractor shall provide sufficient evidence that the delay is directly related to ordering of Material or Goods, production and/or manufacturing schedules or availability of staff as appropriate s.

D27.4 For any delay related to Supply Chain Disruption 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 D27.3. Failure to provide this notice will result in no additional time delays being considered by the City.

D27.5 The Work schedule, including the durations identified in D20 to D25 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.

D27.6 Where Work not previously identified is being carried over solely as a result of delays related to Supply Chain Disruption, 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 Supply Chain Disruption, a partial consideration of the cost of temporary works will be considered by the Contract Administrator.

D27.7 Any time or cost implications as a result of Supply Chain Disruption and in accordance with the above, as confirmed by the Contract Administrator, shall be documented in accordance with C7.

D28. SCHEDULED MAINTENANCE

D28.1 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; and
- (b) Reflective Crack Maintenance as specified in CW 3250-R7.

D28.2 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

D29. JOB MEETINGS

D29.1 Regular weekly job meetings will be held at the site or location agreed to by the Contract Administrator and the Contractor. These meetings shall be attended by a minimum of one representative of the Contract Administrator and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.

D29.2 The Contract Administrator reserves the right to cancel any job meeting or call additional job meetings whenever they deem it necessary.

D30. PRIME CONTRACTOR – THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA)

D30.1 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).

D31. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

D31.1 Further to B13.4, the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at their sole discretion and acting reasonably, require updated proof of compliance, as set out in B13.4.

MEASUREMENT AND PAYMENT

D32. PAYMENT

D32.1 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.

D33. FUEL PRICE ADJUSTMENT

D33.1 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.

D33.1.1 Eligible Work will be determined in accordance with D33.5.

- D33.1.2 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.
- D33.1.3 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.
- D33.1.4 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.
- D33.2 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.
- D33.3 The fuel escalation or de-escalation adjustment will not be applied if the CFI is within $\pm 15\%$ of the BFI.
- D33.4 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.
- D33.5 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 except for the portions of the Contract identified below;
 - (b) The Fuel Factor will not apply to L.1 to L.25 identified on Form B: Prices related to Water & Waste Work.
 - (c) The Fuel Factor will not apply to M.1 to M.9 and N.1 to N.9 identified on Form B: Prices related to Manitoba Hydro Work.

WARRANTY

D34. WARRANTY

- D34.1 Notwithstanding C13.2, the warranty period shall begin on the date of Total Performance and shall expire one (1) year thereafter for pavement rehabilitation Works and sidewalk rehabilitation Works, and two (2) years thereafter for pavement reconstruction Works and sidewalk reconstruction Works, unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.

DISPUTE RESOLUTION

D35. DISPUTE RESOLUTION

- D35.1 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 D35.
- D35.2 The entire text of C21.4 is deleted, and amended to read: “Intentionally Deleted”
- D35.3 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 Purchasing 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.

- D35.4 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.
- D35.4.1 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.
- D35.4.2 As these negotiations are not an adjudicative hearing, neither party may have legal counsel present during the negotiations.
- D35.4.3 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.
- D35.4.4 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 D35.4.3, 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.

INDEMNITY

D36. INDEMNITY

- D36.1 Indemnity shall be as stated in C17.
- D36.2 Notwithstanding C17.1, the Contractor shall save harmless and indemnify the City in the amount of twice the Contract Price or five million dollars (\$5,000,000), whichever is greater, against all costs, damages or expenses arising from actions, claims, demands and proceedings, by whomsoever brought, made or taken as a result of negligent acts or negligent omissions of the Contractor, their Subcontractors, employees or agents in the performance or purported performance of the Work, and more particularly from:
- (a) accidental injury to or death of any person whether retained by or in the employ of the contractor or not, arising directly or indirectly by reason of the performance of the Work, or by reason of any trespass on or damage to property;
 - (b) damage to any property owned in whole or in part by the City, or which the City by duty or custom is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain;
 - (c) damage to, or trespass or encroachment upon, property owned by persons other than the City;

- (d) any claim for lien or trust claim served upon the City pursuant to The Builders' Liens Act;
- (e) failure to pay a Workers Compensation assessment, or Federal or Provincial taxes;
- (f) unauthorized use of any design, device, material or process covered by letters patent, copyright, trademark or trade name in connection with the Work;
- (g) inaccuracies in any information provided to the City by the Contractor.

D36.3 Further to C17, The City shall save harmless and indemnify the Contractor in the amount of twice the Contract Price or five million dollars (\$5,000,000), whichever is greater, against all costs, damages or expenses arising from actions, claims, demands and proceedings, by whomsoever brought, made or taken as a result of negligent acts or negligent omissions of the City, their employees or agents in the performance of its obligation under the Contract.

THIRD PARTY AGREEMENTS

D37. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

D37.1 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.

D37.2 Further to D37.1, in the event that the obligations in D37 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.

D37.3 For the purposes of D37:

- (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.

D37.4 Modified Insurance Requirements

D37.4.1 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.

D37.4.2 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.

D37.4.3 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.

D37.4.4 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.

D37.4.5 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.

D37.5 Indemnification By Contractor

D37.5.1 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.

D37.5.2 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.

D37.6 Records Retention and Audits

D37.6.1 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.

D37.6.2 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 D37.6.1 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.

D37.7 Other Obligations

D37.7.1 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.

D37.7.2 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.

- D37.7.3 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.
- D37.7.4 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.
- D37.7.5 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.
- D37.7.6 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. 1-2024

2024 Local Street Renewal Program – Charles Street 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. 1-2024

2024 Local Street Renewal Program – Charles Street 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)

2024 Local Street Renewal Program – Charles Street and Various Other Locations

<u>Portion of the Work</u>	<u>Name</u>	<u>Address</u>
SURFACE WORKS:		
<u>Supply of Materials:</u>		
Geotextile Fabric		
Geogrid		
Sub-base Material		
Base Course Material		
Concrete		
Asphalt		
Pavement Repair Fabric		
Topsoil and Sod		
Joint Sealant		
<u>Installation and Placement:</u>		
Geotextile Fabric		
Geogrid		
Sub-base Material		
Base Course Material		
Concrete		
Asphalt		
Pavement Repair Fabric		
Topsoil and Sod		
Joint Sealant		

FORM J: SUBCONTRACTOR LIST
(See D14)

2024 Local Street Renewal Program – Charles Street and Various Other Locations

<u>Portion of the Work</u>	<u>Name</u>	<u>Address</u>
UNDERGROUND WORKS:		
<u>Supply of Materials:</u>		
Pre-cast Concrete Catch Basin, Catch Pit, Manhole and Concrete Risers		
Sewer Service Pipe/Drainage Connection Pipe/Sewer Pipe		
Subdrains		
Catch Basin/Catch Pit/Manhole Frames, Covers, Curb Inlet Frames and Lifter Rings		
Watermain Valve/Service Boxes		
Watermain/Watermain Service Insulation		
MTS Riser Ring: Trojan Industries – TF-113-2”		
<u>Installation and Placement:</u>		
Pre-cast Concrete Catch Basin, Catch Pit, Manhole and Concrete Risers		
Sewer Service Pipe/Drainage Connection Pipe/Sewer Pipe		
Subdrains		
Catch Basin/Catch Pit/Manhole Frames, Covers, Curb Inlet Frames and Lifter Rings		
Watermain Valve/Service Boxes		
Watermain/Watermain Service Insulation		
MTS Riser Ring: Trojan Industries – TF-113-2”		

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, Purchasing Division website at <http://www.winnipeg.ca/matmgt/Spec/Default.stm>
- E1.2.2 The version in effect three (3) Business Days before the Submission Deadline shall apply.
- E1.2.3 Further to C2.4(d), Specifications included in the Tender shall govern over *The City of Winnipeg Standard Construction Specifications*.
- E1.3 Bidders are reminded that requests for approval of substitutes as an approved equal or an approved alternative shall be made in accordance with B7. In every instance where a brand name or design specification is used, the City will also consider approved equals and/or approved alternatives in accordance with B7.
- E1.4 The following are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
	Cover Sheet	A1
SE-24-30	Luxton Avenue from Sta. 1+00 to Sta. 2+20	A1
SE-24-31	Luxton Avenue from Sta. 2+20 to Sta. 3+30	A1
SE-24-32	Luxton Avenue from Sta. 3+30 to Sta. 4+50	A1
SE-24-33	Church Avenue from Sta. 1+00 to Sta. 2+17	A1
SE-24-34	Charles Street from Sta. 1+00 to Sta. 2+06	A1
SE-24-35	Machray Avenue from Sta. 1+00 to Sta. 2+21	A1
SE-24-36	Machray Avenue from Sta. 2+21 to Sta. 3+40	A1
SE-24-37	Machray Avenue from Sta. 3+40 to Sta. 4+10	A1
SE-24-38	St. Johns Avenue/Anderson Avenue Alley from Sta. 1+00 to Sta. 1+86	A1
SE-24-39	St. Johns Avenue/Anderson Avenue Alley from Sta. 1+00 to Sta. 2+20	A1
SE-24-40	St. Johns Avenue/Anderson Avenue Alley from Sta. 2+20 to Sta. 2+41	A1
SE-24-41	Lansdowne Avenue from Sta. 1+00 to Sta. 2+28	A1
SE-24-42	Lansdowne Avenue from Sta. 2+28 to Sta. 3+40	A1
SE-24-43	Lansdowne Avenue from Sta. 3+40 to Sta. 4+60	A1
SE-24-44	Lansdowne Avenue from Sta. 4+60 to Sta. 5+80	A1
SE-24-45	Lansdowne Avenue from Sta. 5+80 to Sta. 6+46	A1
SE-24-46	Cochrane Street from Sta. 1+00 to Sta. 2+05	A1
SE-24-47	Cochrane Street from Sta. 2+05 to Sta. 2+35	A1
SE-24-48	McAdam Avenue from Sta. 1+00 to Sta. 2+20	A1
SE-24-49	McAdam Avenue from Sta. 2+20 to Sta. 3+44	A1
SE-24-50	McAdam Avenue from Sta. 3+44 to Sta. 4+33	A1
1-04707-DE-50000-0643	Street Lighting Project – Luxton Avenue	A1
1-04707-DE-50000-0642	Street Lighting Project – Machray Avenue	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;
 - (v) Monitoring maintenance, and reporting of the Accessibility Site Plan as per D16.
- 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 B10, B18, 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;
and
 - (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. MANITOBA HYDRO ALLOWABLE EXCAVATIONS AROUND EXISTING POLES

E3.1 Pre-work, Planning and General Execution:

- (a) A pre-construction meeting will be held to discuss with the Manitoba Hydro District office about whether poles can be stabilized while excavation takes place.
- (b) Reference Manitoba Hydro Drawing for allowable excavations around existing poles: CD 30-55 (Appendix 'J')

E3.2 Excavation, Backfill and Compaction:

- (a) For excavation near poles, the minimum amount of undisturbed earth to be left around all poles shall be 1.0m. The maximum slope angle of undisturbed earth shall be 26° or 2:1 until the desired depth is reached. The minimum separation for excavations deeper than 0.5m without regional engineering involvement shall be 1.5m. Excavations to be backfilled and tamped to maintain slope.
- (b) The pole should be tied to a piece of large equipment. That equipment must not be moved until fill is back in place so the pole could stand on its own. Excavation up to 1' deep around the pole without stabilization is acceptable.

E3.3 Measurement and Payment:

- (a) Excavation, backfill, compaction and stabilization of pole will be considered incidental to the Work. No measurement and payment will be made within this section.

E4. GEOTECHNICAL REPORT

E4.1 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'.

E5. PROTECTION OF EXISTING TREES

E5.1 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.

E5.2 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.

E5.3 No separate measurement or payment will be made for the protection of trees.

E5.4 Except as required in E5.1(c) and E5.1(e), Elm trees shall not be pruned at any time between April 1 and July 31.

E5.5 ¾" Plywood sheeting is required to be placed when crossing or driving on the boulevard as approved by the Contract Administrator.

E6. TRAFFIC CONTROL

E6.1 Further to 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.

E6.2 Upon request from the Contract Administrator, the Contractor shall provide records demonstrating that the site has been maintained.

E6.3 Further to E6.1(c) and E6.1(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.

E6.4 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.

E6.5 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.

E6.6 The Contractor shall be required to obtain approval for all lane closures through the City of Winnipeg Traffic Management Branch. The Contract Administrator shall be added as an additional contact on all lane closure requests.

E7. TRAFFIC MANAGEMENT

E7.1 Further to 3.7 of CW 1130:

E7.1.1 The Contractor shall schedule construction activities to meet the following:

- (a) St. Johns Avenue/Anderson Avenue Alley from Main Street to Fowler Street:
 - (i) Closed to all traffic (Stage 1) – Alley (south-north) from St. Johns Avenue to 1+50 and Alley (west-east) 1+00 to Fowler Street. The Contractor shall sign the street “Road Closed – No Exit” in accordance with the Manual of Temporary Traffic Control;
 - (ii) Closed to all traffic (Stage 2) – Alley (south-north) from 1+50 to Anderson Avenue. The Contractor shall sign the street “Road Closed – No Exit” in accordance with the Manual of Temporary Traffic Control;
 - (iii) Alley access must be maintained at all times to the Anderson Apartment ‘B’ parking lot (#188 Anderson Avenue).
- (b) Charles Street from Church Avenue to Machray Avenue:
 - (i) Closed to all traffic. The Contractor shall sign the street “Road Closed – No Exit” in accordance with the Manual of Temporary Traffic Control;
 - (ii) Pedestrian access must be maintained on one side at all times. One pedestrian crossing in the west-east direction must be maintained at each of the Machray Avenue and Church Avenue intersections at all times.
- (c) Church Avenue from Charles Street to Main Street:
 - (i) Closed to all traffic (Stage 1) – 1+54 to Main Street. The Contractor shall sign the street “Road Closed – No Exit” in accordance with the Manual of Temporary Traffic Control;
 - (ii) Closed to all traffic (Stage 2) – Charles Street to 1+54. The Contractor shall sign the street “Road Closed – No Exit” in accordance with the Manual of Temporary Traffic Control;
 - (iii) Back lane access shall be maintained at all times;
 - (iv) Manitoba Public Insurance “Exit” approach access (at 1+54) must be maintained at all times;
 - (v) Pedestrian access must be maintained on one side at all times. One pedestrian crossing in the north-south direction must be maintained at the Charles Street intersection at all times.
- (d) Cochrane Street from End to Lansdowne Avenue:
 - (i) A minimum of one lane for local access traffic shall be maintained along this street during construction;
 - (ii) Maintain one lane of one-way traffic(northbound) during southbound construction from End(Lane) to Lansdowne Avenue;

- (iii) Maintain one lane of one-way traffic(southbound) during northbound construction from Lansdowne Avenue to End(Lane);
 - (iv) Intersecting streets and back lane access shall be maintained at all times;
 - (v) Pedestrian access must be maintained on one side at all times. One pedestrian crossing in the west-east direction must be maintained at the Inkster Boulevard intersection at all times.
- (e) Dufferin Avenue from Aikins Street to Robinson Street (Sidewalk North Side):
 - (i) A minimum of one lane(westbound) for local access traffic shall be maintained along this street during construction;
 - (ii) Intersecting streets and back lane access shall be maintained at all times.
- (f) Dufferin Avenue from Robinson Street to King Street (Sidewalk North Side):
 - (i) A minimum of one lane(westbound) for local access traffic shall be maintained along this street during construction;
 - (ii) Intersecting streets, private/commercial approaches and back lane access shall be maintained at all times.
- (g) Lansdowne Avenue from Main Street to St. Cross Street:
 - (i) A minimum of one lane for local access traffic shall be maintained along this street during construction;
 - (ii) Maintain one lane of one-way traffic(westbound) during eastbound construction from St. Cross Street to Main Street;
 - (iii) Maintain one lane of one-way traffic(eastbound) during westbound construction from Main Street to St. Cross Street;
 - (iv) Intersecting streets and back lane access shall be maintained at all times;
 - (v) Pedestrian access must be maintained on one side at all times. One pedestrian crossing in the north-south direction must be maintained at each of the Cochrane Street and St. Cross Street intersections at all times.
- (h) Luxton Avenue from St. Cross Street to End:
 - (i) Closed to all traffic. The Contractor shall sign the street "Road Closed – No Exit" in accordance with the Manual of Temporary Traffic Control;
 - (ii) Intersecting streets shall be maintained at all times;
 - (iii) Pedestrian access must be maintained on one side at all times. One pedestrian crossing in the north-south direction must be maintained at the Scotia Street intersection at all times.
- (i) Machray Avenue from Aikins Street to Main Street:
 - (i) Closed to all traffic. The Contractor shall sign the street "Road Closed – No Exit" in accordance with the Manual of Temporary Traffic Control;
 - (ii) Pedestrian access must be maintained on one side at all times. One pedestrian crossing in the north-south direction must be maintained at each of the Aikins Street and Charles Street intersections at all times.
- (j) McAdam Avenue from End to Scotia Street:
 - (i) A minimum of one lane for local access traffic shall be maintained along this street during construction;
 - (ii) Maintain one lane of one-way traffic(westbound) during eastbound construction from Scotia Street to End(Lane);
 - (iii) Maintain one lane of one-way traffic(eastbound) during westbound construction from End(Lane) to Scotia Street;
 - (iv) Intersecting streets and back lane access shall be maintained at all times;
 - (v) Pedestrian access must be maintained on one side at all times. One pedestrian crossing in the north-south direction must be maintained at each of the St. Cross Street and Scotia Street intersections at all times.
- (k) Robinson Street from Dufferin Avenue to Flora Avenue (Sidewalk Both Sides):

- (i) A minimum of one lane for local access traffic shall be maintained along this street during construction;
- (ii) Intersecting streets, private/commercial approaches and back lane access shall be maintained at all times.

E7.1.2 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 24 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.

E7.1.3 Flag persons may be necessary to maintain the flow of traffic during certain work operations.

E7.1.4 Pedestrian and ambulance/emergency vehicle access must be maintained at all times.

E8. REFUSE AND RECYCLING COLLECTION

E8.1 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 E8.2 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.

E8.2 Collection Schedule:

St. Johns Avenue/Anderson Avenue Alley from Main Street to Fowler Street

Collection Day(s): **Thursday**

Collection Time: **7:00 am**

Common Collection Area: **Collection back lane. Contractor to move Refuse/Recycling/Yard Waste to front street of Anderson Avenue and St. Johns Avenue.**

Charles Street from Church Avenue to Machray Avenue

Collection Day(s): **Thursday**

Collection Time: **7:00 am**

Common Collection Area: **Collection back lane eastside Charles Street. Contractor to move Refuse/Recycling/Yard Waste to common collection point.**

Church Avenue from Charles Street to Main Street

Collection Day(s): **Thursday**

Collection Time: **7:00 am**

Common Collection Area: **Collection back lane northside Church Avenue. Contractor to move Refuse/Recycling/Yard Waste to common collection point.**

Cochrane Street from End (Back Lane) to Lansdowne Avenue

Collection Day(s): **Thursday**

Collection Time: **7:00 am**

Common Collection Area: **Collection back lane. Need to allow access to intersecting back lanes.**

Dufferin Avenue from Aikins Street to Robinson Street

Collection Day(s): **Thursday**

Collection Time: **7:00 am**

Common Collection Area: **Collection front street, maintain access to accommodate or Contractor to move Refuse/Recycling/Yard Waste to common collection point.**

Dufferin Avenue from Robinson Street to King Street

Collection Day(s): **Tuesday (Refuse only) and Friday (Refuse/Recycling/Yard Waste)**

Collection Time: **7:00 am**

Common Collection Area: **Maintain access to accommodate Refuse/Recycling/Yard Waste collection.**

Lansdowne Avenue from Main Street to St. Cross Street

Collection Day(s): **Thursday**

Collection Time: **7:00 am**

Common Collection Area: **Collection back lane. Need to allow access to intersecting back lanes.**

Luxton Avenue from St. Cross Street to End

Collection Day(s): **Thursday**

Collection Time: **7:00 am**

Common Collection Area: **Collection back lane from St. Cross Street to Scotia Street. Collection front street from Scotia Street to End, Contractor to move Refuse/Recycling/Yard Waste to common collection point.**

Machray Avenue from Aikins Street to Main Street

Collection Day(s): **Thursday**

Collection Time: **7:00 am**

Common Collection Area: **Collection back lane. Collection front street Machray Avenue(southside) from Charles Street to Main Street, Contractor to move Refuse/Recycling/Yard Waste to common collection area.**

McAdam Avenue from End (Back Lane) to Scotia Street

Collection Day(s): **Thursday**

Collection Time: **7:00 am**

Common Collection Area: **Collection back lane. Need to allow access to intersecting back lanes.**

Robinson Street from Dufferin Avenue to Flora Avenue

Collection Day(s): **Tuesday (Refuse only) and Friday (Refuse/Recycling/Yard Waste)**

Collection Time: **7:00 am**

Common Collection Area: **Maintain access to accommodate Refuse/Recycling/Yard Waste collection.**

E8.3 No measurement or payment will be made for the work associated with this Specification.

E9. WATER OBTAINED FROM THE CITY

- E9.1 Further to 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 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. SUPPLY AND INSTALL WATERMAIN AND WATER SERVICE INSULATION

DESCRIPTION

- E12.1 Notwithstanding 3.12 of CW 2110, this Specification covers the supply and installation of insulation in roadway excavations over watermains and water services.
- E12.2 Referenced Standard Construction Specifications
- (a) CW 2030 – Excavation Bedding and Backfill
 - (b) CW 3110 – Sub –grade, Sub-base and Base Course Construction
- E12.3 Referenced Standard Details
- (a) SD-018 - Watermain and Water Service Insulation

MATERIALS

- E12.4 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"

- E12.5 Sand Bedding:
- (a) In accordance with CW 2030

CONSTRUCTION METHODS

- E12.6 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.

- E12.7 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.
- E12.8 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 adjoining 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.
- E12.9 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.
- E12.10 Take appropriate measures to ensure panels are not displaced when installing geotextiles and during backfilling operations.

MEASUREMENT AND PAYMENT

- E12.11 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 E12.6 will not be measured for payment and will be included in the payment for "Watermain and Water Service Insulation".

E13. SUPPLY AND INSTALLATION OF PAVEMENT REPAIR FABRIC

DESCRIPTION

- E13.1 This Specification shall supplement CW 3140

CONSTRUCTION METHODS

- E13.2 Add the following to section 3
 - E13.2.1 When applying the Pavement Repair Fabric directly to a concrete surface, the Contractor shall clean all debris and growth from any cracks, holes or depressions. Where required, the surface is to be levelled with Type 1A asphalt to form a level surface for the Pavement Repair Fabric to adhere to. All Work to be completed to the satisfaction of the Contract Administrator.
- E13.3 Type 1A asphalt leveling surface is to be constructed as per CW 3410

MATERIALS

- E13.4 Pavement Repair Fabric shall be Type 'B' – GlasGrid 8502, as per table 10.3 in *The City of Winnipeg Approved Products for Surface Works* for Lansdowne Avenue from Main Street to St. Cross Avenue and McAdam Avenue from St. Cross Street to Scotia Street.
- E13.5 Asphalt leveling course to be Type 1A asphalt as per CW 3410

MEASUREMENT AND PAYMENT

- E13.6 Further to Clause 5.1 of CW 3140,

Items of Work:

- i. Type A
- ii. Type B – GlasGrid 8502

- E13.6.1 Pavement Repair Fabric to be measured and paid for as per CW 3140
- E13.6.2 Construction of asphalt leveling course will be paid for at the Contract Unit Price per square metre for “Construction of Asphalt Patches”. 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.

E14. EXISTING MANHOLE REPAIRS

- E14.1 Patching existing manholes will be constructed in accordance with CW 2130.
- E14.2 Re-pointing brickwork of existing manholes will be constructed in accordance with CW 2130.
- E14.3 Patching around the perimeter of connecting sewer pipes at the manhole interface will be measured on a unit basis and paid for at the Contract Unit Price for “Patching of Pipe/MH Interface”.
- E14.4 Removal and Reinstallation of benching in an existing manhole will be measured on a unit basis and paid for at the Contract Unit Price for “Remove and Replace Benching of Existing Manhole”.

E15. TREE STUMP GRINDING

DESCRIPTION

- E15.1 This Specification shall cover the grinding of existing tree stumps as directed by the Contract Administrator. The Work to be done under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary and incidental to the satisfactory performance and completion of all Work as specified. This Specification supplements CW 3010.

CONSTRUCTION METHODS

- E15.2 The Contractor shall grind tree stumps identified by the Contract Administrator.
- E15.3 The Contractor shall grind tree stumps to a minimum depth of 300mm below the finished grade of the concrete sidewalk or boulevard. Finished grade shall be determined by the Contract Administrator.
- E15.4 The Contractor shall remove and/or dispose of all material resulting from the Work immediately by removing to a landfill site.

MEASUREMENT AND PAYMENT

- E15.5 The grinding of tree stumps will be measured on a unit basis and paid for at the Contract Unit Price per tree stump for “Tree Stump Grinding”. The number to be paid for will be the total number of trees stumps that are ground and disposed of in accordance with this Specification, accepted and measured by the Contract Administrator.

E16. CONSTRUCTION OF VARIOUS CURB TYPES FOR ASPHALT PAVEMENTS

DESCRIPTION

- E16.1 This Specification covers the construction of various curb types for asphalt pavements on Charles Street, Church Avenue, Luxton Avenue, Machray Avenue and St. Johns Avenue/Anderson Avenue Alley approaches.

GENERAL

E16.2 Referenced Standard Construction Specifications and Standard Detail Drawings:

- (a) CW 3110 – Sub-grade, Sub-base and Base Course Construction
- (b) CW 3310 – Portland Cement Concrete Pavement Works
- (c) CW 3240 – Renewal of Existing Curbs
- (d) Standard Detail Drawings SD-200A and SD-220D (Appendix 'B')

CONSTRUCTION METHODS

E16.3 Further to CW 3310, the Contractor shall construct the various curb types for asphalt pavements as per Standard Detail Drawing SD-200A.

E16.4 Construction of Barrier Curb for Asphalt Pavement – Standard Detail Drawing SD-200A

- E16.4.1 Place and compact sub-base material for roadway in accordance with the Standard Detail Drawing SD-200A and Specification CW 3110.
- E16.4.2 Supply and install 20M tie-bars into sub-base material as shown on the Standard Detail Drawing SD-200A.
- E16.4.3 Drill holes into the sub-base material at a maximum depth of 150mm, with a drilling diameter of 2mm greater than the diameter of the tie bar.
- E16.4.4 Supply and install 2-10M longitudinal deformed bars for reinforcement as shown on the Standard Detail Drawing SD-200A.
- E16.4.5 Supply and install 2-19.1mm dowels at transverse joints every 6.0 meters as shown on the Standard Detail Drawing SD-200A. All dowels shall be thoroughly lubricated with asphaltic cut-back.
- E16.4.6 Provide a minimum of 40mm cover between reinforcing steel and the finished concrete surface.
- E16.4.7 Transverse joints will be saw cut every 3.0 meters. Transverse joints are to be saw cut to a maximum depth of 25mm, so as to not saw cut into the 10M longitudinal deformed bars and 19.1mm dowels.
- E16.4.8 Construct Barrier Curb for Asphalt Pavement (180mm reveal ht) in accordance with Standard Detail Drawing SD-200A. Install 20M tie-bars into sub-base material, 2-10M longitudinal deformed bars for reinforcement and 2-19.1mm dowels at transverse joint.
- E16.4.9 Construct Modified Barrier Curb for Asphalt Pavement (180mm reveal ht) in accordance with Standard Detail Drawing SD-200A. Install 20M tie-bars into sub-base material, 2-10M longitudinal deformed bars for reinforcement and 2-19.1mm dowels at transverse joint.
- E16.4.10 Construct Lip Curb for Asphalt Pavement (40mm reveal ht) at private approaches in accordance with Standard Detail Drawing SD-200A. Install 1-10M longitudinal deformed bar for reinforcement and 1-19.1mm dowel only required for lip curb for asphalt pavement at transverse joint.
- E16.4.11 Construct Curb Ramp for Asphalt Pavement (8-12mm reveal ht) at sidewalk ends in accordance with Standard Detail Drawing SD-200A. Install 1-10M longitudinal deformed bar for reinforcement and 1-19.1mm dowel only required for curb ramp for asphalt pavement at transverse joint.
- E16.4.12 Place concrete utilizing slip-form paving equipment in accordance with Specification CW 3310 unless otherwise directed by the Contract Administrator.
- E16.4.13 Place and compact 50mm sub-base material as backfill behind barrier curb for asphalt pavement within excavated area approximately 150mm deep or as directed by the Contract Administrator. Place and compact suitable site material as backfill behind barrier curb for asphalt pavement to allow for 100mm of topsoil and sod below top of barrier curb

for asphalt pavement. Care must be taken so as to not disturb the new barrier curb for asphalt pavement during placing and compaction of 50mm sub-base material and suitable site material.

- E16.4.14 Construct Inlet and Manhole Isolations for Asphalt Pavements in accordance with Standard Detail Drawing SD-220D (Appendix 'B').

MEASUREMENT AND PAYMENT

- E16.5 Construction of barrier curb for asphalt pavement shall be measured on a length basis and paid for at the Contract Unit Price per metre of "Construction of Barrier Curb for Asphalt Pavement". The length to be paid for shall be the total number of meters supplied and installed in accordance with this Specification, accepted and measured by the Contract Administrator.
- E16.6 Construction of modified barrier curb for asphalt pavement shall be measured on a length basis and paid for at the Contract Unit Price per metre of "Construction of Modified Barrier Curb for Asphalt Pavement". The length to be paid for shall be the total number of meters supplied and installed in accordance with this Specification, accepted and measured by the Contract Administrator.
- E16.7 Construction of lip curb for asphalt pavement shall be measured on a length basis and paid for at the Contract Unit Price per metre of "Construction of Lip Curb for Asphalt Pavement". The length to be paid for shall be the total number of meters supplied and installed in accordance with this Specification, accepted and measured by the Contract Administrator.
- E16.8 Construction of curb ramp for asphalt pavement shall be measured on a length basis and paid for at the Contract Unit Price per metre of "Construction of Curb Ramp for Asphalt Pavement". The length to be paid for shall be the total number of meters supplied and installed in accordance with this Specification, accepted and measured by the Contract Administrator.
- E16.9 The supply and installation of 20M tie-bars, 10M longitudinal deformed bars and 19.1mm dowels is incidental to "Construction of Barrier Curb for Asphalt Pavement", "Construction of Modified Barrier Curb for Asphalt Pavement", "Construction of Lip Curb for Asphalt Pavement", and "Construction of Curb Ramp for Asphalt Pavement." No measurement or payment will be made.
- E16.10 Supply and placement of 50mm sub-base material for backfill to be paid for as per payment item "50mm Granular B Recycled Concrete".
- E16.11 Supply and placement of suitable site material for backfill to be paid for as per payment item "Placing Suitable Site Material".
- E16.12 Construction of inlet and manhole isolations for asphalt pavement shall be measured and paid for at the Contract Unit Price per square meter of "Construction of 150mm Type 2 Concrete Pavement". The area to be paid for shall be the total number of square meters supplied and installed in accordance with this Specification, accepted and measured by the Contract Administrator.
- E16.13 Supply and placement of pavement repair fabric to be paid for as per payment item "Supply and Install Pavement Repair Fabric – Type A".

E17. SOFT EXCAVATION TO EXPOSE UNDERGROUND UTILITIES

DESCRIPTION

- E17.1 This Specification covers the soft excavation to expose underground utilities to determine the depth of the underground utility and whether it will interfere with installation of proposed Works on site.

- E17.2 These underground utilities include, but are not limited to, City of Winnipeg Traffic Signal cables, Manitoba Hydro cables, Manitoba Hydro gas pipes, MTS cables, existing sewers, existing watermains and feeder mains.

MATERIALS

- E17.3 Backfill Material

(a) Backfill material for backfill of shafts after hydro-excavation has been completed shall consist of sand in accordance with Specification CW 2030.

CONSTRUCTION METHODS

- E17.4 Prior to commencement of any construction Works adjacent to underground utilities, the Contractor shall use soft digging or hand excavation to expose underground utilities.
- E17.5 Once the elevation of the top of pipe or duct has been determined the resulting excavation shall be backfilled with bedding sand to the elevation of existing ground.

MEASUREMENT AND PAYMENT

- E17.6 Soft excavation to expose underground utilities will be considered incidental to the Work. No measurement and payment will be made within this section.

E18. INSTALLATION OF STREET LIGHTING AND ASSOCIATED WORKS

- E18.1 DEFINITIONS

LIMITS OF APPROACH means the shortest distance that is permissible between live high voltage (>750 volts) conductors or apparatus and any part of a worker's body, material or tools being handled, or equipment operated.

MANITOBA HYDRO CENTRAL STORES means Manitoba Hydro's Waverley Service and Reclaim Centre - 1840 Chevrier Blvd - Winnipeg, Manitoba

OVERHEAD FEED means an electrical supply via an overhead conductor connected between streetlight standards. Typically strung between standards on a temporary basis.

OVERHEAD SOURCE means an electrical supply from Manitoba Hydro's system. (Typically, an overhead conductor from a wooden distribution pole or a DIP/RISER located on a wooden distribution pole.)

RECLAIM material means existing material that has been removed from Manitoba Hydro's system and to be returned to Manitoba Hydro.

SCRAP material means existing material that has been removed from Manitoba Hydro's system and to be recycled/disposed of by the Contractor.

SURPLUS material means new material that has been requisitioned by the Contractor and not incorporated into the work at the end of the Contract.

WORK CLEARANCE means an ELECTRICAL AND/OR NATURAL GAS FACILITIES LOCATE form (see SAMPLE ONLY included as Appendix 'F') issued by each of Manitoba Hydro's Customer Service Centre (CSC) affected to permit work to commence (Permit to work).

- E18.2 DESCRIPTION

- E18.2.1 The work shall consist of the supply of all supervision, labour, materials (except as indicated under MATERIAL SUPPLIED BY MANITOBA HYDRO below) insurance, tools, backfill and equipment (and their maintenance), transportation, fuel, oil, meals and lodging, mobilization and de-mobilization, and warranty of workmanship as required to install and

remove temporary Overhead Feeds, remove existing street light poles as required, install new street light poles and associated underground cables/conduits, all in accordance with the requirements specified in the tender documents.

E18.3 WORK LOCATIONS

E18.3.1 The proposed street light installation and removals are shown on construction drawings and are as follows:

- (a) Luxton Avenue from St. Cross Street to Scotia Street
- (b) Machray Avenue from Aikins Street to Main Street

E18.4 COORDINATION OF WORK

E18.4.1 The Contractor shall provide a minimum of ten (10) working days notice to Manitoba Hydro prior to the start of construction. The work shall be conducted and coordinated with Manitoba Hydro in a manner to ensure street lighting is maintained at all times for the duration of the work. The construction drawings provide the Proposed Sequence of Construction.

E18.4.2 The Contractor shall obtain Work Clearance from Manitoba Hydro's Customer Service Centre(s) (CSC) affected prior to the work commencing. No additional compensation shall be paid to the Contractor for delays obtaining Work Clearance for any reason.

E18.4.3 Manitoba Hydro's CSC will provide the Limits of Approach applicable to the Contractor on the Work Clearance form.

E18.5 ORIENTATION

E18.5.1 Prior to the commencement of the proposed work, the Contractor's crew foremen, electricians, and other key personnel shall attend one (1) day of orientation provided by Manitoba Hydro for various operations such as cable handling, cable splicing/termination, installation of street light poles, concrete bases, luminaires and various other construction standards and procedures. The Contractor will be responsible for all costs associated with personnel salaries, travel, sustenance and overheads, etc., during training.

E18.6 PRE-CONSTRUCTION MEETING

E18.6.1 Prior to the commencement of the work, the Contractor shall attend a pre-construction meeting with Manitoba Hydro. The agenda for this meeting shall include but not be limited to the following:

- (a) Reference the Contractor's Safe work Procedures;
- (b) Prime Contractor;
- (c) materials;
- (d) sequence of construction;
- (e) communication plan;
- (f) any training requirements & qualifications;
- (g) Drawing and Project review;
- (h) a review of the Contractor's proposed work schedule; and
- (i) any and all other topics of clarification that the Contractor and the Contract Administrator may wish to discuss.

E18.6.2 The Contractor's cost to attend this pre-construction meeting shall be incorporated into the unit prices for the work.

E18.7 QUALIFICATIONS AND CERTIFICATION

E18.7.1 The Contractor's Crew Foreman, installers and other key Contractor's Personnel shall possess the necessary certification, licensing, training, experience and familiarity with

safety rules, procedures and hazards relating to the work. Journeyman Power Line Technician (PLT), Journeyman Lineman, Journeyman Cableman or Journeyman Electricians shall be required to perform portions of this work.

E18.7.2 Journeyman Power Line Technician (PLT), Journeyman Cableman and Journeyman Lineman are also required to possess a "Limited Specialized Trade Licence – 'M-P' Licence – Power Line" issued by the Province of Manitoba.

E18.7.3 Office of the Fire Commissioner Bulletin OFC 18 – 002 dated May 23, 2018 regarding Electrician Licenses discusses the requirements for a "Limited Specialized Trade Licence – 'M-P' Licence – Power Line".

For more information contact:
Office of the Fire Commissioner
500-401 York Avenue
Winnipeg, Manitoba R3C 0P8
Tel. 204-945-3373
Fax 204-948-2089
Toll Free: 1-800-282-8069
firecomm@gov.mb.ca

E18.7.4 Licensed Journeyman Electricians or Journeyman PLT or Journeyman Cableman or Journeyman Lineman ARE REQUIRED for all cable handling operations included but not limited to: disconnecting cables in the handhole, installation and removal of temporary overhead feeds, installation and connection of ground rods, streetlight cable splices, termination of streetlight cables in handholds and at luminaires. The Contractor shall employ sufficient qualified personnel on its crews to conform to the Electrician's Licensing Act. The Contractor shall be prepared to provide proof of licences to Manitoba Hydro upon request.

E18.7.5 The Contractor shall assess the hazards associated with the work and have documented Safe work Procedures to perform the work. It is the Contractor's responsibility to train employees on these procedures. The Contractor shall be prepared to provide proof of training to Manitoba Hydro upon request.

E18.8 REFERENCED STANDARD CONSTRUCTION SPECIFICATIONS

E18.8.1 In addition to these Specifications, the work to be performed by the Contractor relative to the installation and/or replacement of street lighting poles, concrete bases and associated cabling shall be in accordance with the following:

- (a) Manitoba Hydro 66kV and Below Standards;
- (b) CSA C22.3 No. 7 (latest edition);
- (c) Canadian Electrical Code (CEC) Part 1 (latest edition); and
- (d) Any other applicable codes
- (e) (collectively, the "Standards")

E18.8.2 Revisions and updates to the Manitoba Hydro 66kV and Below Standards are issued periodically and the latest issued version of the Standard will apply. For the convenience of the Contractor for bidding purposes, excerpts of the Manitoba Hydro 66kV and Below Standards have been included as Appendix 'C'.

E18.8.3 In some cases, Municipal, Provincial or Federal laws or this Technical Specification may be more stringent than the CSA Standards. Whenever conflict exists, the Contractor shall comply with the most stringent requirements applicable at the place of the work.

E18.9 TOOLS, EQUIPMENT AND MATERIALS

E18.9.1 The Contractor shall be required to provide all tools and equipment required for performing the specified tasks. Equipment shall be in good operating condition, shall be properly

maintained using original equipment manufacturer replacement parts and shall be provided with letters of testing/inspection from the manufacturer when requested. Where the equipment is provided as a kit with multiple parts and tools, the kit shall be complete with all parts required to perform the designed task. Contractor fabricated tools or equipment will not be accepted for use.

E18.9.2 The Contractor shall obtain the following specific Electrical Equipment including but not limited to:

- (a) Compression tool or tools and associated dies to perform compressions to a maximum size of 1/0 Al (MD-6 compression tools shall not be used).
- (b) Approved compression tools are:

Manufacture	Type	Model No.	Range
Burndy	In-line, battery	PATMD68-14V	350 Kcmil AL
Cembre	In-line, battery	B54Y (06V081E)	4/0 AWG AL
Burndy	Pistol, battery	BUR PAT60018V	350 Kcmil AL

E18.9.3 Dies shall be of the type shown in Standard CD210-21 and CD 210-24 only, must have identical markings, and compression tool die must match die number stamped on connector.

- (a) Modiewark Model #4444 or Fluke 1AC-II Volt Alert potential Indicator
- (b) Voltage meter – Fluke model #T3C
- (c) Insulated wire cutters – used for cutting cable ends square.

E18.9.4 Alternative equipment manufacturers may be considered upon request by the Contractor and shall be approved for use by Manitoba Hydro prior to use.

E18.9.5 Manitoba Hydro may reject any tools or equipment that do not appear to be in good condition or fail to successfully provide the required function.

E18.10 MATERIAL SUPPLIED BY MANITOBA HYDRO

E18.10.1 Manitoba Hydro shall supply all street light poles, concrete bases, breakaway bases, luminaires, street light arms, ground rods, compression sleeves, grommets, nuts, electrical cables, conduits, relays, cable guards, Gel-caps and all other materials noted in the Standards. The Contractor shall sign receipts indicating the location on which the materials are to be used. The material shall be picked up by the Contractor from the following locations:

E18.10.2 Manitoba Hydro Central Stores (contact personnel will be provided to the successful Contractor).

E18.10.3 Materials requested will be supplied to the Contractor by Manitoba Hydro upon presentation of Manitoba Hydro's Stores Material Order Form. The Contractor shall assume all responsibilities for the loading, unloading, transportation, proper handling, secure storage and working of the materials and shall make replacements at its own expense in case any material is damaged, stolen or lost due to improper handling, storage or poor workmanship.

E18.10.4 The Contractor shall, at the time of materials release, check and confirm the quantity of materials. Shortages, discrepancies, or damages to materials shall be immediately reported in writing to Manitoba Hydro.

E18.10.5 After commencing performance of the work, the Contractor shall continually monitor all material required for the timely completion of the work and shall report additional material requirements to Manitoba Hydro a minimum of 72 hours prior to materials being required to perform the work. No additional compensation shall be paid as a result of delays due to material shortages where additional material requirements were not reported a minimum of 72 hours prior to being required for the work on an active project.

E18.11 MATERIAL SUPPLIED BY CONTRACTOR

E18.11.1 The Contractor shall be responsible to furnish gravel, sand, ¾" down limestone, ¼" down limestone, protective hose (i.e. typically 2" fire hose), duct seal and pit-run material for backfilling around street light poles and around cables as per the Standards. The cost of furnishing the above listed materials shall be incorporated into the unit prices for the work.

E18.12 SURPLUS, RECLAIM AND SCRAP MATERIAL

E18.12.1 Upon completion of the work, the Contractor shall, at its own expense, deliver to Manitoba Hydro Central Stores, all Surplus materials furnished by Manitoba Hydro and not used in the work, regardless of the location of said material at that time.

E18.12.2 In addition, the Contractor shall, at its own expense, deliver to Manitoba Hydro Central Stores all Reclaim materials from the work specifically HPS luminaires. Manitoba Hydro shall be responsible for the proper disposal of Reclaim HPS luminaires. The HPS bulb shall remain installed and unbroken in the Reclaim luminaire. The Contractor shall handle the Reclaim luminaires with care and shall avoid breaking the bulb or refractor.

E18.12.3 Manitoba Hydro's preference is to recycle as much Scrap Material as practicable. The Contractor is responsible to remove the Scrap Material, transport to the recycler or Manitoba Hydro approved disposal site, pay for any disposal fees and may retain any recycling value.

E18.13 DE-ENERGIZATION AND LOCKOUT

E18.13.1 **Manitoba Hydro** - Where a standard is supplied from an Overhead Source, Manitoba Hydro's staff shall be responsible to disconnect and isolate the street light standard or standards between the standard and Overhead Source. Some street light standards may be temporarily fed from an Overhead Source. This Overhead Source shall be disconnected and removed by Manitoba Hydro staff prior to commencing with the work. The streetlight circuits will not be Locked Out by Manitoba Hydro.

E18.13.2 **The Contractor** - The Contractor shall assess the hazards associated with the work and employ its own Safe Work Procedure for the work to be performed. The Contractor's Safe Work Procedure shall include provisions that the street light circuits will not be Locked Out by Manitoba Hydro. The Contractor's Safe Work Procedure shall achieve Lock Out or techniques equivalent to Lock Out.

E18.13.3 The Contractor shall complete a job planning form (an example is included as Appendix 'G') on a daily basis before any work commences and provide Manitoba Hydro with copies of the job plans if requested.

E18.14 TEMPORARY OVERHEAD FEEDS

E18.14.1 Manitoba Hydro in consultation with the Contractor will determine if temporary lighting will be provided by the existing street lights or from the new street lights.

E18.14.2 When using the existing poles for temporary lighting, Manitoba Hydro shall remove an Overhead Source in accordance with DE-ENERGIZATION AND LOCKOUT section above, prior to the Contractor installing a #4 duplex overhead conductor between the existing poles. The #4 duplex overhead conductor will normally be attached to the tenon of the davit arm near the luminaire with a pre-form grip. Older poles may require a spool insulator be attached to the pole using a pre-form grip to support the #4 duplex overhead conductor. A short length of 2C/#12 copper conductor is connected to the terminals of the luminaire brought out and connected to the #4 duplex overhead conductor. The final span to the Overhead Source shall be installed by Manitoba Hydro.

E18.14.3 When using the new poles for temporary lighting, the Contractor shall install the new bases, poles and #4 duplex overhead conductor. The #4 duplex overhead conductor will be attached to the tenon of the davit arm near the luminaire with a pre-form grip. A short length of 2C/#12 copper conductor is connected to the terminals of the luminaire brought out and connected to the #4 duplex overhead conductor. The final span to the Overhead Source shall be installed by Manitoba Hydro.

E18.14.4 All material used to provide the temporary overhead feed shall be returned to Manitoba Hydro. Care shall be taken to coil and tag Reclaim conductor for reuse. If used, insulators shall be handled carefully to prevent breakage.

E18.15 SAFE EXCAVATION

E18.15.1 The work shall be performed in accordance with the requirements of Manitoba Hydro's Safe Excavation and Safety Watch Guidelines (latest revision) included as Appendix 'D' and Manitoba Workplace Safety and Health Regulation 217 latest revision.

E18.16 SAFE HANDLING

E18.16.1 The Contractor shall apply handling techniques in accordance with Manitoba Workplace Health and Safety Regulation 217 (latest revision).

E18.17 ELECTRIC CABLES AND CONDUITS

- (a) The Contractor shall use diligent care and proper equipment in handling of all cables, so as not to injure the jacket and avoid gouging, kinking, scratching or abrading the cables. If any material is damaged to any extent, the Contractor shall repair the damages at its own expense, in a manner approved by Manitoba Hydro or will be charged the full cost of the damaged items.
- (b) Cable reels shall not be dropped and must be handled and placed/stored in an upright position at all times and shall not be laid flat for any purpose or reason. Cable reels shall be adequately supported on hard surface to prevent the reel from sinking into the ground that can cause undue stress on the cables. Cable reels should be inspected for damages prior to use. If a cable reel is found to be defective, such defect shall be reported immediately to Manitoba Hydro.
- (c) The Contractor shall place all material and string the cables in such a manner as to cause the least interference with normal use of the land, street or roadway. All material shall be unloaded in a manner to preserve its condition, prevent loss and/or theft and permit easy access for Manitoba Hydro's inspection.
- (d) The Contractor shall provide Manitoba Hydro's inspector sufficient opportunity, in the sole discretion of Manitoba Hydro, to inspect the work.

E18.18 PRECAST CONCRETE BASES

E18.18.1 The Contractor shall handle, store, transport and unload the precast concrete bases in a manner to prevent damage to the threaded bolts and conduit casing.

E18.18.2 Precast Concrete Bases are extremely heavy. Approximate weight of pre-cast concrete bases are found in the Standards. The Contractor shall only use equipment rated for such weight.

E18.19 STREET LIGHT POLES AND ARMS

E18.19.1 The Contractor shall handle, store, transport, and provide proper load securement for the poles and arms in a manner to prevent damage.

E18.20 LUMINAIRES

E18.20.1 The Contractor shall handle, store, transport and unload the luminaires in their original packaging and in a manner to prevent damage.

E18.21 SMALL MATERIAL

E18.21.1 Photo electric cells, shorting caps, shims, nut covers and associated supplies shall be kept in a suitable warehouse provided by the Contractor at its own expense. Photo electric cells shall be transported and stored in such a manner as to prevent breakage.

E18.22 CARE OF MATERIALS

E18.22.1 The Contractor shall assume all responsibilities of all the materials and shall replace, at its own expense, any materials damaged, stolen or lost due to improper handling or poor workmanship.

E18.23 WIRE AND CABLE REEL STORAGE

E18.23.1 Cable reels shall be stored with the flanges upright and resting on a hard surface. At temporary storage sites where the soil may be soft, preservative-treated plywood sheets may be used to keep the flanges from sinking into the ground.

E18.23.2 If cable reels must be pancaked or stored on their side in vertical racks, do not lift the reel by the top flange. Spacers (two 2 X 4s placed wide side up) should be placed under the bottom flange and between the reels in order to create a space to insert the forks and lift the reels without damaging the cable.

E18.24 REEL HANDLING

E18.24.1 When off-loading reels from a truck, reels shall be lowered using a hydraulic gate, hoist or forklift truck. When a reel is rolled from one point to another, care must be taken to see that the reel does not straddle objects such as rocks, pipes, curbs or wooden blocks which could damage the cable or protective covering. A reel should always be rolled on hard surfaces to avoid sinkage and in the opposite direction to the cable wraps to ensure that the reel is rolled in such a direction as to tighten the cable on the reel.

E18.24.2 When using a hoist, install a mandrel through the reel arbour hole and attach a sling. Use a spreader bar approximately 6 inches longer than the overall reel width placed between the sling ends just above the reel flanges. This will prevent bending of the reel flanges and damage to the cable.

E18.24.3 If a forklift is used to move a reel, the reel is to be approached from the flange side. Position the forks such that the reel is lifted by both reel flanges. The lift forks shall not contact the cable.

E18.24.4 Returnable reels shall be returned promptly to Manitoba Hydro Central Stores and in no case later than three (3) days after the completion of the work unless otherwise mutually agreed between the Contractor and Manitoba Hydro.

E18.25 PRESSURIZED WATER/VACUUM EXCAVATION

E18.25.1 Pressurized water/vacuum excavation (PW/VE) shall be used to daylight all buried utilities and structures where excavation by other mechanical means would be expected to provide a physical risk to that utility or structure.

E18.25.2 The work shall be performed in accordance with the requirements of Manitoba Hydro's Safe Excavation and Safety Watch Guidelines (latest revision) included as Appendix 'D'.

E18.26 REMOVAL STREET LIGHT POLE FROM EXISTING BASE

E18.26.1 This shall include all work required to remove a street light pole from an existing base as set forth in this Technical Specification. The pole may be on an existing precast concrete base, steel power installed screw base or poured in place concrete base.

E18.26.2 The Contractor shall furnish all labour, supplies and materials (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary for the removal of the street light pole from the existing base. Care shall be taken to preserve the luminaire. The luminaire shall be reinstalled on the new street light pole or returned to Manitoba Hydro's stores as instructed by the Manitoba Hydro.

E18.26.3 The Contractor shall be responsible to transport all Surplus and Reclaim materials to Manitoba Hydro Central Stores and transport and dispose of all Scrap material as set forth in this Specification.

E18.27 REMOVAL OF BASE AND DIRECT BURIED STREET LIGHT POLE

- E18.27.1 This shall include all excavation, whether by auger, pressurized water/vacuum excavation, by hand, or by other methods which may be necessary to remove a base or direct buried street light pole. The base may be poured in place concrete, steel power installed or precast concrete.
- E18.27.2 The Contractor shall be responsible to transport all Surplus and Reclaim materials to Manitoba Hydro Central Stores and transport and dispose of all Scrap material as set forth in this Specification.
- E18.27.3 The Contractor is responsible to supply all backfill material as specified in the Standards and carry out all backfill, compacting and leveling of all excavations and voids for removed bases and direct buried street light poles so as to be ready for top soil and seed or sod or as directed by Manitoba Hydro.

E18.28 INSTALLATION OF FOUNDATION - CONCRETE BASE

- E18.28.1 This shall include all excavation, whether by auger, pressurized water/vacuum excavation, by hand, or by other methods which may be necessary to replace or install a concrete base as set forth in this Specification.
- E18.28.2 The Contractor shall furnish all labour, supplies and material (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary to install a new or replace a concrete base. Excavation for the precast concrete base shall be to a diameter and depth specified in Standard CD 300-6. All excess material is to be removed by the Contractor.
- E18.28.3 The concrete base shall be set on a bed of $\frac{3}{4}$ " down limestone. The concrete base backfill material shall be compacted in lifts no more than 150 mm. Backfill material shall be $\frac{3}{4}$ " down limestone. Compacting of backfill material shall be done using a hydraulic tamper. Alternative tamping methods shall be approved by Manitoba Hydro. Underground cables entering the concrete base shall be protected by a length of protective hose supplied by the Contractor and a layer of sand surrounding the cables to protect it from the limestone. The concrete base shall be installed level in all 4 directions. Final grade must be established prior to installing the concrete bases.
- E18.28.4 The completed backfill shall be at least equal in compaction to undisturbed soil, as required by the Municipal authorities or elsewhere in this Specification. The Contractor shall level all excavations.
- E18.28.5 Should settlement occur in the excavation and cause a depression in the surface, the Contractor shall repair the surface. Placing of additional backfill material due to settlement shall be at the Contractor's expense.
- E18.28.6 The concrete base shall be oriented in the proper direction to allow the easy entrance of the underground cables into the plastic pipe preinstalled in the concrete base. Care shall be taken to prevent damage to the insulation or jacket of the conductors. The cable shall be left long enough to extend one (1) metre beyond the top of the hand hole.

E18.29 BASE MOUNTED STREET LIGHT POLES

- E18.29.1 This shall include all work required to install the street light pole on the concrete base as set forth in this Specification.
- E18.29.2 The Contractor shall furnish all labour, supplies and material (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary for the installation of the pole (straight shaft or davit) on the concrete base.
- E18.29.3 Unless otherwise specified on the construction drawings, the Contractor shall orient the poles so that the hand hole is on the left side of the pole when viewed from the road. A worker should be able to see oncoming traffic when working in the hand hole.
- E18.29.4 The Contractor shall level the street light pole in all 4 directions. Leveling shims may be used.

- E18.29.5 Tightening of bolts shall be performed in a manner that brings the surfaces up evenly. All nuts shall be tightened and torqued in accordance with Standard CD 300-9. The Contractor shall install the nut covers included with the pole.
- E18.29.6 Unless otherwise specified, excess underground cable and 2C-12 wire shall be left inside the hand hole with the hand hole cover loosely installed.
- E18.29.7 Existing street light poles may have street signs attached. The Contractor shall remove the signs from the existing pole and temporarily reattach the signs to the new pole. The Contractor shall notify Manitoba Hydro of the location where the signs have been removed.

E18.30 LUMINAIRES AND ASSOCIATED WIRING

- E18.30.1 The Contractor shall furnish labour, supplies and material (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary to install the luminaire and associated wiring. Unless otherwise specified, the luminaire shall be installed with a tilt of zero (0) degrees. The Contractor shall install a length of 2 conductor No. 12 gauge (2C-12) wire from the terminals of the luminaire, through the arm (if applicable), down the pole to the hand hole. One (1) metre of 2C-12 wire shall be left at the hand hole. Impact equipment (air or electric) shall not be used to tighten luminaire mounting bolts. The Contractor shall be liable for damage due to over tightening.
- E18.30.2 The Contractor shall verify the luminaire voltage matches the source voltage as shown on the construction drawings. If luminaire voltage does not match the source voltage, the Contractor shall re-wire the luminaire in accordance with the wiring diagram provided. NOTE: Not applicable for LED luminaires.
- E18.30.3 As specified on the construction drawings, the luminaire will require either a photo electric cell (PEC) or shorting cap installed. When installing the PEC the eye shall be oriented north. The Contractor shall also install the appropriate wattage bulb in the luminaire. NOTE: Bulb installation not applicable for LED luminaires.

E18.31 BREAK AWAY BASES

- E18.31.1 Break away bases shall be installed in accordance with Standard CD 300-10. The height of the concrete base above grade shall not exceed 50mm. The surface of the concrete base shall be flat and level. A reaction plate shall be installed between the concrete base and the break-away base.
- E18.31.2 The Contractor shall torque the couplers in accordance with Standard CD 300-10. Impact tools shall not be used to tighten or torque couplers or nuts associated with a break away base.

E18.32 SPLICING/CONNECTING CABLES

- E18.32.1 The electric cable shall be spliced/terminated as per Standards CD 215-12, CD 215-13, CD 310-1, CD 310-4, CD 310-9 and CD 310-10 with the exception that the Contractor will use a GELCAP-SL-2/0 splice kit (See Appendix 'E'). Termination in the hand hole may include the installation of an inline fuse holder.
- E18.32.2 The Contractor shall furnish all labour, supplies and material (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary to splice/terminate the street light conductor(s).

E18.33 EXCAVATION

- E18.33.1 The Contractor shall furnish all labour, supplies and material (except as indicated in the Section "MATERIAL SUPPLIED BY MANITOBA HYDRO") necessary for the completion and maintenance of grade and line of the street light cables and conduit including water control if found to be necessary. The trench shall be graded to conform to the street light cables and conduit so that the street light cables and conduit rest firmly on a smooth surface throughout its length. All stones or other objects which, in the opinion of Manitoba Hydro might damage the street light cable jacket and conduit shall be removed. Where the presence of rock or other condition prevent a satisfactory bed for the cables, 150 mm of

well-tamped, clean soil or ¼" down crushed limestone shall be placed in the bottom of the trench. In this case, the spoil bank from trenching operations shall not be allowed to fall into the trench or mix with the soil to be used in backfilling the trench. Loose debris or foreign matter and the spoil bank shall be placed so as not to hinder drainage, damage property, or obstruct traffic.

E18.33.2 Trenches shall be dug to such a depth that will provide a minimum cover of 600 mm from final grade in sodded areas and 1000 mm in roadways in accordance with Standard CD 305-1.

E18.34 LAYING CABLES

E18.34.1 Cables are to be lowered in the trench in an orderly fashion so as to maintain a consistent path and straight alignment. All cables shall be lowered in a continuous run (NO SPLICING) and in accordance with the construction drawings; and shall maintain the necessary separation, where required. All cables shall be of continuous runs and capped and sealed if they are not being installed in the pole at that time. Cables shall not be dragged over paved surfaces.

E18.34.2 Once a cable is cut its ends must be sealed immediately with an approved and appropriately sized, heat shrink or cold shrink sealing cap to prevent moisture ingress unless the cable is being installed in the pole at that time.

E18.34.3 During the removal of the cable, the reels shall be placed on jacks, stands or trailers with a bar through the arbour holes which will allow the reel to be turned easily, and the cable to be paid out. Cables can be paid out from the bottom or the top of the reel. Cable in coils shall be handled in a similar manner. This can be achieved by supporting the coil in a vertical plane and rotating it by hand as the cable is carefully uncoiled. The cable shall never be pulled over the flange of a reel, or pulled off the side of a coil, since this will introduce a twist in the cable.

E18.34.4 During installation, under no circumstance is the cable to be subjected to a bending radius tighter than that detailed in the Standards.

E18.34.5 Where specified in the Standards or on the construction drawings, the Contractor shall install the street light cable in a conduit.

E18.35 INSTALLING CONDUIT AND CABLE BY BORING (HORIZONTAL DIRECTIONAL DRILLING)

E18.35.1 The Contractor shall dig the approaches and openings necessary to install boring equipment, and the boring equipment used shall be of such a nature as to minimize the opening size required. The boring equipment shall produce a straight hole without unnecessary dips or bends. The bore hole shall be only slightly larger than the outside diameter of the conduits or cables to minimize possible settlement. Cables and conduits shall be pulled in with pulling eyes or using a kelly grip in a manner so as to guard against damage.

E18.35.2 During construction as the drill bit crosses each existing facility a lookout shall be assigned by the Contractor to visually confirm the drill bit is maintaining a minimum 300 mm clearance from the existing facility all in accordance with Manitoba Hydro Safe Excavation and Safety Watch Guidelines (latest revision) included as Appendix 'D'. Maximum pulling tensions on any streetlight cable shall be limited to 2.9 kN/0.65 kips.

E18.35.3 Drilling fluids and associated waste materials shall be disposed of in a manner that minimizes environmental effects.

E18.35.4 The Contractor shall properly compact the backfill material and will be responsible for placing additional material should settlement occur for the duration of the warranty period.

E18.36 BURIED UTILITY CROSSINGS

E18.36.1 All buried obstructions are not necessarily shown on the reference drawings and the locations of those indicated are approximate only.

- E18.36.2 The Contractor shall determine the location of all buried obstructions and shall notify the appropriate authorities and obtain all necessary permits prior to excavation, trenching and directional drilling near or across such obstructions. All buried obstructions where the new buried cable route crosses other utilities including but not limited to gas, water, sewer, telephone and electric lines shall be exposed as per each utilities guidelines by the Contractor, including the use of Pressurized Water/Vacuum Equipment (PW/VE) where necessary. Should any damage occur to such lines during the course of the work, the Contractor shall be responsible for the damage and the costs of repairs to buried obstructions caused by its operations and shall fully indemnify the City of Winnipeg and Manitoba Hydro from and against all claims arising out of such damage. Manitoba Hydro Safe Excavation and Safety Watch Guidelines (latest revision) included as Appendix 'D' shall be followed when crossing natural gas pipelines and electrical cables by the directional boring method.
- E18.36.3 The PW/VE technique, used to expose underground plant in certain conditions, must be performed in accordance with each utility's requirements, including but not limited to Manitoba Hydro, Manitoba Telecom Services, Shaw Cable, etc. PW/VE costs that the Contractor will incur during the work must be factored into the Contractor's bid prices. The Contractor shall not be entitled to extra compensation for the use of PW/VE on the work.
- E18.36.4 The Contractor shall be responsible to supply all backfill material and carry out all backfill, compacting and leveling of all excavations so as to be ready for topsoil and seed or sod or as directed by Manitoba Hydro.

E18.37 BENDING CABLES/CONDUITS AND INSTALLATION INTO STANDARDS

- E18.37.1 It is desired to reduce to a minimum the required number of bends and to lay the cables/conduits to conform to the contour of the ground and maintain a normal covering. This shall be accomplished by cutting the trench slightly deeper in approaches to road crossings and drainage ditches. It is intended that the Contractor shall eliminate unnecessary bending by operating the trenching machine at various depths rather than by finishing grading the trench by hand whenever practical.
- E18.37.2 Sharp bends of the cables/conduits shall be avoided at all times. All bends shall meet the requirements set out in this Specification. If excessive bending was exerted on any cable, the cable shall be replaced at the Contractor's cost. During installation, under no circumstance is the cable to be subjected to a bending radius tighter than that detailed in the Standards. At street light poles the Contractor shall install the ends of the cables into the plastic pipe preinstalled in the concrete base. Care shall be taken to prevent damage to the insulation or jacket of the conductors. Underground cables entering the concrete base shall be protected by a length of protective hose supplied by the Contractor and by a layer of sand surrounding the cables to protect it from the limestone. The cable shall be left long enough to extend one (1) metre beyond the hand hole. The street light cable in the trench shall be installed in conduit for mechanical protection and the ends sealed with duct seal supplied by the Contractor. Care shall be taken to prevent damaging the cable where it exits the conduit. The conduit shall only be installed into the concrete base if conduit sizes make it practicable.
- E18.37.3 Unless otherwise directed, excess underground cable and 2C-12 wire shall be left inside the hand hole with the hand hole cover loosely installed.

E18.38 BACKFILL

- E18.38.1 All backfilling material within 300 mm of the cables/conduits shall be clean, free of sod, vegetation, organic material, stones or other debris, and of a consistency as to not create significant voids or air spaces around the cables/conduits. Other backfilling material shall be free of stones greater than 150 mm on their maximum dimension. Where cinders or very acid soil are encountered or where gravel or incompressible fill is required by Municipal authorities, ¼" down crushed limestone shall be placed all around the cables for a depth of at least 300 mm. The completed backfill shall be at least equal in compaction to undisturbed soil or as directed by Manitoba Hydro. Backfill material is to be placed and

compacted in lifts not exceeding 300 mm. All excess material is to be removed by the Contractor.

- E18.38.2 Tamping or flushing methods must be used where necessary to give the required compaction. Where tamping is used, hand tampers shall be used to at least 300 mm above the cable before machine tamping may be used. The Contractor shall level all excavations so as to be ready for topsoil and seed or sod or as directed by the Manitoba Hydro. Should settlement occur in the excavation and cause a depression in the surface, the Contractor shall repair the surface to the satisfaction of the Manitoba Hydro at the Contractor's cost.
- E18.38.3 Excavations remaining where poles have been removed shall be backfilled with spoil, pit run gravel or ¾" down limestone and compacted in lifts of 150mm as directed by Manitoba Hydro. The top 300 mm of the excavation shall be backfilled with topsoil.
- E18.38.4 Excavations remaining where utility crossings have been exposed shall be backfilled with sand or clean spoil and compacted in lifts of 150mm. The top 300 mm of the excavation shall be backfilled with topsoil.
- E18.38.5 Backfill of all excavations shall be in accordance with City of Winnipeg Standard Construction Specification CW 2030 (latest revision), to the satisfaction of the authority having jurisdiction and Manitoba Hydro.

E18.39 DEFECTIVE WORK & WARRANTY

- E18.39.1 If any portion of the work fails to comply with the requirements of this Specification, fails within the Warranty period, or if the final tests prove or indicate the existence of any fault or defect in the work, or any part thereof, Manitoba Hydro may forthwith re-execute or make good the faulty or defective work or alter the same to make it comply with requirements of the Specification at the Contractor's expense. Manitoba Hydro shall give the Contractor notice together with particulars of such failure, fault or defect, Manitoba Hydro's cost to re-execute or make good the faulty or defective work and the Cost shall be deducted from the Contract.
- E18.39.2 At the completion of the work for each location, Manitoba Hydro shall prepare and issue a Network Commissioning Report, a sample of which is included as Appendix 'H', to the Contractor. The Network Commissioning Report shall be dated indicating the commencement of the Warranty period for the work performed at the location.

E18.40 AS-BUILT DRAWING

- E18.40.1 The Contractor shall provide an as-built drawing or mark-up drawing to Manitoba Hydro which accurately displays the "as-built" location of the buried street light cables, conduits and street light poles.

E18.41 MEASUREMENT AND PAYMENT

- E18.41.1 Removal of 25' to 35' street light pole and precast, poured in place concrete, steel power installed base or direct buried including davit arm, luminaire and appurtenances
- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Removal of 25' to 35' street light pole and precast, poured in place concrete, steel power installed base or direct buried including davit arm, luminaire and appurtenances". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including removal of the pole, base, luminaire, appurtenances, use of pressurized water/vacuum excavation, transportation of Reclaim, Surplus and Scrap material, payment of associated disposal fees and all other items incidental to the work included in the Specification.
- E18.41.2 Removal of 45' street light pole and precast, poured in place concrete, steel power installed base or direct buried including davit arm, luminaire and appurtenances

- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Removal of 45' street light pole and precast, poured in place concrete, steel power installed base or direct buried including davit arm, luminaire and appurtenances". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including removal of the pole, base, luminaire, appurtenances, use of pressurized water/vacuum excavation, transportation of Reclaim, Surplus and Scrap material, payment of associated disposal fees and all other items incidental to the work included in the Specification.
- E18.41.3 Installation of Conduit and #4 AL C/N or 1/0 AL Triplex Streetlight Cable in Conduit by Open Trench Method
- (a) This pay item will be measured on a linear metre basis and paid for at the Contract Unit Price per linear metre for "Installation of Conduit and #4 AL C/N or 1/0 AL Triplex streetlight cable in Conduit by open trench method." The number of meters to be paid for at the Contract Unit Price shall be measured and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of the conduit, pulling cable into the conduit, backfilling the trench, buried utility crossings, use of pressurized water/vacuum excavation and all other items incidental to the work included in the Specification.
- E18.41.4 Installation of 50 mm Conduit by Boring Method complete with Cable Insertion (#4 AL C/N or 1/0 AL Triplex)
- (a) This pay item will be measured on a linear metre basis and paid for at the Contract Unit Price per linear metre for "Installation of 50 mm conduit or conduits by boring method complete with cable insertion (#4 AL C/N or 1/0 AL Triplex)." The number of meters to be paid for at the Contract Unit Price shall be measured and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of 50mm conduit or conduits by boring method, inserting the #4 AL C/N or 1/0 AL Triplex streetlight cable into the conduit(s), buried utility crossings, use of pressurized water/vacuum excavation and all other items incidental to the work included in the Specification.
- E18.41.5 Installation of cable (#4 AL C/N or 1/0 AL Triplex) by boring method.
- (a) This pay item will be measured on a linear metre basis and paid for at the Contract Unit Price per linear metre for "Installation of cable(s) (#4 AL C/N or 1/0 AL Triplex) by boring method." The number of meters to be paid for at the Contract Unit Price shall be measured and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of the cable or cables by boring method, buried utility crossings, use of pressurized water/vacuum excavation and all other items incidental to the work included in the Specification.
- E18.41.6 Installation of 25'/35' Pole, Davit Arm and Precast Concrete Base Including Luminaire and Appurtenances
- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Installation of 25'/35' pole, davit arm and precast concrete base including luminaire and appurtenances." The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of the pole, davit arm, base, luminaire, appurtenances, placing the cable(s) into the base, use of pressurized water/vacuum excavation and all other items incidental to the work included in the Specification.

- E18.41.7 Installation of 45' Pole, Davit Arm and Precast Concrete Base Including Luminaire and Appurtenances
- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Installation of 45' pole, davit arm and precast concrete base including luminaire and appurtenances." The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of the pole, davit arm, base, luminaire, appurtenances, placing the cable(s) into the base, use of pressurized water/vacuum excavation and all other items incidental to the work included in the Specification.
- E18.41.8 Installation of One (1) 10' Ground Rod at Every Third Street Light, at the End of a Street Light Circuit or Anywhere Else as Shown on the Design Drawings. Trench #4 Ground Wire up to 1 m From Rod Location to New Street Light and Connect (Hammerlock) to Top of Ground Rod
- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Installation of one (1) 10' ground rod at every third street light, at the end of a street light circuit or anywhere else as shown on the design drawings. Trench #4 ground wire up to 1 m from rod location to new street light and connect (hammerlock) to top of the ground rod." The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including install one (1) 10' ground rod, trench the #4 ground wire to the new streetlight pole, connect (hammerlock) ground wire to rod and all other items incidental to the work included in the Specification.
- E18.41.9 Installation of Lower 3 m of Cable Guard, Ground Lug, Cable Up Pole, and First 3 M Section of Ground Rod Per Standard CD 315-5
- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Install/lower 3 m of Cable Guard, ground lug, cable up pole, and first 3 m section of ground rod per Standard CD 315-5". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installing the lower section of cable guard, ground lug, ground rod, coiling cable(s) up the pole and all other items incidental to the work included in the Specification.
- E18.41.10 Installation and Connection of Externally-Mounted Relay and PEC Per Standards CD 315-12 and CD 315-13
- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Installation and connection of externally-mounted relay and PEC per Standards CD 315-12 and CD 315-13". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including mounting the relay, PEC, wiring as per the schematic and all other items incidental to the work included in the Specification.
- E18.41.11 Termination of 2/C #12 Copper Conductor to Street Light Cables Per Standard CD310-4, CD310-9 or CD310-10
- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Terminate 2/C #12 copper conductor to street light cables per Standard CD310-4, CD310-9 or CD310-10". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including connection of the 2/C # 12 copper conductor to the #4 C/N or 1/0 Al Triplex cable(s) using a GELCAP-SL-2/0

splice kit and all other items incidental to the work included in the Specification.

E18.41.12 Splicing #4 AL C/N or 2 Single Conductor Street Light Cables

- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Splicing #4 AL C/N or 2 single conductor street light cables". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including splicing the #4 AL C/N or 2 single conductor cables in accordance with Standard CD 215-12 and CD 215-13 and all other items incidental to the work included in the Specification.

E18.41.13 Splicing 1/0 AL Triplex Cable or 3 Single Conductor Street Light Cables

- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Splicing 1/0 AL triplex cable or 3 single conductor street light cables". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including splicing the 1/0 AL triplex cable or set of 3 single conductor cables in accordance with Standard CD 215-12 and CD 215-13 and all other items incidental to the work included in the Specification.

E18.41.14 Installation of Break-Away Base and Reaction Plate on Base-Mounted Poles up to 35'

- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for "Installation of break-away base and reaction plate on base mounted poles up to 35'". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including installation of the reaction plate, break-away base and all other items incidental to the work included in the Specification.

E18.41.15 Installation of Overhead Span of #4 Duplex Between New or Existing Streetlight Poles and Connect Luminaire to Provide Temporary Overhead Feed

- (a) This pay item will be measured on per span basis and paid for at the Contract Unit Price per span for "Installation of Overhead Span of #4 duplex Between New or Existing Streetlight Poles and Connect Luminaire to Provide Temporary Overhead Feed". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including attachment of the #4 duplex overhead conductor using a perform grip (c/w spool insulator(s) to davit arm if necessary), sagging conductor, connection of luminaire using 2C#12 copper conductor and all other items incidental to the work included in the Specification.

E18.41.16 Removal of Overhead Span of #4 Duplex Between New or Existing Streetlight Poles to Remove Temporary Overhead Feed

- (a) This pay item will be measured on a per span basis and paid for at the Contract Unit Price per span for "Removal of Overhead Span of #4 duplex Between New or Existing Streetlight Poles to Remove Temporary Overhead Feed". The number of units to be paid for at the Contract Unit Price shall be verified and accepted by the Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including removal of the #4 duplex overhead conductor, spool insulator(s) and all other items incidental to the work included in the Specification.

E18.41.17 Expose Underground Cable Entrance of Existing Streetlight Pole and Install New Streetlight Cable(s).

- (a) This pay item will be measured on a unit basis and paid for at the Contract Unit Price per unit for “Expose Underground Cable Entrance of Existing Streetlight Pole and Install New Streetlight Cable(s)”. The number of units to be paid for at the Contract Unit Price shall be verified and accepted by Manitoba Hydro. The Price shall be payment in full for performing all operations herein described including excavation and exposure of the underground cable entrance by any means necessary including use of pressurized water/vacuum excavation, installation of the new streetlight cables(s), backfill, compaction and all other items incidental to the work included in the Specification.

E19. SUPPLY AND INSTALLATION OF MTS RING

DESCRIPTION

E19.1 General

E19.1.1 This Specification covers the supply and installation of MTS riser rings.

E19.2 Referenced Standard Construction Specifications

- (a) CW 3210-R8

MATERIALS

E19.3 Approved Products

- (a) Trojan Industries – TF-113-2”

MEASUREMENT AND PAYMENT

E19.4 MTS riser rings will be measured on a unit basis and paid for at the Contract Unit Price per unit as “Supply and Installation of MTS Riser Ring” in accordance with this Specification and accepted by the Contract Administrator.

E20. ROADWORKS IN CLOSE PROXIMITY TO A FEEDERMAIN

E20.1 Pre-work, Planning and General Execution:

- (a) No work shall commence at the site until the construction method statement has been approved, a pre-construction meeting has been held, and the Feedermain location has been clearly delineated in the field by use of paint, staking/flagging, construction fencing, snow fencing, or other suitable methods.
- (b) The Contractor shall ensure that all work crew members understand and observe the requirements of this Specification. Prior to commencement of onsite work, the Contractor shall jointly conduct an orientation meeting with the Contract Administrator and with all superintendents, foremen, and heavy equipment operators to make all workers on site fully cognizant of the limitation of altered loading on the Feedermain, the ramifications of inadvertent damage to the Feedermain and the constraints associated with work in close proximity to the Feedermain.
- (c) For traverse crossings of the Feedermain in support of the roadworks activities, designate crossing locations just beyond the construction site and confine equipment crossing the Feedermain at those locations. Reduce equipment speeds to levels that minimize impact loadings.
- (d) For construction work activities either longitudinally or transverse to the alignment on the Feedermain, work only with equipment and in the manner stipulated in the approved construction method statement and the requirements noted herein.
- (e) Subgrade, subbase, and base course construction shall be kept in a rut free condition at all times. Construction equipment is prohibited from crossing the Feedermain if the grade is insufficient to support the equipment without rutting.

- (f) Granular material, construction material, soil or other material shall not be stockpiled on the Feedermain or within 5 metres of the Feedermain centerline.
- (g) Stage construction such that the Feedermain is not subject to significant asymmetrical loading at any time.
- (h) Where work is in proximity to the Feedermain, utilize construction practices and procedures that do not impart excessive vibration loads on the Feedermain or that would cause settlement of the subgrade below the Feedermain.

E20.2 Demolition and Excavation:

- (a) Concrete demolition and removal within 3 metres horizontally of the Feedermain shall be completed by saw-cutting and removal, or use of hand-held jackhammers. Use of machine mounted concrete breakers above the Feedermain shall not be permitted.
- (b) Where there is less than 2.5 metres of cover over the Feedermain, offset the excavator or excavation equipment from the Feedermain a minimum of 2.5 metres from the Feedermain centerline to carry out excavation.
- (c) Where there is less than 1.6m of earth cover over the Feedermain and further excavation is required either adjacent to or over the Feedermain, utilize only smooth-edged excavation buckets, soft excavation, or hand excavation techniques.
- (d) Excavated materials intended for reuse shall not be dumped directly on the Feedermain but shall be carefully bladed into place.

E20.3 Sub-grade Construction:

- (a) Sub-grade compaction within three metres (horizontal) of a the Feedermain shall be limited to non-vibratory methods only. Small walk behind vibratory packers will be permitted.
- (b) Construction operations shall be staged to minimize the time period between excavation to sub-grade and placement of granular sub-base materials. Should bare sub-grade be left overnight, measures shall be implemented to protect the sub-grade against inadvertent travel over it and minimize the impact of wet weather.
- (c) Sub-grade conditions should be inspected by personnel with competent geotechnical experience (e.g. ability to adequately visually classify soils and competency of sub-grade, sub-base, and base course materials). In the event of encountering unsuitable sub-grade materials above the Feedermain, proposed design revisions shall be submitted to this office for review to obtain approval from the Water and Waste Department relative to any change in conditions.

E20.4 Sub-base and Base Course Construction:

- (a) Sub-base or base course material shall not be dumped directly on top of the Feedermain, but shall be carefully bladed into place.
- (b) Sub-base compaction shall be either carried out by static methods without vibration or with smaller equipment such as hand-held plate packers or smaller roller equipment.

E21. HAULING AND PLACEMENT OF 50MM GRANULAR B RECYCLED CONCRETE AGGREGATE

DESCRIPTION

E21.1 General

E21.1.1 This Specification covers the hauling from a designated supplier and installation of 50 mm Granular B Recycled Concrete Aggregate.

E21.1.2 Referenced Standard Construction Specifications:

- (a) CW 3110 – Sub-Grade, Sub-Base and Base Course Construction
- (b) CW 3610 – Installation of Culverts

MATERIALS

E21.2 Materials will be provided to the Contractor by Wintec Building Services Inc. in accordance with Tender 986-2022.

HAULING OF MATERIAL

E21.3 The Contractor shall obtain the 50 mm Granular B Recycled Concrete Aggregate from 100 John Shott Road, RM of Springfield.

E21.4 The Contractor shall place orders for material by calling Wintec Dispatch at (204)-958-5731.

E21.5 The material will be available for pick up between the following hours:

(a) 0700 to 1800 from Monday to Friday

(b) 0700 to 1400 on Saturday

E21.6 Further to E21.5, material will not be available for pick up on general holidays in Manitoba.

E21.7 Requests for pick-up outside of these hours will must be made a minimum of (4) four Business Days in advance to the Contract Administrator.

E21.8 The Contractor will be provided use of the scale at the pick-up site to facilitate tare and gross vehicles weights. A printed ticket will be provided for each load.

E21.9 The supplier shall load the material into the Contractors truck/truck trailer and shall facilitate unloading when a truck has been overloaded.

CONSTRUCTION METHODS

E21.10 Construction methods will be in accordance with CW 3110.

QUALITY ASSURANCE TESTING

E21.11 Quality Assurance Testing for physical properties as per CW 3110 will not be required. Field Density Testing will be required as per CW 3110.

MEASUREMENT AND PAYMENT

E21.12 The hauling, placing and compaction of sub-base material will be measured on a weight basis and paid for at the Contract Unit Price per tonne for the "Hauling and Placing Sub-base Material" listed here below. The weight to be paid for will be the total number of tonnes of sub-base material supplied, placed and compacted in accordance with this Specification, accepted and measured by the Contract Administrator.

E21.13 Items of Work:

(i) 50 mm Granular B Recycled Concrete

E21.14 The weight to be paid for will the total number of tonnes of sub-base material as measured on a certified weight scale.

E21.15 Only material placed within the limits of excavation will be included in the payment for the "Items of Work listed for sub-base material".

E21.16 No measurement or payment will be made for materials rejected by the Contract Administrator.

E22. MIX DESIGN PROPORTION

E22.1 General

E22.1.1 Further to CW 3310-R18, this Specification covers the mix proportion for all concrete types related to, the construction of Portland Cement Concrete pavements, curbs, gutters,

private approaches, bull-noses, median slabs, safety medians and boulevard splash strips, sidewalks and other concrete works.

E22.2 Referenced Standard Construction Specifications

E22.2.1 CW 3310 – Portland Cement Concrete Pavement Works

E22.3 Mix Design

E22.3.1 Further to CW 3310-R18 Table CW 3310.5, the minimum cementitious contents shall be as follows:

- Type 1 - 380 kg/m³
- Type 2 - 360 kg/m³
- Type 3 - 380 kg/m³
- Type 4 - 380 kg/m³
- Type 5 - 340 kg/m³
- Type 6 - 360 kg/m³

E22.4 Requirements

E22.4.1 The Mix Design Statements for all the concrete shall be submitted to the City of Winnipeg, Research and Standards Engineer for approval.

E22.5 Quality Assurance

E22.5.1 The Contract Administrator shall ensure the frequency and number of quality assurance tests in accordance with CW 3310.

E23. CHARLES STREET SUB-BASE COMPACTION REQUIREMENTS

E23.1 General

E23.1.1 Further to CW 3110-R22, this Specification covers the sub-base compaction requirements for the initial 200mm lift of 50mm sub-base layer on Charles Street from Church Avenue to the north limit of Machray Avenue.

E23.2 Construction Method

E23.2.1 Place and compact the initial 200mm lift of 50mm sub-base layer as per CW 3110, 3.5 Placement of Sub-base Material with Geotextile Fabric and Geogrid, to a minimum of 95% Standard Proctor Dry Density.

E23.2.2 No vibratory compaction will be allowed within the excavation limits.