



**THE CITY OF WINNIPEG**

# **TENDER**

**TENDER NO. 429-2025**

**2025 STREETS MAINTENANCE PRESERVATION PROGRAM**

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## **Appendix A – Special Provision (Asphalt Pavement Works)**

## **PART B - BIDDING PROCEDURES**

### **B1. CONTRACT TITLE**

B1.1 2025 Streets Maintenance Preservation Program

### **B2. SUBMISSION DEADLINE**

B2.1 The Submission Deadline is 12:00 noon Winnipeg time, June 5, 2025.

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. ENQUIRIES**

B3.1 All enquiries shall be directed to the Contract Administrator identified in D5.1.

B3.2 If the Bidder finds errors, discrepancies or omissions in the Tender, or is unsure of the meaning or intent of any provision therein, the Bidder shall notify the Contract Administrator of the error, discrepancy or omission, or request a clarification as to the meaning or intent of the provision at least five (5) Business Days prior to the Submission Deadline.

B3.3 Responses to enquiries which, in the sole judgment of the Contract Administrator, require a correction to or a clarification of the Tender will be provided by the Contract Administrator to all Bidders by issuing an addendum.

B3.4 Responses to enquiries which, in the sole judgment of the Contract Administrator, do not require a correction to or a clarification of the Tender will be provided by the Contract Administrator only to the Bidder who made the enquiry.

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

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

### **B4. CONFIDENTIALITY**

B4.1 Information provided to a Bidder by the City or acquired by a Bidder by way of further enquiries or through investigation is confidential. Such information shall not be used or disclosed in any way without the prior written authorization of the Contract Administrator. The use and disclosure of the confidential information shall not apply to information which:

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

B4.2 The Bidder shall not make any statement of fact or opinion regarding any aspect of the Tender to the media or any member of the public without the prior written authorization of the Contract Administrator.

### **B5. ADDENDA**

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

- B5.2 The Contract Administrator will issue each addendum at least two (2) Business Days prior to the Submission Deadline, or provide at least two (2) Business Days by extending the Submission Deadline.
- B5.3 Addenda will be available on the MERX website at [www.merx.com](http://www.merx.com).
- B5.4 The Bidder is responsible for ensuring that they have received all addenda and is advised to check the MERX website for addenda regularly and shortly before the Submission Deadline, as may be amended by addendum.
- B5.5 The Bidder shall acknowledge receipt of each addendum in Paragraph 10 of Form A: Bid/Proposal. Failure to acknowledge receipt of an addendum may render a Bid non-responsive.
- B5.6 Notwithstanding B3, enquiries related to an Addendum may be directed to the Contract Administrator indicated in D5.

**B6. SUBSTITUTES**

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

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

## **B7. BID COMPONENTS**

- B7.1 The Bid shall consist of the following components:
- (a) Form A: Bid;
  - (b) Form B: Prices;
  - (c) Form G1: Bid Bond and Agreement to Bond.
- B7.2 All components of the Bid shall be fully completed or provided, and submitted by the Bidder no later than the Submission Deadline, with all required entries made clearly and completely.
- B7.3 The Bid shall be submitted electronically through MERX at [www.merx.com](http://www.merx.com).
- B7.3.1 Bids will **only** be accepted electronically through MERX.
- B7.4 Bidders are advised that inclusion of terms and conditions inconsistent with the Tender document, including the General Conditions, will be evaluated in accordance with B17.1(a).

## **B8. BID**

- B8.1 The Bidder shall complete Form A: Bid/Proposal, making all required entries.
- B8.2 Paragraph 2 of Form A: Bid/Proposal shall be completed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in their own name, their name shall be inserted;
  - (b) if the Bidder is a partnership, the full name of the partnership shall be inserted;
  - (c) if the Bidder is a corporation, the full name of the corporation shall be inserted;
  - (d) if the Bidder is carrying on business under a name other than their own, the business name and the name of every partner or corporation who is the owner of such business name shall be inserted.
- B8.2.1 If a Bid is submitted jointly by two or more persons, each and all such persons shall identify themselves in accordance with B8.2.
- B8.3 In Paragraph 3 of Form A: Bid/Proposal, the Bidder shall identify a contact person who is authorized to represent the Bidder for purposes of the Bid.
- B8.4 Paragraph 13 of Form A: Bid/Proposal shall be signed in accordance with the following requirements:
- (a) if the Bidder is a sole proprietor carrying on business in their own name, it shall be signed by the Bidder;
  - (b) if the Bidder is a partnership, it shall be signed by the partner or partners who have authority to sign for the partnership;
  - (c) if the Bidder is a corporation, it shall be signed by their duly authorized officer or officers;

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

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

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

## **B9. PRICES**

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

B9.1.1 Prices stated on Form B: Prices shall not include any costs which may be incurred by the Contractor with respect to any applicable funding agreement obligations as outlined in D38. Any such costs shall be determined in accordance with D38.

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

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

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

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

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

## **B10. DISCLOSURE**

B10.1 Various Persons provided information or services with respect to this Work. In the City's opinion, this relationship or association does not create a conflict of interest because of this full disclosure. Where applicable, additional material available as a result of contact with these Persons is listed below.

B10.2 The Persons are:

- (a) N/A
- (b) N/A

## **B11. CONFLICT OF INTEREST AND GOOD FAITH**

B11.1 Further to C3.2, Bidders, by responding to this Tender, declare that no Conflict of Interest currently exists, or is reasonably expected to exist in the future.

B11.2 Conflict of Interest means any situation or circumstance where a Bidder or employee of the Bidder proposed for the Work has:

- (a) other commitments;
- (b) relationships;
- (c) financial interests; or
- (d) involvement in ongoing litigation;

that could or would be seen to:

- (i) exercise an improper influence over the objective, unbiased and impartial exercise of the independent judgment of the City with respect to the evaluation of Bids or award of the Contract; or
- (ii) compromise, impair or be incompatible with the effective performance of a Bidder's obligations under the Contract;
- (e) has contractual or other obligations to the City that could or would be seen to have been compromised or impaired as a result of their participation in the Tender process or the Work; or
- (f) has knowledge of confidential information (other than confidential information disclosed by the City in the normal course of the Tender process) of strategic and/or material relevance to the Tender process or to the Work that is not available to other bidders and that could or would be seen to give that Bidder an unfair competitive advantage.

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

- (a) avoid any perceived, potential or actual Conflict of Interest in relation to the procurement process and the Work;
- (b) upon discovering any perceived, potential or actual Conflict of Interest at any time during the Tender process, promptly disclose a detailed description of the Conflict of Interest to the City in a written statement to the Contract Administrator; and
- (c) provide the City with the proposed means to avoid or mitigate, to the greatest extent practicable, any perceived, potential or actual Conflict of Interest and shall submit any additional information to the City that the City considers necessary to properly assess the perceived, potential or actual Conflict of Interest.

B11.4 Without limiting B11.3, the City may, in their sole discretion, waive any and all perceived, potential or actual Conflicts of Interest. The City's waiver may be based upon such terms and conditions as the City, in their sole discretion, requires to satisfy itself that the Conflict of Interest has been appropriately avoided or mitigated, including requiring the Bidder to put into place such policies, procedures, measures and other safeguards as may be required by and be acceptable to the City, in their sole discretion, to avoid or mitigate the impact of such Conflict of Interest.

B11.5 Without limiting B11.3, and in addition to all contractual or other rights or rights at law or in equity or legislation that may be available to the City, the City may, in their sole discretion:

- (a) disqualify a Bidder that fails to disclose a perceived, potential or actual Conflict of Interest of the Bidder or any of their employees proposed for the Work;
- (b) require the removal or replacement of any employees proposed for the Work that has a perceived, actual or potential Conflict of Interest that the City, in their sole discretion, determines cannot be avoided or mitigated;
- (c) disqualify a Bidder or employees proposed for the Work that fails to comply with any requirements prescribed by the City pursuant to B11.4 to avoid or mitigate a Conflict of Interest; and
- (d) disqualify a Bidder if the Bidder, or one of their employees proposed for the Work, has a perceived, potential or actual Conflict of Interest that, in the City's sole discretion, cannot be avoided or mitigated, or otherwise resolved.



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

**B12. QUALIFICATION**

- B12.1 The Bidder shall:

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

- B12.2 The Bidder and any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

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

- B12.3 The Bidder and/or any proposed Subcontractor (for the portion of the Work proposed to be subcontracted to them) shall:

- (a) have successfully carried out work similar in nature, scope and value to the Work; and
- (b) be fully capable of performing the Work required to be in strict accordance with the terms and provisions of the Contract; and
- (c) have a written workplace safety and health program if required pursuant to The Workplace Safety and Health Act (Manitoba);
- (d) have completed the Accessible Customer Service online training required by the Accessibility for Manitobans Act (AMA) (see B12.5 and D7)

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

- (a) Written confirmation of a safety and health certification meeting SAFE Work Manitoba's SAFE Work Certified Standard (e.g., COR™ and SECOR™) in the form of:
  - (i) a copy of their valid Manitoba COR certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Certificate of Recognition (COR) Program administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
  - (ii) a copy of their valid Manitoba SECOR™ certificate and Letter of Good Standing (or Manitoba equivalency) as issued under the Small Employer Certificate of Recognition Program (SECOR™) administered by the Construction Safety Association of Manitoba or by the Manitoba Heavy Construction Association's WORKSAFELY™ COR™ Program; or
- (b) a report or letter to that effect from an independent reviewer acceptable to the City. A list of acceptable reviewers and the review template are available at [https://www.winnipeg.ca/matmgt/Safety/safety\\_consultant.stm](https://www.winnipeg.ca/matmgt/Safety/safety_consultant.stm).

- B12.5 Further to B12.3(d), the Bidder acknowledges that they and all Subcontractors have obtained training required by the Accessibility for Manitobans Act (AMA) available at <https://accessibilitymb.ca/resources-events-and-training/online-training.html> for anyone that may have any interaction with the public on behalf of the City of Winnipeg.

- B12.6 The Bidder shall submit, within three (3) Business Days of a request by the Contract Administrator, proof satisfactory to the Contract Administrator of the qualifications of the Bidder and of any proposed Subcontractor.
- B12.7 The Bidder shall provide, on the request of the Contract Administrator, full access to any of the Bidder's equipment and facilities to confirm, to the Contract Administrator's satisfaction, that the Bidder's equipment and facilities are adequate to perform the Work.

### **B13. BID SECURITY**

- B13.1 The Bidder shall include in their Bid Submission bid security in the form of a digital bid bond, in the amount of at least ten percent (10%) of the Total Bid Price, and agreement to bond of a company registered to conduct the business of a surety in Manitoba, in Form G1: Bid Bond and Agreement to Bond, available at: <https://www.winnipeg.ca/media/4929/>.
- B13.2 Bid security shall be submitted in a digital format meeting the following criteria:
- (a) The version submitted by the Bidder must have valid digital signatures and seals;
  - (b) The version submitted by the Bidder must be verifiable by the City with respect to the totality and wholeness of the bond form, including: the content; all digital signatures and digital seals; with the surety company, or an approved verification service provider of the surety company.
  - (c) The version submitted must be viewable, printable and storable in standard electronic file formats compatible with the City, and in a single file. Allowable formats include pdf.
  - (d) The verification may be conducted by the City immediately or at any time during the life of the bond and at the discretion of the City with no requirement for passwords or fees.
  - (e) The results of the verification must provide a clear, immediate and printable indication of pass or fail regarding B13.2(a).
- B13.3 Bonds failing the verification process will not be considered to be valid and the bid shall be determined to be non-responsive in accordance with B17.1(a).
- B13.4 Bonds passing the verification process will be treated as original and authentic.
- B13.4.1 If the Bidder submits alternative bids, the bid security shall be in the amount of the specified percentage of the highest Total Bid Price submitted.
- B13.5 The bid security of the successful Bidder and the next two lowest evaluated responsive and responsible Bidders will be released by the City when a Contract for the Work has been duly formed with the successful Bidder and the contract securities are furnished as provided herein. The bid securities of all other Bidders will be released when a Contract is awarded.
- B13.6 The bid securities of all Bidders will be released by the City as soon as practicable following notification by the Contract Administrator to the Bidders that no award of Contract will be made pursuant to the Tender.

### **B14. OPENING OF BIDS AND RELEASE OF INFORMATION**

- B14.1 Bids will not be opened publicly.
- B14.2 Following the submission deadline, the names of the Bidders and their Total Bid Prices (unevaluated, and pending review and verification of conformance with requirements) will be available on the MERX website at [www.merx.com](http://www.merx.com).
- B14.3 After award of Contract, the name(s) of the successful Bidder(s) and their Contract amount(s) will be available on the MERX website at [www.merx.com](http://www.merx.com).

**B14.4** The Bidder is advised that any information contained in any Bid may be released if required by The Freedom of Information and Protection of Privacy Act (Manitoba), by other authorities having jurisdiction, or by law or by City policy or procedures (which may include access by members of City Council).

**B14.4.1** To the extent permitted, the City shall treat as confidential information, those aspects of a Bid Submission identified by the Bidder as such in accordance with and by reference to Part 2, Section 17 or Section 18 or Section 26 of The Freedom of Information and Protection of Privacy Act (Manitoba), as amended.

**B15. IRREVOCABLE BID**

**B15.1** The Bid(s) submitted by the Bidder shall be irrevocable for the time period specified in Paragraph 11 of Form A: Bid/Proposal.

**B15.2** The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly formed and the contract securities have been furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Paragraph 11 of Form A: Bid/Proposal.

**B16. WITHDRAWAL OF BIDS**

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

**B17. EVALUATION OF BIDS**

**B17.1** Award of the Contract shall be based on the following bid evaluation criteria:

- (a) compliance by the Bidder with the requirements of the Tender, or acceptable deviation therefrom (pass/fail);
- (b) qualifications of the Bidder and the Subcontractors, if any, pursuant to B12 (pass/fail);
- (c) Total Bid Price;
- (d) economic analysis of any approved alternative pursuant to B6.

**B17.2** Further to B17.1(a), the Award Authority may reject a Bid as being non-responsive if the Bid is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities. The Award Authority may reject all or any part of any Bid, or waive technical requirements or minor informalities or irregularities, if the interests of the City so require.

**B17.3** Further to B17.1(b), the Award Authority shall reject any Bid submitted by a Bidder who does not demonstrate, in their Bid or in other information required to be submitted, that they are qualified.

**B17.4** Further to B17.1(c), the Total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B: Prices adjusted, if necessary, as follows:

- (a) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder is within the budgetary provision for the Work, no adjustment will be made to the Total Bid Price; or
- (b) if the lowest evaluated responsive Bid submitted by a responsible and qualified Bidder exceeds the budgetary provision for the Work, the Total Bid Prices of all responsive Bids submitted by responsible and qualified Bidders will be adjusted by progressively deducting item(s) in the order listed below until a Total Bid Price within the budgetary provision is achieved.
  - (i) Section D - Westbound Grant Ave. – Chalfont Rd. to 50m West of Haney St.
  - (ii) Section C – Meridian Dr. – Haggart Ave. to Inksbrook Dr
  - (iii) Section B - Logan Ave. – Rail Crossing at Weston St. to Blake St

- (iv) Section A - Northbound Century St. – Ellice Ave. to 75m South of Saskatchewan Ave.

- B17.4.1 Further to B17.1(a), in the event that a unit price is not provided on Form B: Prices, the City may determine the unit price by dividing the Amount (extended price) by the approximate quantity, for the purposes of evaluation and payment.
- B17.4.2 Bidders are advised that the calculation indicated in B17.5 will prevail over the Total Bid Price entered in MERX.

**B18. AWARD OF CONTRACT**

- B18.1 The City will give notice of the award of the Contract or will give notice that no award will be made.
- B18.2 The City will have no obligation to award a Contract to a Bidder, even though one or all of the Bidders are determined to be qualified, and the Bids are determined to be responsive.
- B18.2.1 Without limiting the generality of B18.2, the City will have no obligation to award a Contract where:
- (a) the prices exceed the available City funds for the Work;
  - (b) the prices are materially in excess of the prices received for similar work in the past;
  - (c) the prices are materially in excess of the City's cost to perform the Work, or a significant portion thereof, with their own forces;
  - (d) only one Bid is received; or
  - (e) in the judgment of the Award Authority, the interests of the City would best be served by not awarding a Contract.
- B18.3 Where an award of Contract is made by the City, the award shall be made to the qualified Bidder submitting the lowest evaluated responsive Bid, in accordance with B17.
- B18.3.1 Following the award of contract, a Bidder will be provided with information related to the evaluation of their Bid upon written request to the Contract Administrator.

## PART C - GENERAL CONDITIONS

### C0. GENERAL CONDITIONS

- C0.1 The *General Conditions for Construction* (Revision 2020-01-31) are applicable to the Work of the Contract.
- C0.1.1 The *General Conditions for Construction* are available on the Information Connection page at The City of Winnipeg, Corporate Finance, Purchasing Division website at [http://www.winnipeg.ca/matmgt/gen\\_cond.stm](http://www.winnipeg.ca/matmgt/gen_cond.stm)
- C0.2 A reference in the Tender to a section, clause or subclause with the prefix “C” designates a section, clause or subclause in the *General Conditions for Construction*.

## PART D - SUPPLEMENTAL CONDITIONS

### GENERAL

#### D1. GENERAL CONDITIONS

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

#### D2. FORM OF CONTRACT DOCUMENTS

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

#### D3. SCOPE OF WORK

- D3.1 The Work to be done under the Contract shall consist of:
- (a) Concrete Pavement Preservation
    - (i) Meridian Drive - Inksbrook Drive to Haggart Avenue
    - (ii) Logan Avenue – Rail Crossing at Weston Street to Blake Street
  - (b) Diamond Grinding
    - (i) Logan Avenue - Rail Crossing at Weston Street to Blake Street
  - (c) Mill and Fill
    - (i) Northbound Century Street –Ellice Avenue to 75m South of Saskatchewan Avenue
    - (ii) Westbound Grant Avenue – Chalfont Road to 50m west of Haney Street
- D3.2 The major components of the Work are as follows:
- (a) Concrete Paving Preservation and Diamond Grinding
    - (i) Renewal of existing concrete joints through partial and full depth repairs
    - (ii) Renewal of existing sidewalks, curbs, splash strips and median slabs as required
    - (iii) Adjustment of existing catch basins, manholes and appurtenances as required
    - (iv) Diamond grinding
    - (v) Joint sealing of **all** joints within diamond grinding areas regardless of preexisting condition of sealant (incidental to Diamond Grinding)
    - (vi) Crack routing and sealing as required
    - (vii) Joint sealing all full depth repairs (incidental to Partial Slab Patch Repairs)
    - (viii) Boulevard restoration as required
  - (b) Asphalt Mill and Fill
    - (i) Asphalt pavement milling (average thickness 50mm)
    - (ii) Renewal of existing concrete joints through full depth concrete repairs
    - (iii) Partial depth asphalt patching of existing concrete joints
    - (iv) Placement of Pavement Repair Fabric
    - (v) Renewal of existing sidewalk, curbs, splash strips and median slabs as required
    - (vi) Placement of asphalt overlay (average thickness 60mm)
    - (vii) Reflective crack maintenance
    - (viii) Boulevard restoration as required
- D3.3 Turn lanes and median opening will be not be included in the work on westbound Grant Avenue.

D3.4 The funds available for this contract are \$1,454,250.00.

**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 Stantec Consulting, represented by:

Dylan Maurant, C.E.T.  
Transportation Project Manager  
Telephone No. 204-894-0592  
Email Address dylan.maurant@stantec.com

D5.2 At the pre-construction meeting, Dylan Maurant, C.E.T. 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. SUPPLIER CODE OF CONDUCT**

- D8.1 The Contractor has reviewed and understands the City's Supplier Code of Conduct. This document is located at: <https://www.winnipeg.ca/media/4891>
- D8.2 The Contractor agrees to comply with the Supplier Code of Conduct as it may be amended or replaced from time to time. The Contractor is responsible for periodically checking the above link for updates to the Supplier Code of Conduct. Contract signature on Form A: Bid/Proposal from the Contractor signifies agreement to the Supplier Code of Conduct which comes into effect once the Contract starts.
- D8.3 If there is a conflict between the Contract and the Supplier Code of Conduct – the Contract will prevail.

## **D9. UNFAIR LABOUR PRACTICES**

- D9.1 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](https://www.ilo.org/global/lang-en/index.htm) conventions as ratified by Canada.
- D9.2 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.
- D9.3 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.).
- D9.4 Failure to provide the evidence required under D9.3, may be determined to be an event of default in accordance with C18.
- D9.5 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.

- D9.5.1 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.
- D9.5.2 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 D9.5. The City may also hold back the amount of the Unfair Labour Practice Penalty from payment for any amount it owes the Contractor.
- D9.5.3 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.

#### **D10. FURNISHING OF DOCUMENTS**

- D10.1 Upon award of the Contract, the Contractor will be provided with 'issued for construction' Contract Documents electronically, including Drawings in PDF format only.

#### **SUBMISSIONS**

#### **D11. AUTHORITY TO CARRY ON BUSINESS**

- D11.1 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.

#### **D12. SAFE WORK PLAN**

- D12.1 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.
- D12.2 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>
- D12.3 Notwithstanding B12.4 at any time during the term of the Contract, the City may, at their sole discretion and acting reasonably, require an updated COR Certificate or Annual Letter of good Standing. A Contractor, who fails to provide a satisfactory COR Certificate or Annual Letter of good Standing, will not be permitted to continue to perform any Work.

#### **D13. INSURANCE**

- D13.1 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.

D13.2 Deductibles shall be borne by the Contractor.

D13.3 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.

D13.4 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.

#### **D14. CONTRACT SECURITY**

D14.1 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 amount of fifty percent (50%) of the Contract Price; and
- (b) labour and material payment bond of a company registered to conduct the business of a surety in Manitoba, in an amount equal to fifty percent (50%) of the Contract Price.

D14.1.1 Bonds are available at:

- (a) Performance Bond <https://www.winnipeg.ca/media/4928/>
  - (i) Performance Bond – Schedule A - Form of Notice  
<https://www.winnipeg.ca/media/4831/>
  - (ii) Performance Bond – Schedule B – Surety's Acknowledgement  
<https://www.winnipeg.ca/media/4832/>
  - (iii) Performance Bond – Schedule C – Surety's Position  
<https://www.winnipeg.ca/media/4833/>
- (b) Labour & Material Payment Bond <https://www.winnipeg.ca/media/4930/>
  - (i) L&M Bond – Schedule A – Notice of Claim  
<https://www.winnipeg.ca/media/4834/>
  - (ii) L&M Bond – Schedule B – Acknowledgement of a Notice  
<https://www.winnipeg.ca/media/4835/>
  - (iii) L&M Bond – Schedule C – Surety's Position  
<https://www.winnipeg.ca/media/4836/>

D14.1.2 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 D14.1(b).
- D14.1.3 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.
- D14.1.4 Digital bonds passing the verification process will be treated as original and authentic.
- D14.2 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.
- D14.3 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 D14.1(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.

## **D15. SUBCONTRACTOR LIST**

- D15.1 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.

## **D16. DETAILED WORK SCHEDULE**

- D16.1 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.
- D16.2 The detailed work schedule shall consist of the following:
  - (a) a critical path method (C.P.M.) schedule for the Work;
  - (b) a Gantt chart for the Work based on the C.P.M. schedule; andall acceptable to the Contract Administrator.
- D16.3 Further to D16.2(a), the C.P.M. schedule shall clearly identify the start and completion dates of all of the following activities/tasks making up the Work as well as showing those activities/tasks on the critical path:
- D16.4 Further to D16.2(b), the Gantt chart shall show the time on a weekly basis, required to carry out the Work of each trade, or specification division. The time shall be on the horizontal axis, and the type of trade shall be on the vertical axis.

**D17. REQUIREMENTS FOR SITE ACCESSIBILITY PLAN**

- D17.1 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.
- D17.2 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.
- D17.3 The Accessibility Plan may also include figures, sketches, or drawings to demonstrate the proposed plan.
- D17.4 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
- D17.5 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.
- D17.6 Any changes to the Accessibility Plan must be approved by the Contract Administrator.
- D17.7 Upon request from the Contract Administrator, the Contractor shall provide records demonstrating that the site has been maintained.
- D17.8 Deficiencies as a direct result of actions by the Contractor that are not immediately corrected and/or failure to produce records that demonstrate that the site was maintained in compliance with the Accessibility Plan may result in a pay adjustment via the monthly Progress Payment. The rate of pay adjustment will be as per the following schedule:
- (a) First Offence – A warning will be issued and documented in the weekly or bi-weekly site meeting.
  - (b) Second Offence – A field instruction to immediately correct the site will be issued by the Contract Administrator.
  - (c) Third and subsequent Offences – A pay reduction will be issued in the amount of \$250.00 per instance and per day.

## **SCHEDULE OF WORK**

### **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 D11;
    - (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 D12;
    - (v) evidence of the insurance specified in D13;
    - (vi) the contract security specified in D14;
    - (vii) the subcontractor list specified in D15;
    - (viii) the detailed work schedule specified in D16;
    - (ix) the Requirements for Site Accessibility Plan specified in D17; and
    - (x) the direct deposit application form specified in D32
  - (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 commence the Work on the Site within seven (7) Working Days of receipt of the award letter.

### **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.

### **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.
- D20.2 The following work hour restrictions shall also apply:
- (a) Diamond Grinding on Logan Avenue shall be completed between 0700 and 2000;

## **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 –Install permanent signage following the completion of construction. Fabricate, supply and place Wayfinding Signage as required. It is expected that the Contractor will coordinate with Traffic Services as required.
  - (b) City of Winnipeg Traffic Management – Develop wording for Wayfinding Signage. Approve all lane closure requests and detour routes.
  - (c) City of Winnipeg Traffic Signals – Traffic signal loops may require decommissioning and reinstallation.
  - (d) Winnipeg Transit – The Contractor will be required to coordinate with Winnipeg Transit for stop closures and/or temporary relocations in order to maintain service and minimize disruptions.
  - (e) Manitoba Hydro – The Contractor will be required to coordinate all utility watches with Manitoba Hydro as required.
  - (f) Various Utilities – The Contractor will be required to coordinate all utility watches with the various utility companies as required.
  - (g) Railway Authorities – The Contractor is expected to coordinate flagging and track protection with affected railway authorities as required. The Contractor will be required to follow the rail safety procedures of the respective railway authority.
    - (i) Logan Avenue – CPKC (at east limit)
- 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 D16 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 be as follows:
- D22.1.1 Construction activity is to be limited to a single lane of the roadway at a time unless otherwise noted. No construction shall commence on the subsequent lane until all work is completed on the lane under construction or as otherwise permitted by the Contract Administrator.
- D22.1.2 It is expected that the Contractor will grow the Work Zone as construction progresses in order to minimize traffic disruptions.
- D22.1.3 Initial planing operations are to be limited to the gutter lane of the roadway. Planing of the subsequent lanes of the roadway shall not commence until the Contract Administrator has approved the opening of the previous lanes to traffic following placement of the first lift of asphalt.
- (a) Traffic will **not** be permitted to be maintained on a milled asphalt surface.
- D22.1.4 Asphalt drop offs will not be permitted to remain overnight.
- D22.1.5 Construction activity, including Diamond Grinding, will be limited to 3 sites at any one time.

- D22.1.6 Diamond Grinding on Logan Avenue to be completed between June 30, 2025 and August 29, 2025.

**D23. CRITICAL STAGES**

- D23.1 The Contractor shall achieve critical stages of the Work in accordance with the following requirements:
- (a) Critical Stage 1 – Diamond Grinding to be completed on Logan Avenue between June 30, 2025 and August 29, 2025.
- D23.2 When the Contractor considers the Work associated with Critical Stage1 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 Critical Stage 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 Critical Stage 1 has been achieved.

**D24. SUBSTANTIAL PERFORMANCE**

- D24.1 The Contractor shall achieve Substantial Performance within Fifty (50) 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 Fifty Five (55) 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 1 – One Thousand dollars (\$1000);
  - (b) Substantial Performance – three thousand dollars (\$3000);

(c) Total Performance – one thousand dollars (\$1500).

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) Reflective Crack Maintenance as specified in CW 3250-R7;

(b) Sod Maintenance as specified in CW 3510-R10.

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. These meetings shall be attended by a minimum of one representative of the Contract Administrator, one representative of the City and one representative of the Contractor. Each representative shall be a responsible person capable of expressing the position of the Contract Administrator, the City and the Contractor respectively on any matter discussed at the meeting including the Work schedule and the need to make any revisions to the Work schedule. The progress of the Work will be reviewed at each of these meetings.
- 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 B12.4, the Contractor/Subcontractor must, throughout the term of the Contract, have a Workplace Safety and Health Program meeting the requirements of The Workplace Safety and Health Act (Manitoba). At any time during the term of the Contract, the City may, at their sole discretion and acting reasonably, require updated proof of compliance, as set out in B12.4.

## **INVOICES & MEASUREMENT AND PAYMENT**

### **D32. MEASUREMENT AND PAYMENT**

- D32.1 C12.2 is deleted and replaced with the following:
- C12.2 The amounts to be paid by the City to the Contractor shall be as set out in the Payment Certification. In the event the Payment Certification does not align with the Contractor's Proper Invoice and payment by the City to the Contractor is not made, or not going to be made, for the invoiced amount within 28 Calendar Days of receipt of the Proper Invoice, the City will issue a notice of non-payment to the Contractor in accordance with the BLA.
- C12.2.1 For unit price Contracts, such sums shall be determined by the Contract Administrator upon the basis of the unit prices for the various classes of the Work stated on Form B: Prices. The total amount to be paid to the Contractor for the Work will be the amount arrived at by measuring the amount of each class of the Work listed on Form B: Prices and performed in accordance with the Contract, and pricing the same, in accordance with the unit prices stated thereon.
- C12.2.2 For lump sum Contracts, such sums shall be determined by the Contract Administrator upon the basis of the lump sum price stated on Form B: Prices, if applicable, but in any event the lump sum price broken down into the percentage completed for each portion of the Work, commonly referred to as detailed prices.
- D32.2 C12.7 to C12.15 are deleted and replaced with the following:
- C12.7 By the seventh (7) Calendar Day after the end of each month, the Contract Administrator shall issue to the Contractor a progress estimate indicating its opinion of the quantity and value of Work performed during the previous month. The Contractor

may use the progress estimate to form part of its Proper Invoice as support of the type and quantity of Work performed. In the event the Contractor chooses to produce its own documentation of the type and quantity of Work performed to form part of its Proper Invoice, the content shall be in accordance with C12.2 and the format of such documentation should follow that of a typical progress estimate, including all evidence and records of measurement that the Contract Administrator would require to certify payment. In either event the Contractor shall include such supporting documentation as part of its invoice.

- C12.8 If the Contractor agrees with the progress estimate provided by the Contract Administrator it should indicate that on its Proper Invoice. If the Contractor does not agree with the progress estimate provided by the Contract Administrator it should attempt to reconcile the discrepancy, which could result in a revised progress estimate to be provided by the Contract Administrator or a revised invoice by the Contractor, so that the progress estimate and the Proper Invoice align. In the event that the discrepancy is not reconciled then the Contractor should detail the items within the progress estimate that it disagrees with in order that the value on the Proper Invoice aligns with and is supported by the progress estimate with noted discrepancies.
- C12.9 Any payment made by the City to the Contractor on account of a Proper Invoice shall be less any holdback required to be made by The Builders' Liens Act, and such holdbacks or other amounts which the City is entitled to withhold pursuant to the Contract.
- C12.10 If in the Contractor's opinion the Work performed during the previous month is minimal or does not warrant an invoice, the Contractor is permitted to not submit an invoice on the condition that the Contractor advises the Contractor Administrator in writing.
- C12.11 Unless agreed to by the Contract Administrator, in writing, on an exception basis, the Contractor shall not submit invoices more frequently than monthly.
- C12.12 Any reference to payment submittals or payment processes in the NMS Sections of the Contract are deleted and replaced with the payment submittals and payment processes within Section C12 of the General Conditions, as amended by the Supplemental Conditions.

## **FINAL PAYMENT**

- C12.13 The Contractor shall indicate on its invoice if it is the final invoice for Work performed under the Contract. Payment Certification, in response to receipt of the final Proper Invoice by the Contractor, shall be subject to the following conditions:
- (a) issuance by the Contract Administrator of a certificate of Total Performance;
  - (b) receipt by the City of a certificate from the Workers Compensation Board stating that full payment has been made to the Board with respect to all assessments owing.
- C12.14 Payment on account of the holdback made by the City pursuant to The Builders' Liens Act, shall be paid to the Contractor when the time for filing liens or trust claims has elapsed, unless the City is in receipt of a lien or trust claim.
- C12.15 Neither the issuance of a certificate of Total Performance nor the payment of the final Proper Invoice shall relieve the Contractor from their responsibilities either under C13 or as a result of any breach of the Contract by the Contractor including, but not limited to, defective or deficient Work appearing after Total Performance, nor shall it conclude or prejudice any of the powers of the Contract Administrator or the Chief Administrative Officer hereunder.
- C12.16 Subject to C12.17, acceptance by the Contractor of payment on account of the final Proper Invoice shall constitute a waiver and release by them of all claims against the

City whether for payment for Work done, damages or otherwise arising out of the Contract.

- C12.17 If the Contractor disputes a Payment Certification related to a notice of non-payment by the City to the Contractor in accordance with the BLA, the Contractor may appeal the determination of the Contract Administrator to the Chief Administrative Officer as provided for in C21. If prior to the appeal being concluded, the Contractor gives a notice of adjudication to the City pursuant to the BLA, the appeal process will be discontinued.

## INVOICES

D32.3 Further to C12, the Contractor:

- (a) shall submit invoices for Work performed during the previous calendar month in accordance with the instruction on the City's website at:  
<https://www.winnipeg.ca/finance/corporate-accounts-payable.stm>; and
- (b) should copy the Contract Administrator on submission of its invoice.

## D33. PAYMENT

D33.1 Further to C12, the City shall make payments to the Contractor by direct deposit to the Contractor's banking institution, and by no other means. Payments will not be made until the Contractor has made satisfactory direct deposit arrangements with the City. Direct deposit application forms are at [https://winnipeg.ca/finance/files/Direct\\_Deposit\\_Form.pdf](https://winnipeg.ca/finance/files/Direct_Deposit_Form.pdf).

D33.2 Further to E3, no payment will be made for Cash Allowances other than as set out in E3.4.

## D34. FUEL PRICE ADJUSTMENT

D34.1 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.

D34.1.1 Eligible Work will be determined in accordance with D34.5.

D34.1.2 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.

D34.1.3 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.

D34.1.4 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.

D34.2 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.

- D34.3 The fuel escalation or de-escalation adjustment will not be applied if the CFI is within  $\pm 15\%$  of the BFI.
- D34.4 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.
- D34.5 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;

## **WARRANTY**

### **D35. WARRANTY**

- D35.1 Notwithstanding C13.2, the warranty period shall begin on the date of Substantial Performance and shall expire one (1) year thereafter unless extended pursuant to C13.2.1 or C13.2.2, in which case it shall expire when provided for thereunder.
- D35.2 Notwithstanding C13.2 or D35.1, the Contract Administrator may permit the warranty period for a portion or portions of the Work to begin prior to the date of Substantial Performance if:
- (a) a portion of the Work cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the Contractor but that portion does not prevent the balance of the Work from being put to its intended use.
- D35.2.1 In such case the date specified by the Contract Administrator for the warranty period to begin shall be substituted for the date specified in C13.2 for the warranty period to begin.

## **DISPUTE RESOLUTION**

### **D36. DISPUTE RESOLUTION**

- D36.1 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 D36.
- D36.2 The entire text of C21.4 is deleted, and amended to read: "Intentionally Deleted"
- D36.3 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.
- D36.4 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.

- D36.4.1 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.
- D36.4.2 As these negotiations are not an adjudicative hearing, neither party may have legal counsel present during the negotiations.
- D36.4.3 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.
- D36.4.4 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 D36.4.3, 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**

### **D37. INDEMNITY**

- D37.1 Indemnity shall be as stated in C17.
- D37.2 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.
- D37.3 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

#### D38. FUNDING AND/OR CONTRIBUTION AGREEMENT OBLIGATIONS

- D38.1 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.
- D38.2 Further to D38.1, in the event that the obligations in D38 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.
- D38.3 For the purposes of D38:
- (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.
- D38.4 Modified Insurance Requirements
- D38.4.1 If not already required under the insurance requirements identified in D13, 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.
- D38.4.2 If not already required under the insurance requirements identified in D13, 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.
- D38.4.3 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.
- D38.4.4 Further to D13.3, 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.
- D38.4.5 All policies must be taken out with insurers licensed to carry on business in the Province of Manitoba.
- D38.5 Indemnification By Contractor
- D38.5.1 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.

- D38.5.2 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.

#### D38.6 Records Retention and Audits

- D38.6.1 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.
- D38.6.2 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 D38.6.1 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.

#### D38.7 Other Obligations

- D38.7.1 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.
- D38.7.2 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.
- D38.7.3 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.
- D38.7.4 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.
- D38.7.5 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.

- D38.7.6 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.

**D39. ADJUSTMENTS FOR CHANGES IN LAW, TAXES, OR TARIFFS**

- D39.1 Further to C12.4 and subject to C6.13, the Contract Price shall be adjusted if any change in a law or tax imposed under the Excise Act, the Excise Tax Act, the Customs Act, the Customs Tariff, The Mining Tax Act (Manitoba), or The Retail Sales Tax Act (Manitoba), by an act of the Congress of the United States of America, or by Executive Order by the President of the United States under the International Emergency Economic Powers Act of the United States of America or similar legislation:
- D39.2 (a) occurs after the Submission Deadline;
- D39.3 (b) applies to Material; and
- D39.4 (c) affects the cost of that Material to the Contractor.
- D39.5 Further to C12.5, if a change referred to in C12.4 occurs, the Contract Price shall be increased or decreased by an amount equal to the amount that is established, by an examination of the relevant records of the Contractor, to be the increase or decrease in the cost incurred that is directly attributable to that change, and which the Contractor has proven to the Contract Administrator represents the minimum amount of increase necessary in order to obtain necessary Material or Plant. For the avoidance of doubt, the Contractor shall be required to provide satisfactory proof that it has investigated alternative options for obtaining equivalent Material or Plant and reducing or eliminating the increase in Contract Price, up to and including entering into purchase agreements with vendors located in other jurisdictions, in order for Contractor to be able to avail itself of the increase in Contract Price permitted.



(See D15)

## 2025 STREETS MAINTENANCE PRESERVATION PROGRAM

[illegible]

## 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 B6. In every instance where a brand name or design specification is used, the City will also consider approved equals and/or approved alternatives in accordance with B6.
- E1.4 The following are applicable to the Work:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
P-3595-01	TITLE PAGE AND DRAWING LIST	A1
P-3595-02	CENTURY STREET – NORTHBOUND – ELLICE AVENUE TO STA. 0+730	A1
P3595-03	CENTURY STREET – NORTHBOUND – STA. 0+730 TO SASKATCHEWAN AVENUE	A1
P-3595-04	LOGAN AVENUE – EAST AND WESTBOUND– BLAKE STREET TO WESTON STREET	A1
P-3595-05	MERIDIAN DRIVE – NORTH AND SOUTH BOUND – HAGGART AVENUE TO INKSBROOK DRIVE	A1
P-3595-06	GRANT AVENUE – WESTBOUND – HANEY STREET TO STA. 0+810	A1
P-3595-07	GRANT AVENUE – WESTBOUND – STA. 0+810 TO CHALFONT ROAD	A1

#### E2. MOBILIZATION AND DEMOBILIZATION PAYMENT

##### DESCRIPTION

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

## SCOPE OF WORK

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

## MEASUREMENT AND PAYMENT

- E2.6 The lump-sum price for the Mobilization and Demobilization bid item shall not exceed five percent (5.00%) of the total bid price for the Contract.
- E2.6.1 Further to B9, B17, C12 and E2.6, should the lump sum price exceed 5% of the Total Bid Price the lump sum price will be reduced to 5% of the Total Bid Price, the Total Bid Price will be determined using the reduced lump sum price and payment will be based on the reduced lump sum price.
- E2.7 Payment for Mobilization:
- (a) 60% of the lump-sum price will be paid to the contractor for Mobilization on the first Progress Estimate for the Contract.
- E2.8 Payment for Demobilization:
- (a) The remaining 40% of the lump-sum price will be paid upon:
    - (i) Restoration of the site and/or sites to the satisfaction of the Contract Administrator;
    - (ii) Distribution of the Declaration of Total Performance.
- E2.9 Pay Reduction for Accessibility Plan
- (a) The Demobilization payment will be reduced by the number of pay adjustments incurred in accordance with D17 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. CASH ALLOWANCE FOR ADDITIONAL WORK**

- E3.1 Additional Work may be necessitated due to unforeseen circumstances that may arise during the course of the project due to:
- (a) Additions to the scope of Work by the Contract Administrator, beyond that defined herein.
- E3.2 A cash allowance has been included on Form B: Prices.
- E3.3 The City reserves the right to delete any or all of the Cash Allowance from the Contract if the Work intended to be covered by the Cash Allowance is not required, or if the Works intended are found to be more extensive than the provisional Cash Allowance.
- E3.4 Cost of additional work shall be evaluated by the methods outlined in C7.4, and a Change Order prepared by the Contract Administrator. Cost of the Change Order will be paid on the Progress Estimate and deducted from the Cash Allowance. If the valuation of the authorized work exceeds the Value of the Cash Allowance, the Contract Value will be adjusted by the shortfall.
- E3.5 Additional services and/or Work will not be initiated for:
- (a) Reasons of lack of performance or errors in execution.
  - (b) Scheduling changes initiated by the City, where at least 24 hours' notice is given prior to the Contractors schedule time to be on Site.
- E3.6 Should it be determined that additional material or services are required, the Contract Administrator shall approve the Work, prior to commencement of the additional Work.
- E3.7 Material Mark-Up Factors:
- (a) The base cost is to be the wholesale cost of the material, regardless of the Contractor or Subcontractor supplying the material.
  - (b) In general, the party (Contractor or Subcontractor) supplying the material is the party that purchases the material from a supplier who does not perform any work on Site, unless otherwise determined by the Contract Administrator.
  - (c) Where the Contractor is supplying the material, the mark-up on the material is limited to fifteen percent (15%).
  - (d) Where the Contractor's immediate Subcontractor is supplying the material the total mark-up on the material including all Subcontractors and the Contractor is limited to twenty-five percent (25%)
    - (i) The Subcontractor's mark-up on the material is limited to fifteen percent (15%);
    - (ii) The Contractor's mark-up on the material is limited to ten percent (10%).
  - (e) A Third-Level Subcontractor is a Subcontractor of a Subcontractor of the Contractor.
    - (i) No Third-Level Subcontractors on this project are approved for additional mark-up.
    - (ii) In the event that a Third-Level Subcontractor is utilized, that is not approved for additional mark-up, the Contractor is responsible for coordinating the split of the maximum approved mark-up between the Contractor and Subcontractors.

### **E4. PROTECTION OF EXISTING TREES**

- E4.1 The Contractor shall take the following precautionary steps to prevent damage from construction activities to existing boulevard trees within the limits of the construction area:
- (a) The Contractor shall not stockpile materials and soil or park vehicles and equipment on boulevards within 2 metres of trees.
  - (b) Trees identified to be at risk by the Contract Administrator are to be strapped with 25 x 100 x 2400mm wood planks, or suitably protected as approved by the Contract Administrator.

- (c) Excavation shall be performed in a manner that minimizes damage to the existing root systems. Where possible, excavation shall be carried out such that the edge of the excavation shall be a minimum of 1.5 times the diameter (measured in inches), with the outcome read in feet, from the closest edge of the trunk. Where roots must be cut to facilitate excavation, they shall be pruned neatly at the face of excavation.
- (d) Operation of equipment within the dripline of the trees shall be kept to the minimum required to perform the work required. Equipment shall not be parked, repaired, refuelled; construction materials shall not be stored, and earth materials shall not be stockpiled within the driplines of trees. The dripline of a tree shall be considered to be the ground surface directly beneath the tips of its outermost branches. The Contractor shall ensure that the operations do not cause flooding or sediment deposition on areas where trees are located.
- (e) Work on-site shall be carried out in such a manner so as to minimize damage to existing tree branches. Where damage to branches does occur, they shall be neatly pruned.

E4.2 All damage to existing trees caused by the Contractor's activities shall be repaired to the requirements and satisfaction of the Contract Administrator and the City Forester or their designate.

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

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

## **E5. TRAFFIC CONTROL**

E5.1 Further to 3.6, 3.7 and 3.8 of CW 1130:

- (a) Where directed by the Contract Administrator, the Contractor shall construct and maintain temporary asphalt ramps to alleviate vertical pavement obstructions such as manholes and planing drop-offs to the satisfaction of the Contract Administrator. Payment shall be in accordance with CW3410.
- (b) In accordance with the Manual of Temporary Traffic Control on City Streets (MTTC), the Contractor ("Construction Agency" in the Manual) shall be responsible for placing, maintaining and removing the appropriate temporary traffic control devices as specified by the MTTC, the Contract Drawings, Staging Plans and Traffic Management Plans or by the Traffic Management Branch of the City of Winnipeg Public Works Department. The Contractor shall bear all costs associated with the placement of temporary traffic control devices by their own forces or Subcontractor.
- (c) In addition, the Contractor shall be responsible for **supplying**, removing, placing and maintaining all regulatory signing including but not limited to:
  - (i) Parking restrictions;
  - (ii) Stopping restrictions;
  - (iii) Turn restrictions;
  - (iv) Diamond lane removal;
  - (v) Full or directional closures on a Regional Street;
  - (vi) Traffic routed across a median;
  - (vii) Full or directional closure of a non-regional street where there is a requirement for regulatory signs (turn restrictions, bus stop relocations, etc.) to implement the closure.
- (d) The Contractor shall remove and stockpile any regulatory signage not required during construction such as, but not limited to, parking restrictions, turn restrictions and loading restrictions.

- E5.2 Upon request from the Contract Administrator, the Contractor shall provide records demonstrating that the site has been maintained.
- E5.3 Further to E5.1(c) and E5.1(d) the Contractor shall make arrangements with the Traffic Services Branch of the City of Winnipeg to reinstall the permanent regulatory signs after the Contract Work is complete. The Contractor shall make arrangements to drop off the stockpiled materials to Traffic Services at 495 Archibald Street.
- E5.4 Any changes to the approved Traffic Management Plan must be submitted to the Contract Administrator a minimum of five (5) Working Days prior to the required change for approval.
- E5.5 If the Contract Administrator determines that the Contractor is not performing Traffic Control in accordance with this specification, Traffic Services may be engaged to perform the Traffic Control. In this event the Contractor shall bear costs charged to the project by the Traffic Services Branch of the City of Winnipeg in connection with the required Works.

## **E6. TRAFFIC MANAGEMENT**

- E6.1 Further to 3.7 of CW 1130:
- (a) Single lane closures on intersecting and/or adjoining Regional Streets shall only be permitted during non-peak periods when required for construction activities when approved by the Traffic Management Branch. Storage/parking of materials, equipment or vehicles is not permitted on Regional Streets at any time unless approved by the Contract Administrator, in consultation with the Traffic Management Branch.
- E6.2 Intersecting local streets, median openings and private approach accesses shall be maintained at all times unless joint/slab repairs or planing/paving operations require temporary closure. Temporary closures are to be staggered such that consecutive intersections are not closed at the same time. Traffic on intersecting regional/collector streets shall be maintained at all times as stated in E.6.1 unless planing/paving operations require temporary complete closures. Temporary complete closures shall be no longer than 15 minutes during asphalt planing/paving operations and Diamond Grinding and shall be completed during off peak hours and will require flagpersons onsite to direct and manage traffic.
- E6.3 When no work is being performed on a portion of the site more than three hundred and fifty (350) m in length, the Contractor shall maintain two (2) lanes in the area where no Work is being performed. Depending on what tasks are being performed, the Contractor shall manage traffic around their crews with a moving or growing protected Work Zone as to minimize the length of the closure to the best of their ability.
- E6.4 The Contractor is to provide a minimum Ten (10) Working Day notice prior to the anticipated start of construction on any street requiring a Designated Construction Zone, directional closure or the "Closure of Two Adjacent Lanes of a Four Lane Undivided Street" (Figure 5 & 6 of the MTTC).
- E6.5 For "Long Term Closures of Half of a Non-Regional Street" (Figure 28 of the MTTC), Work Areas shall not exceed 75m unless previously approved by the City of Winnipeg Traffic Management Branch, Traffic Services and the Contract Administrator. Private approaches and/or side streets should not be included within the work zone limits.
- E6.6 Where left turn lanes exist, an additional lane to accommodate the left turn storage lane shall be maintained at all times.
- E6.7 Location Specific Requirements
- E6.7.1 Northbound Century Street
- (a) A DCZ, with a speed reduction to 50km/h, will be utilized for this project site.
    - (i) The Contractor shall provide a minimum of ten (10) Working Day notice prior to mobilizing to site.

- (ii) The Contractor shall provide a DCZ drawing a minimum of (10) Working Day notice prior to mobilizing to site.
- (b) Work is to be completed one lane at a time.
- (c) A second lane may only be closed outside of AM and PM peak hours (0700-0900 and 1500-1800).
  - (i) If absolutely required to accommodate the work, a second lane may be closed during the AM peak period only as approved by the Contract Administrator.
  - (ii) During Asphalt Paving a second lane will be permitted to be closed during both peak periods as approved by the Contract Administrator.
  - (iii) The Contractor will be limited to three (3) non-consecutive days where a second lane may be closed during both peak periods.
- (d) Long term closures of lanes on intersecting regional streets may be required to accommodate concrete repairs within the intersections.

E6.7.2 Logan Avenue

- (a) It is expected that the Contractor will utilize a "Closure of Two Adjacent Lanes of a Four Lane Undivided Street" (Figure 5 & 6 of the MTTC).
- (b) Coordination with City of Winnipeg Traffic Signals may be required.
- (c) Coordination with Winnipeg Transit will be required.
- (d) Staging will be required at the east rail crossing with flagpersons.
- (e) The Contractor will be responsible for coordinating track protection and flagging during construction as required.

E6.7.3 Meridian Drive

- (a) It is expected that the Contractor will utilize a directional closure between Inksbrook Drive and Haggart Avenue.
- (b) It is expected that the Contractor will utilize a "Long Term Closures of Half of a Non-Regional Street" (Figure 28 of the MTTC) may be utilized for Work north of Haggart Avenue.
- (c) Any closure of commercial approaches is to be coordinated with the affected business at least five (5) days advance of the work.
- (d) Winnipeg transit will be implementing a new route through the project limits which will become active after June 28, 2025.

E6.7.4 Westbound Grant Avenue

- (a) Work is to be completed one lane at a time.
- (b) Access to existing turn lane and median openings is to be maintained.
- (c) Winnipeg Transit is expecting to implement a new Route and Stop plan by June 28, 2025. This will result in a decrease in stop locations but an increase in bus frequencies within the project limits. Coordination will be required with Transit to adequately stage transit stop within the project limits.

E6.8 The Contractor shall provide and maintain all Traffic Control devices as per the requirements of the City of Winnipeg Manual of Temporary Traffic Control.

E6.9 The Contractor may propose alternative traffic control configurations. Acceptance of these alternatives will be at the discretion of the City of Winnipeg Traffic Management Branch, Traffic Services and the Contract Administrator.

E6.9.1 Flag persons will be necessary to maintain the flow of traffic during certain work operations.

E6.9.2 Should the Contractor be unable to maintain pedestrian or vehicular access to a residence or business, they shall review the planned disruption with the business or residence and

the Contract Administrator, and take reasonable measures to minimize the impact. The Contractor shall provide a minimum of 24 hours notification to the affected residence or business and the Contract Administrator, prior to disruption of access.

E6.9.3 Pedestrian access must be maintained at all times. One pedestrian crossing in the east-west and north-south direction must be maintained at each intersection at all times. wooden ramps will be installed at pedestrian crossings as required by the Contract Administrator.

E6.9.4 Ambulance/emergency vehicle access must be maintained at all times.

## **E7. PEDESTRIAN SAFETY**

E7.1 During the project, a temporary snow fence shall be installed where open excavations are adjacent to pedestrian walkways. The Contractor shall be responsible for maintaining the snow fence in a proper working condition. No measurement for payment shall be made for this work.

## **E8. WATER OBTAINED FROM THE CITY**

E8.1 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.

## **E9. SURFACE RESTORATIONS**

E9.1 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.

## **E10. SUPPLY AND INSTALLATION OF PAVEMENT REPAIR FABRIC**

### **DESCRIPTION**

E10.1 General

E10.1.1 This specification covers the supply and installation of pavement repair fabric.

E10.1.2 Referenced Standard Construction

(a) CW 3130 – Supply and Installation of Geotextile Fabrics.

### **MATERIALS**

E10.2 Storage and Handling

E10.2.1 Store and handle material in accordance with Section 2 of CW 3130.

E10.3 Pavement Repair Fabric

E10.3.1 Pavement repair fabric will be Glas Grid Road Reinforcement Mesh - Style 8501.

### **CONSTRUCTION METHODS**

E10.4 General

E10.4.1 Install pavement repair fabric at various locations as directed by the Contract Administrator.

E10.4.2 The extent of the placement limits and quantities required will be determined by the Contract Administrator in the field and provided 48 hours prior to the placement of asphalt.



- E10.4.3 Milling depths, in areas to receive pavement repair fabric, shall be sufficient to accommodate a 50mm asphalt scratch coat in addition to the top lift of asphalt.
- E10.4.4 A 50mm asphalt scratch coat shall be placed and allowed sufficient time to cool prior to placement of the pavement repair fabric as per manufacturer's specifications.
- E10.4.5 Proceed with installation upon completion and acceptance of the asphalt scratch coat.
- E10.4.6 Install fabric in accordance with the manufacturer's specifications and recommendations.
- E10.4.7 Only construction equipment required to place the final asphalt surface course will be allowed to travel on the exposed fabric.
- E10.4.8 Replace damaged or improperly placed fabric.
- E10.4.9 Ensure temperature of the asphalt material does not exceed the melting point of the fabric.
- E10.4.10 Installed pavement repair fabric shall be accepted prior to the placement of subsequent lifts of asphalt.

#### MEASUREMENT AND PAYMENT

- E10.5 Pavement Repair Fabric
  - E10.5.1 The supply and installation of the pavement repair fabric will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Pavement Repair Fabric". The area to be paid for will be the total number of square metres of pavement repair fabric supplied and installed in accordance with this specification, accepted and measured by the Contract Administrator.

### E11. PARTIAL DEPTH PATCHING OF EXISTING JOINTS

#### DESCRIPTION

- E11.1 General
  - E11.1.1 This specification covers the Partial Depth Patching of existing concrete pavement joints.
- E11.2 Referenced Standard Construction Specifications
  - (a) CW 3230 – Full-Depth Patching of Existing Slabs and Joints
  - (b) CW 3410 – Asphalt Concrete Pavement Works

#### MATERIALS

- E11.3 Asphalt Materials
  - E11.3.1 Asphalt material will be Type 1A supplied in accordance with Sections 5 and 6 of CW 3410.
- E11.4 Tack Coat
  - E11.4.1 Tack Coat will be undiluted SS-1 emulsified asphalt.

#### CONSTRUCTION METHODS

- E11.5 Planing of Joints
  - E11.5.1 Plane existing joints designated by the Contract Administrator to a minimum depth of 50 mm and a maximum of depth 90 mm to remove ravelled or deteriorated concrete. Width of joint to be planed will vary with depth.
  - E11.5.2 Should the depth of joint deterioration exceed the maximum indicated, as determined by the Contract Administrator, the entire joint shall be renewed and paid for in accordance

with CW 3230 as a full depth joint repair. Planing completed shall be paid for in accordance with Section E11.7 of this specification.

E11.5.3 Dispose of material in accordance with Section 3.4 of CW 1130.

**E11.6 Placement of Asphalt Material**

E11.6.1 Prior to placement of asphalt material, the planed joint shall be swept or blow clean of any loose material.

E11.6.2 Apply Tack Coat uniformly on the entire surface of the planed joint. The application rate shall not exceed 0.23 litres per square metre. The planed joint shall be dry prior to applying the tack coat.

E11.6.3 Place and compact asphalt material in accordance with Section 9.3 of CW 3410 to the satisfaction of the Contract Administrator. The finished elevation of the patch shall be flush with surrounding pavement surface.

E11.6.4 Compact the asphalt material to an average 95% of the 75 blow Marshall Density of the paving mixture with no individual test being less than 90 %.

E11.6.5 Ensure that no traffic is allowed to travel over the patched area until the asphalt has cooled to atmospheric temperature.

**MEASUREMENT AND PAYMENT**

**E11.7 Partial Depth Planing of Existing Joints**

E11.7.1 Partial Depth Planing of Existing Joints will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Partial Depth Planing of Existing Joints". The area to be paid for will be the total number of square metres of joints planed in accordance with this specification, accepted and measured by the Contract Administrator.

**E11.8 Asphalt Patching of Partial Depth Joints**

E11.8.1 Asphalt Patching of Partial Depth Joints will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Asphalt Patching of Partial Depth Joints". The area to be paid for will be the total number of square metres of joints patched in accordance with this specification, accepted, and measured by the Contract Administrator.

**E12. MIX DESIGN PROPORTION**

**E12.1 General**

E12.1.1 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, medians, safety medians and boulevard splash strips, sidewalks and other related concrete works.

**E12.2 Referenced Standard Construction Specifications**

(a) CW 3310 – Portland Cement Concrete Pavement Works

**E12.3 Mix Design**

E12.3.1 Further to CW 3310-R18 Table CW 3310.5, the minimum cementitious contents shall be as follows:

- Type 1 - 380 kg/m<sup>3</sup>
- Type 2 - 360 kg/m<sup>3</sup>
- Type 3 - 380 kg/m<sup>3</sup>
- Type 4 - 380 kg/m<sup>3</sup>

- Type 5 - 340 kg/m<sup>3</sup>
- Type 6 - 360 kg/m<sup>3</sup>

#### E12.4 Requirements

E12.4.1 The Mix Design Statements for all the concrete shall be submitted to the City of Winnipeg, Research and Standards Engineer for approval.

#### E12.5 Quality Assurance

E12.5.1 The Contract Administrator shall ensure the frequency and number of quality assurance tests in accordance with CW 3310.

### E13. DIAMOND GRINDING

#### E13.1 DESCRIPTION

E13.1.1 This specification covers the Diamond Grinding of existing concrete pavements.

#### E13.2 EQUIPMENT

##### E13.2.1 Grinding Machine

- (a) The grinding machine shall be self-propelled complete with a mounted grinding head with diamond blades capable of grinding a minimum width of 1.2 meters designed for grinding and texturing pavement. The machine shall have a minimum total weight of 15,876 kilograms (including the grinding head) and an effective wheel base of no less than 3.65 meters.
- (b) The grinding machine shall have a positive means of vacuuming the grinding slurry residue from the pavement surface, leaving the pavement surface in a clean, near-dry condition.
- (c) All equipment shall be maintained to ensure it is in proper working order. The "roundness" of the match and depth control wheels of the grinding machine shall be regularly monitored; any wheels found to be out of round shall be immediately replaced.
- (d) Any equipment that causes ravelling, aggregate fractures or disturbance to the pavement joints shall not be permitted.

##### E13.2.2 Inertial Profiler

- (a) The Inertial Profiler shall conform to the Class 1 requirements in accordance with the latest revision of ASTM E-950.
- (b) The Inertial Profiler must be properly calibrated and certified for use for the current construction season. Acceptable certification shall be Mn/DOT or as approved by the Project Manager.
- (c) Documentation of the certification must be provided to Project Manager prior to commencement of any measurements.

#### E13.3 CONSTRUCTION METHODS

##### E13.3.1 Pavement Grinding

- (a) The pavement grinding shall be scheduled and completed on the mainline pavement lanes in a manner that produces a neat, uniform finished surface.
- (b) The pavement grinding shall not commence on until the Partial and Full-Depth Repairs have been completed.
- (c) The pavement shall be ground in the longitudinal direction parallel to the pavement center line.
- (d) The pavement grinding shall commence on the low side of the pavement.

- (e) Passes of the grinding head shall not overlap more than 25mm.
- (f) For pavements with existing curbs, grinding shall be completed to within 150mm of the face of curb.
- (g) Grinding shall be completed in a manner that removes joint or crack faults and maintains lateral drainage and constant cross slope. The maximum allowable difference between the adjacent sides of the joints and cracks shall be 2mm.
- (h) The maximum average grinding depth shall not exceed 20mm.
- (i) The Contractor shall be responsible for arranging and supplying all water required for the project. Water obtained for the City of Winnipeg shall be in accordance with E7.
- (j) The edges of adjacent pavement shoulders and auxiliary lanes shall be feathered along the edge of the mainline grinding as required to provide drainage. Feathering shall be required when the mainline grinding leaves a vertical lip greater than 5 mm to the adjacent pavement surface.
- (k) Existing structures such as manholes, curb and gutter inlets and water valves shall be feathered to the satisfaction of the Project Manager.
- (l) When directed by the Project Manager, the grinding shall extend 5 meters into an existing asphalt surface.

#### E13.3.2 Final Surface Finish

- (a) The grinding process shall produce a pavement surface that is true in grade and uniform in appearance with a longitudinal line-type texture. The line-type texture shall contain grooves that are parallel to the centerline and present a narrow ridge corduroy type appearance. The peaks of ridges shall be a minimum 1.5 mm to a maximum 3.0 mm higher than the ground pavement surface. The finished grooves shall be evenly spaced 2 to 3 mm apart.
- (b) The grinding process shall produce a longitudinal line-type texture that is straight and free of deviations. Any deviation from a straight longitudinal line-type texture, identified at the sole discretion of the Project Manager, shall be re-ground at the expense of the Contractor.
- (c) The Contractor shall be responsible for the selection of the number and type of blades to be used to provide the proper surface finish for the aggregate type present. Unbroken fins shall be removed to the satisfaction of the Project Manager.
- (d) The Contractor shall be responsible to determine the proper sequence of operations to meet the specification. Multiple passes may be required to meet the specifications.
- (e) A minimum of 98% of the pavement surface area shall be ground or textured.
- (f) Localized depressed pavement areas will be exempt from texture and smoothness requirements. Additional grinding of these areas may be required and will be as directed by the Project Manager.

#### E13.3.3 Slurry Removal

- (a) The Contractor shall remove and dispose of all grinding slurry from the operations in a manner and at a location to satisfy environmental regulations.
- (b) All slurry removal operations shall be approved by the Project Manager.
- (c) No grinding slurry shall be allowed to flow across lanes occupied by traffic or enter into closed drainage systems.

#### E13.3.4 Slurry Handling

- (a) The grinding slurry to be removed from the site shall be collected in water-tight haul units and transported to approved disposal facilities.

#### E13.3.5 Slurry Disposal Sites

- (a) The Contractor shall dispose of grinding slurry at the designated disposal sites provided by the City of Winnipeg. The disposal sites are as follows;

- (i) City of Winnipeg South End Pollution Control Centre snow dump site.
  - (ii) City of Winnipeg McPhillips Street snow dump site.
- (b) The Contractor shall contact the Streets Maintenance Division Area Supervisor to obtain access. The Contractor shall ensure that these sites are only utilized for disposal of the material from this project. The sites shall be secured at all times.
- (c) Prior to grinding operations the Contractor shall be responsible for installing temporary barriers at the disposal site in order to hold back slurry from meander throughout the site. The Project Manager and the Contractor will develop a layout of the barriers. The cost of supplying and installing the barrier system will be at the expense of the Contractor.
- (d) At completion of the grinding disposal operations, the Contractor shall clean up the disposal sites to the satisfaction of the Project Manager.
- (e) The site clean-up shall include removal of excess water, removal of remaining grinding solids and regrading of the site to original condition prior to commencement of the grinding disposal operations.

#### E13.3.6 Smoothness Requirements

- (a) The Contractor shall be responsible for all profile testing to meet the requirements of this contract.
- (b) All testing shall be continuous and be run in the direction of the traffic. Stationing shall be provided by the Project Manager and for all testing.
- (c) The Profiler shall be operated at optimum speed as defined by the manufacturer.
- (d) Prior to performing any grinding work, the Contractor shall provide a control profilograph trace. The control trace will be used to identify the required smoothness for the project.
- (e) All testing shall be reported in 100 metre segments complete with a summary of all dip and bump measurements and locations.
- (f) Upon completion of the grinding operations, acceptance measurements shall be completed.
- (g) The Contractor shall run the profile in both wheel paths of each individual lane and average the resulting IRI results to determine acceptance. The profiles shall be run 0.9 meters from each lane line. A guide shall be used to ensure proper alignment of the profile. The Project Manager will have a representative present during all testing periods.
- (h) The finished surface smoothness requirements shall be as follows;
  - (i) 70km/hr or greater Posted Speed Locations – IRI equal to or less than 1.20 m/km.
  - (ii) 50km/hr Posted Speed Locations – IRI equal to or less than 1.60 m/km.
  - (iii) Each lane will be evaluated separately in 100 metre segments.
- (i) The Contractor shall regrind, at no additional cost, any areas found not meeting the smoothness requirements.
- (j) The finished surface smoothness requirements shall not include any localized bumps exceeding 10 mm in 7.5 meters where the areas have reached the maximum removal depth. These areas shall be reviewed and approved by the Project Manager.
- (k) Areas of depressed pavement due to subsidence or other localized causes where the areas have reached the maximum removal depth will also be excluded from the finished surface smoothness requirements. These areas shall be reviewed and approved by the Project Manager.
- (l) The Contractor shall provide a print out of all smoothness measurements, a profilogram and a copy of the raw profile data in an unfiltered ERD file format.

#### E13.3.7 Joint and Crack Sealing

- (a) All joints shall be resealed, regardless of preexisting condition, following diamond grinding.
- (b) All existing sealant shall be removed prior to joint sealing.
- (c) Crack sealing will be completed at the discretion of the Contract Administrator and shall be paid under its respective pay item.

#### **E13.4 MEASUREMENT AND PAYMENT**

- E13.4.1 Diamond Grinding will be measured on an area basis and paid for at the Contract Unit Price per square metre for "Diamond Grinding". The area to be paid for will be the total number of square metres of pavement surface ground, textured and grinding slurry hauled and disposed of off-site in accordance with this specification, accepted and measured by the Contract Administrator.
- E13.4.2 Pavement edges of adjacent pavement shoulders and auxiliary lanes identified by the Project Manager to be feathered will be measured and included in payment at one metre width regardless of actual grinding width required to feather the lip. The minimum length of feather pass will be 30 metres.
- E13.4.3 No additional measurement or payment will be made if multiple passes of the grinding equipment are required to meet the smoothness requirements. The area of the pavement ground will only be considered for payment once unless regrinding is directed by the Contract Administrator.
- E13.4.4 No additional measurement or payment will be for testing to net the smoothness requirements of this contract.
- E13.4.5 No additional measurement or payment will be for joint sealing following Diamond Grinding.

#### **E14. SOFT EXCAVATION TO EXPOSE UNDERGROUND UTILITIES**

##### **E14.1 DESCRIPTION**

- E14.1.1 This specification covers the soft excavation to expose underground utilities to verify the depth and location of the underground utilities and whether it will interfere with the installation of proposed Works on site.
- E14.1.2 These underground utilities include, but are not limited to, Manitoba Hydro cables, MTS cables, existing sewers, and existing critical water infrastructure.

##### **E14.2 MATERIALS**

- E14.2.1 Backfill Material
  - (a) Backfill material for backfill of shafts after hydro-excavation has been completed shall consist of sand as per City of Winnipeg Standard Construction Specification CW 2030.

##### **E14.3 CONSTRUCTION METHODS**

- E14.3.1 Prior to commencement of any construction works adjacent to underground utilities, the Contractor shall use soft digging or hand excavation to expose the underground utilities.
- E14.3.2 All critical water infrastructure shall be located prior to the commencement of any construction works in order to accurately determine restricted work areas.
- E14.3.3 Once the elevation of the top of the pipe or duct has been determined the resulting excavation shall be backfilled with bedding sand to the elevation of the existing ground

##### **E14.4 MEASUREMENT AND PAYMENT**

- E14.4.1 Soft excavation to expose underground utilities will be considered incidental to the Work. No measurement or payment will be made.

## **E15. OPERATING CONSTRAINTS FOR WORK IN CLOSE PROXIMITY TO CRITICAL WATER INFRASTRUCTURE**

### **DESCRIPTION**

#### **E15.1 General**

E15.1.1 This Section details operating constraints for all work to be carried out in close proximity to the City feeder mains and other critical water infrastructure. Close proximity shall be deemed to be any construction activity within a 5 m horizontal offset from the centreline of the feeder main/water main, within 5 m of valve chambers and other appurtenances, and any other infrastructure identified below.

E15.2 The following shall be considered critical pipelines and water infrastructure for this project:

E15.2.1 Logan Avenue:

(a) Feeder main

(i) Runs in the eastbound gutter lane throughout the project limits.

E15.2.2 Westbound Grant Avenue

(a) 450 Feeder Main

(i) Crosses Grant Ave. at Haney St.

(b) 300 AC Water Main

(i) Crosses Haney St. near the north of Grant Ave. and connects to the 450 Feedermain

E15.2.3 Northbound Century Street

(a) 500 AC Water Main

(i) Crosses Century St. at Sargeant Ave.

E15.3 General Considerations for Work in Close Proximity to Critical Water Infrastructure:

E15.3.1 Feeder mains and large diameter water mains are a critical component of the City of Winnipeg Regional Water Supply System and work in close proximity to feeder mains shall be undertaken with an abundance of caution. Large diameter feeder main and water mains cannot typically be taken out of service for extended periods to facilitate construction and inadvertent damage caused to the pipe would likely have catastrophic consequences.

E15.3.2 Work around critical water infrastructure shall be planned and implemented to minimize the time period that work is carried out in close proximity to the pipe and to ensure that the pipeline is not subjected to excessive construction related loads, including excessive vibrations and/or concentrated or asymmetrical lateral loads during backfill placement.

E15.3.3 Large diameter pressure pipe generally has limited ability to withstand increased earth and live loading. Therefore, every precaution must be undertaken to ensure that applied loading during all phases of construction is within accepted loading parameters. PCCP typically fails in a non-ductile mode with the potential to cause extensive consequential damage to infrastructure if failure should occur. All large diameter feeder mains/water mains have the potential to cause extensive flooding.

E15.3.4 Construction in close proximity to critical infrastructure shall not commence until both the equipment and construction method statements have been submitted, reviewed, and accepted by the Contract Administrator.

#### **E15.4 Submittals**

E15.4.1 Submit proposed construction equipment specifications to the Contract Administrator for review a minimum of ten (10) Business Days prior to construction. The equipment submission shall include:

(a) equipment operating and payload weights;

- (b) equipment dimensions, including: wheel or track base, track length or axle spacing, track widths or wheel configurations; and,
  - (c) load distributions in the intended operating configuration.
- E15.4.2 Submit a construction method statement to the Contract Administrator a minimum of five (5) business days prior to construction. The construction method statement shall contain the following minimum information:
  - (a) proposed construction plan including excavation locations, haul routes, excavation equipment locations, and loading positions;
  - (b) excavation plans, including shoring designs, for excavations occurring in close proximity to feeder mains (within 5 m horizontal of the pipe's centerline) where the excavation to be extended below the top of the feeder mains embedment zone (150 mm above the pipe);
  - (c) trenchless construction methodology for feeder main crossings, including: installation methods, means of grade control, means of confirming clear separation between the new LDS and existing feeder main; and
  - (d) any other pertinent information required to accurately describe the construction activities in close proximity to the feeder main and permit the Contract Administrator to review the proposed construction plans.
- E15.4.3 Incomplete or partial submissions will not be reviewed and will be returned to the Contractor for re-submission.
- E15.4.4 Allow five (5) Business Days for review by the Contract Administrator.
- E15.5 Feeder Main Operational Limitations
  - E15.5.1 Feeder main shutdowns are scheduled based on a number of factors including water demand, weather, reservoir operation, routine maintenance and repair work within the regional distribution system, and other factors. If feeder main shutdowns are required, the City shall endeavour to make requested time periods available to the Contractor to schedule his/her work requiring removal of the feeder main from service, without limiting the City's control over the operation of the feeder main to complete other work, maintain adequate water supply and storage of water and maintain the integrity of the infrastructure. The City shall reserve the right to cancel and/or delay these schedule dates at any time, due to any circumstances that could adversely affect the feeder main or water supply including, but not limited to, high water demand, abnormal weather, failures of related water system components and/or security concerns.
  - E15.5.2 Scheduling Restrictions:
    - (a) Temporary feeder main shutdowns are typically limited to off-peak demand seasons (September 15<sup>th</sup> to May 15<sup>th</sup>) and low demand hours including evenings or other low demand periods.
  - E15.5.3 The Contractor shall provide Notice to the Contract Administrator in writing, a minimum of fifteen (15) Business Days prior to requiring the shutdown. The City will endeavour to schedule the shutdown as requested.

## CONSTRUCTION METHODS

- E15.6 Pre-Work, Planning and General Execution
  - E15.6.1 No work shall commence in close proximity to feeder mains, chambers, and critical infrastructure until the equipment specifications and construction method statement have been submitted and accepted, and feeder main locations have been clearly delineated in the field. Work over feeder mains shall only be carried out with equipment that has been reviewed and quantified in terms of its loading implications on the pipe.
  - E15.6.2 Contact the City of Winnipeg Water and Waste Department, Construction Services Coordinator prior to construction.



- E15.6.3 Locate feeder mains and water mains and confirm their position horizontally and vertically prior to undertaking work in close proximity to the identified feeder main. Note, exact locations to be identified in the field. Deviations from the elevations noted shall be reported to Contract Administrator for review prior to proceeding with work.
- E15.6.4 Visually delineate all critical infrastructure identified herein on Site by use of paint, staking/flagging, construction fencing, snow fencing, or other suitable methods
- E15.6.5 Only utilize construction practices and procedures that do not impart excessive vibratory loads on feeder mains and chambers or that would cause settlement of the subgrade below feeder mains and critical pipelines.
- E15.6.6 Where the existing road structure must be removed, crossing of critical infrastructure shall be prohibited from the time the existing roadway structure is removed until the completion of granular base construction. At all times prior to completion of final paving; reduce equipment speeds to levels that minimize the effects of impact loading to the critical infrastructure.
- E15.6.7 Only equipment and construction practices stipulated in the accepted construction method statement and the supplemental requirements noted herein may be utilized in close proximity to feeder mains, chambers, and other critical infrastructure identified herein.
- E15.6.8 Construction operations should be staged in such a manner as to limit multiple construction loads at one time, (e.g., offset crossings sufficiently from each other, rollers should remain a sufficient distance behind spreaders to limit loads. A reasonable offset distance is 3 m between loads).
- E15.6.9 Granular material, construction material, soil, and/or other material shall not be stockpiled on the pipelines or within 5 m of any feeder main, valve chamber, or other critical infrastructure identified herein.
- E15.6.10 The Contractor shall ensure that all crew members understand and observe the requirements of working near feeder mains, valve chambers, and critical infrastructure. Prior to commencement of on-Site work, the Contractor shall jointly conduct an orientation meeting with the Contract Administer, all superintendents, foreman, and heavy equipment operators to make all workers on the Site fully cognizant of the limitations of altered loading on, the ramifications of inadvertent damage to, and the constraints associated with work in close proximity to feeder mains and critical pipelines. New personnel introduced after commencement of the Project need to be formally orientated as outlined herein. It is recommended that restrictions associated with the crossing, consistent with the Contractor's submitted method statement be posted on Site and near the crossing.
- E15.7 Demolition, Excavation, and Shoring
- E15.7.1 Use of pneumatic concrete breakers within 3 m of a feeder main, valve chamber, or critical pipeline is prohibited. Pavement shall be full depth sawcut and carefully removed. Use of hand held jackhammers for pavement removal will be allowed.
- E15.7.2 Offset excavation equipment a minimum of 3 m from the centerline of critical pipelines when undertaking excavations where there is less than 2.4 m of earth cover over the pipeline.
- E15.7.3 Excavation:
- (a) Utilize only smooth edged excavation buckets, soft excavation, or hand excavation techniques where there is less than 1.5 m of earth cover over the pipeline.
  - (b) Where there is less than 1.0 m of soil cover above the pipeline, provide full time supervision and complete the excavation utilizing hand excavation, soft excavation methods, or machine excavation. Where machine excavation is to be used the crown of the pipeline must be exposed (or suitable located) using hand or soft excavation methods a minimum of every 1.8 m.

- (c) Where there is less than 0.5 m of soil cover above the pipeline, provide full time supervision and complete the excavation utilizing hand excavation or soft excavation methods only.

E15.7.4 Equipment should not be allowed to operate while positioned directly over a feeder main or critical pipeline except were permitted herein, outlined in the reviewed and accepted construction method statement.

E15.7.5 Excavations within 3 m of the outside edge of a feeder main (hydrovac holes for confirming trenchless installations excluded) and which extend below obvert of the feeder main shall utilize shoring methods that precludes the movement of native in-situ soils (i.e. a tight shoring system).

#### E15.8 Underground Construction and Trenchless Pipe Installation

E15.8.1 Install pipes to the grades shown on the Drawings. A minimum clear separation distance (outside to outside of pipe wall) of 1.0m shall be maintained between crossing pipes and the feeder main and cast iron water main.

E15.8.2 The Contractor shall locate feeder mains and confirm their position horizontally and vertically prior to commencing with any trenchless pipe installations to ensure proper clearances are maintained. Under NO circumstances should blind coring proceed across feeder mains.

E15.8.3 The Contractor shall visually confirm the location and alignment of the drill rods or jacking pipe (horizontally and vertically) prior to proceeding with the trenchless installation beneath the feeder main. It is recommended that the new pipe alignment be confirmed within 2 m of the outside of the feeder main pipe but no closer than 0.5 m from the outside edge of the pipe.

E15.8.4 No trenchless methods involving soil displacement (plugs) shall be permitted in the vicinity of the Feeder main.

E15.8.5 Pressure grouting or approved alternative methods shall be used to fill voids caused by the installation or if the bored hole diameter is greater than the outside diameter of the pipe by more than 25 mm.

E15.8.6 Where excavation is required within the feeder main's embedment zone, the Contractor shall take steps to ensure the granular embedment material surrounding the feeder main remains stable during the work and the feeder main outside of the excavation is not undermined.

#### E15.9 Subgrade Construction

E15.9.1 Subgrade and backfill compaction within 3 metres (horizontal) of a critical pipeline or valve chamber shall be limited to non-vibratory methods only. Small walk behind vibratory packers will be permitted.

E15.9.2 Subgrade, sub-base and base course construction shall be kept in a rut free condition at all times. Construction equipment is prohibited from crossing pipelines if the grade is insufficient to support the equipment without rutting.

E15.9.3 Subgrade conditions should be inspected by personnel with competent geotechnical experience (e.g. ability to adequately visually classify soils and competency of subgrade, subbase, and base course materials). In the event of encountering unsuitable subgrade materials above the feeder main, 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.

E15.9.4 Fill material shall not be dumped directly on pipelines but shall be stockpiled outside the limits noted in these recommendations and shall be carefully bladed in-place

E15.9.5 Only use compaction equipment approved by the contract administrator to compact fill materials above critical pipelines. Compaction of fill materials shall be completed using

static methods only, no vibratory compaction will be allowed within the limits noted in these recommendations.

- E15.9.6 Construction operations shall be staged to minimize the time period between excavation to subgrade and placement of granular subbase materials. Should bare subgrade be left overnight, measures shall be implemented to protect the subgrade against inadvertent travel over it and to minimize the impact of wet weather.

#### E15.10 Subbase and Base Course Construction

- E15.10.1 Subbase or base course materials shall not be dumped directly on pipelines but shall be stockpiled outside limits noted in these recommendations and shall be carefully bladed in-place.

- E15.10.2 Subbase compaction within 3 m horizontal of the centreline of a critical pipeline shall be either carried out by static methods (without vibration) or with smaller approved equipment such as hand held plate packers or smaller roller equipment.

#### E15.11 Paving

- E15.11.1 When constructing asphalt pavements only non-vibratory compaction should be used within 3 m (horizontal) of the center of critical pipelines.

### E16. ASHALT SCRATCH COAT

#### DESCRIPTION

##### E16.1 General

- E16.1.1 This specification covers placement of an asphalt scratch coat in areas identified to have pavement repair fabric installed prior to an asphalt overlay.
- E16.1.2 Referenced Standard Construction Specifications
- (a) CW 3140—Supply and Installation of Pavement Repair Fabric
  - (b) CW 3410 – Asphaltic Concrete Pavement Works.
  - (c) Appendix A – Special Provision (Asphalt Pavement Works)

#### MATERIALS

##### E16.2 Asphalt Material

- E16.2.1 Asphalt material will be MS 1 and will be supplied in accordance with Appendix A – Special Provision (Asphalt Pavement Works).

#### CONSTRUCTION METHODS

##### E16.3 General

- E16.3.1 In areas identified to receive pavement repair fabric, the asphalt surface shall be milled to a sufficient depth to accommodate a 50mm asphalt scratch coat.
- E16.3.2 The scratch coat shall be placed and compacted as per Appendix A – Special Provision (Asphalt Pavement Works)
- E16.3.3 All asphalt scratch coats shall be accepted by the Contract Administrator prior to the placement of the pavement repair fabric.

#### MEASUREMENT AND PAYMENT

##### E16.4 Asphalt Scratch Coat

- E16.4.1 Asphalt Scratch Coat will be measured and paid for at the Contract Unit Price per tonne for “Asphalt Scratch Coat”, which price shall be payment in full for supplying all materials and

performing all operations herein described and all other items incidental to the Work included in this specification.

E16.4.2 The weight to be paid shall be the total tonnes placed and compacted in accordance with this specification and accepted by the Contract Administrator, as measured on a certified weigh scale.

## **APPENDIX A – SPECIAL PROVISION (ASPHALT PAVEMENT WORKS)**


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## **1. DESCRIPTION**


### **1.1 General**

- 1.1.1 This specification covers the requirements for the materials, equipment, and processes for proportioning and mixing hot mix asphalt (HMA) including warm mix asphalt (WMA), recycled mixes, and mixes for miscellaneous work in accordance with the Marshall and Superpave methods.
- 1.1.2 This Specification covers the preparation of hot/warm-mixed, hot/warm-laid, asphalt paving mixes for, and all placing operations relating to, the construction of asphalt pavements, overlays and other related pavement works.
- 1.1.3 The Work to be done by the Contractor under this Specification shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all work as hereinafter specified.


### **1.2 Definitions**

- 1.2.1 Hot Mix Asphalt (HMA) means hot mixed, hot laid asphalt. The terms are used interchangeably. HMA may include recycled or specialty mixes.
- 1.2.2 Warm Mix Asphalt (WMA) means warm mixed, warm laid asphalt produced using technologies that allow for the mixing, handling, and compaction of the asphalt concrete mixture at a temperature typically lower than conventional hot mix asphalt.
- 1.2.3 Lift means the compacted thickness of asphalt material laid in a single application.
- 1.2.4 Base Course means the layer of material between the sub-base and the pavement wearing surface.
- 1.2.5 SP1 means dense-graded asphalt mix using Superpave mix design for surface course. SP1 is intended for the reconstruction and asphalt overlay of expressways, major arterials, and minor arterials, reconstruction of industrial/commercial collectors and associated approaches as well as the paving of bridge decks.
- 1.2.6 SP2 means dense-graded asphalt mix using Superpave mix design for intermediate and bottom lifts. SP2 is intended for the reconstruction of high traffic volume streets, including expressways, major arterials, minor arterials, industrial/commercial collectors and associated approaches as well as the paving of bridge decks.



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- 1.2.7 MS1 means dense-graded asphalt mix using Marshall mix design for surface course. MS1 is intended for the reconstruction and asphalt overlay of intermediate and low volume streets including residential major or minor collectors, residential local, public lanes, asphalt pathways and associated approaches.
- 1.2.8 MS2 means dense-graded asphalt mix using Marshall mix design for intermediate and bottom lifts. MS2 is intended for intermediate and low volume streets including residential major or minor collectors, residential local, public lanes, asphalt pathways and associated approaches.
- 1.2.9 Reclaimed asphalt pavement (RAP) means the processed HMA or WMA material that is recovered by partial or full depth removal.
- 1.2.10 Deleterious Material means soft or friable material that would decay or disintegrate from weathering including ironstone, porcelain, vegetation, organic material, wood, glass, alkali, plastic, metal, reinforcing steel, building rubble, brick, shale, mica, coal, clay lumps, and loam or other deleterious substances.
- 1.2.11 Job-Mix Formula (JMF) means the percentage passing on each designated sieve of the total mass of aggregate and the amount of asphalt cement as a percentage by mass of the mixture that are based on specified mix design procedures, and when mixed results in a paving mixture in accordance with this specification.
- 1.2.12 Mix Design means the design of the proportions of aggregates, asphalt cement, and additives that when uniformly mixed results in an acceptable asphalt mix in accordance with the specified method.
- 1.2.13 Performance Graded Asphalt Cement (PGAC) means an asphalt binder that is asphalt-based cement produced from petroleum residue, either with or without the addition of non-particulate modifiers, in accordance with AASHTO M320.
- 1.2.14 Superpave means the method for specifying material components and asphalt mix design using the Superpave Gyratory Compactor (SGC).
- 1.2.15 Joint means a vertical contact between a new asphalt pavement course and any existing asphalt pavement or any rigid object that exists at the time the HMA is laid.
- 1.2.16 Prime Coat means application of emulsified asphalt cement on a Base Course granular surface.
- 1.2.17 Tack Coat means application of emulsified asphalt cement on existing asphalt or portland cement concrete pavement prior to overlay, or between layers of new bituminous pavement.

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1.2.18 Prime/Tack Coat Cure means the moment when water separates enough from the emulsified asphalt to show a color change from brown to black.

1.2.19 Segregation means a condition of the pavement characterized by areas with comparatively coarser texture than that of the surrounding pavement.

1.2.20 Lot means a specific quantity of material, approximately 150 tonnes or less, from a single source and produced by the same process within a single operational day. Actual size of Lot may vary based on scaled quantities delivered to the road.

## **2. MATERIALS**

### **2.1 Handling and Storage of Materials**

2.1.1 All asphalt constituent materials shall be stored in a manner that will prevent contamination or deterioration. Access to the storage facilities shall be provided for inspection by the Contract Administrator.

2.1.2 All fabricated and incidental materials, such as anti-stripping, prime coat, tack coat, etc., shall be stored in accordance with the manufacturer's instructions.

2.1.3 The Contract Administrator shall approve all materials before any construction is undertaken. If, in the opinion of the Contract Administrator, such materials, in whole or in part, do not conform to this Specification or are found to be defective in manufacture or have become damaged in transit, storage or handling operations, then such material shall be rejected by the Contract Administrator and replaced by the Contractor at his own expense. There shall be no charge to the City for any materials taken for testing purposes.

### **2.2 Aggregate**

2.2.1 Aggregate shall consist of crushed stone or gravel or a combination of these materials conforming to the requirements of this Specification.

2.2.1.1 Each of the fine- and coarse-fractions of the combined aggregate shall meet all the requirements of this Specification and shall be handled and weighed separately to maintain uniformity. The supplier shall provide the City of Winnipeg, Research and Standards Engineer with test data demonstrating that the material will produce asphalt mixes of acceptable quality that meet all the requirements of this Specification.

2.2.1.2 Aggregates shall be hard and durable fragments with a maximum of 2% deleterious materials in both coarse and fine aggregates in accordance with ASTM Standard C142, Standard Test Method for Clay Lumps and Friable Particles in Aggregate and ASTM


C123/C123M - Standard Test Method for Lightweight Particles in Aggregate by Washing as well as visual inspection of aggregates to identify deleterious materials.

2.2.1.3 The combined aggregate gradation and physical properties shall comply with the requirements in Table CW 3410.1.

**TABLE CW 3410.1 - Combined Aggregate Gradation and Physical Properties Limits**

	Test Method	SP1	SP2	MS 1	MS 2
Sieve Size, mm		Percent of Total Dry Weight Passing Each Sieve			
19.0	ASTMC 136 or ASTM D5444 (Note 1)	--	100%	--	100%
16.0		100%	90% - 100%	100%	90% - 100%
12.5		90% - 100%	70% - 90%	90% - 100%	75% - 95%
9.5		75% - 90%	60% - 80%	75% - 90%	70% - 90%
4.75		48% - 70%	40% - 62%	48% - 70%	55% - 70%
2.36		28% - 58%	23% - 50%	28% - 58%	35% - 55%
1.18		19% - 40%	15% - 35%	19% - 40%	28% - 46%
0.60		13% - 30%	10% - 22%	13% - 30%	17% - 32%
0.15		4% - 15%	4% - 14%	4% - 15%	4% - 12%
0.075		2% - 8%	2% - 8%	2% - 8%	3% - 10%
Fine Aggregate Angularity, %min (Note 2)	ASTM C1252 – Method A	45%	45%	40%	40%
Clay Content (Sand Equivalency), %min (Note 3)	ASTM D2419	45%	45%	45%	40%
Crush Count, %min (2 Fractured Faces) (Note 4)	ASTM D5821	95%	80%	80%	80%
Flat and Elongated Particles, % Max	ASTM D4791	6%	10%	--	--
Absorption, %max	ASTM C127	2%	2%	2%	2%
Abrasion, %max (Note 4)	ASTM C131	35%	35%	35%	40%
Micro-Deval, %max (Note 4)	ASTM D6928	15%	15%	15%	17%
Soundness (Note 5)	ASTM C88	Note 3	Note 3	Note 3	--
Lightweight Particles Content, %max (Note 6)	ASTM C123	3%	5%	3%	5%

- Note 1: ASTM C136 shall be used for determining the particle size distribution of fine and coarse virgin

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aggregates while ASTM D5444 shall be used for determining the particle size distribution of extracted aggregates from bituminous mixtures.

- Note 2: Test criteria shall apply for fine aggregates passing 4.75mm sieve. Test results shall be based on combined aggregates prior to the addition of RAP. Fine Aggregate Angularity (FAA) of 43% is acceptable, provided the mix complies with all other specified requirements.
- Note 3: Test results shall be conducted on the combined aggregate mix before the addition of Reclaimed Asphalt Pavement (RAP).
- Note 4: Test criteria shall apply for coarse aggregates retained on 4.75 mm sieve.
- Note 5: Soundness - Coarse aggregate when subjected to five cycles of the soundness test shall have a weighted loss of not more than twelve (12) percent when sodium sulphate is used or not more than eighteen (18) percent when magnesium sulphate is used in accordance with ASTM Standard C88, Test for Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate.
- Note 6: The lightweight particle content is the percentage of lightweight particles by weight of all particles retained on 4.75mm sieve.

2.2.1.4 Quarried limestone and dolomite shall not be acceptable as asphalt aggregate materials for SP1 and MS1 surface lifts.

## 2.3 Asphalt Cement

2.3.1 Asphalt cement shall be performance graded asphalt cement in accordance with AASHTO M 320 unless otherwise specified in the Contract Documents.

2.3.1.1 Use only those materials listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Material Management Internet site at:  
<https://legacy.winnipeg.ca/matmgt/spec/default.stm>

2.3.2 The PGAC shall be homogeneous, free of water and any contamination, and shall not foam when heated to the temperatures specified by the manufacturer for the safe handling and use of the product. It shall be shipped, used, and always handled in accordance with the manufacturer's specifications.

2.3.3 All PGAC shall be in accordance with AASHTO M 320 when tested using the methods designated in AASHTO R29, Test Procedure for Grading an Unknown Asphalt Binder and continuous grading temperatures and reported continuous grading temperatures rounded to the nearest 0.1 °C.

2.3.4 Grades shall be tested at a temperature of 58 °C to determine the average percent recovery at 3.2 kPa (R<sub>3.2</sub>) in accordance with the requirements of AASHTO T350 Multiple Stress Creep Recovery (MSCR) Test using a Dynamic Shear Rheometer. The minimum MSCR Elastic Recovery shall be 25%.

2.3.5 The PGAC performance grading test result requirements shall be

- Equal to or above XX\* and equal to or below -YY\*; or
- $\leq 0.5$  °C below XX and  $\leq 0.5$  °C above -YY

Where \*XX is the specified high temperature performance grade and design maximum pavement temperature and -YY is the specified low temperature performance grade and design minimum pavement temperature.

2.3.6 The PGAC shall comply with the performance grading requirements in Table CW 3410.2.

**Table CW 3410.2: Categories for PGAC**

Asphalt Type		Specified Standard Grade*
Top lift	SP1	PG 64-34P
	MS1	PG 58-34P
Other lifts	SP2	PG 58-34P
	MS2	PG 58-34P

## 2.4 **Mineral Filler**

2.4.1 Mineral filler, when required, shall consist of finely divided mineral matter such as rock dust, slag dust, hydrated lime, hydraulic cement, fly ash, loess or other suitable mineral matter, and shall conform to the requirements of ASTM Standard D242, Standard Specification for Mineral Filler for Bituminous Paving Mixtures. Mineral filler shall be free from organic matter and shall be non-plastic when tested in accordance with ASTM D2974 Standard Test Methods for Determining the Water (Moisture) Content, Ash Content, and Organic Material of Peat and Other Organic Soils


## 2.5 **Incidental Materials**

### 2.5.1 **Prime Coat**

2.5.1.1 Prime coat shall consist of an emulsified asphalt. Method of application shall conform to the manufacturer's recommendations.

2.5.1.2 Use only those materials listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Material Management Internet site at:

<https://legacy.winnipeg.ca/matmgt/spec/default.stm>

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## 2.5.2 Tack Coat

2.5.2.1 Tack coat shall consist of emulsified asphalt. Method of application shall conform to the manufacturer's recommendations.

2.5.2.2 Use only those materials listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Material Management Internet site at:  
<https://legacy.winnipeg.ca/matmgt/spec/default.stm>

## 2.5.3 Reclaimed Asphalt Pavement (RAP)

2.5.3.1 Reclaimed asphalt pavement shall consist of sound durable particles produced by crushing and screening.

2.5.3.2 RAP is not permitted in SP1 where used as a surface course. Up to 10% by mass of RAP is permitted where SP1 is used in lifts other than surface course.

2.5.3.3 Up to 10% by mass of RAP is permitted in MS1 where used as a surface course.

2.5.3.4 Up to 15% by mass of RAP is permitted in MS1, MS2, and SP2 where used in lifts other than surface course.

2.5.3.5 RAP shall be blended during production of the asphalt and the mix produced shall consist of a uniform blend of all materials.


2.5.3.6 All physical requirements and combined aggregate gradation limits shall meet the requirements of Table CW 3410.1.

## 2.5.4 Recycled Asphalt Shingles (RAS)

2.5.4.1 RAS shall be blended during production of the asphalt and the mix produced shall consist of a uniform blend of all materials.

2.5.4.2 RAS shall consist of sound durable particles produced from recovered organic asphalt, shingles, asphalt caps and asphalt rolled roofing. Fiberglass shingles are not permitted.

2.5.4.3 RAS material can be incorporated to a maximum 3% by weight of the total mix into MS1, MS2, and SP2 where used in lifts other than surface course.

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2.5.4.4 RAS particles shall be a maximum size of 10mm and shall otherwise meet the gradation requirements in Table CW 3410.1.

2.5.4.5 RAS shall be free of chemical contaminants. Deleterious substances shall be a maximum of 3% of RAS by weight. Deleterious substances include fiberglass shingles, metal, glass, rubber, nails, soil, brick, tars and asbestos.

### **3. DESIGN REQUIREMENTS FOR ASPHALT PAVING MIX**

#### **3.1 Testing Laboratories**

3.1.1 The City of Winnipeg, Research and Standards Engineer will maintain a list of approved Testing Laboratories. To obtain approval, Testing Laboratories must submit the following information to the Research and Standards Engineer annually prior to April 1<sup>st</sup>:

3.1.1.1 Valid Category “B” Asphalt laboratory certification or higher by Canadian Council of Independent Laboratories (CCIL);

3.1.1.2 A complete list of the certified testing; and,

3.1.1.3 List of the field personnel and their qualifications.

#### **3.2 Asphalt Suppliers**

3.2.1 Asphalt suppliers must submit the following information to the Research and Standards Engineer three weeks prior to paving:

3.2.1.1 Asphalt suppliers Approval Guidelines and Application is available at the City of Winnipeg, Corporate Finance, Material Management Division website at;


<https://legacy.winnipeg.ca/matmgt/spec/default.stm>

3.2.1.2 Names of suppliers and sources for all materials and admixtures;

3.2.1.3 Asphalt mix designs. The mix design shall be completed by an approved laboratory with CCIL **Type “A”** certification based on the asphalt type;

3.2.1.4 Copies of valid scale calibration reports for the asphalt batch plant;

3.2.1.5 Test data for aggregates (in accordance with Clause 2.2);

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- 3.2.1.6 Sieve analysis test reports for the individual aggregates and the combined aggregate gradations to be used in the asphalt. The sieve analysis test reports shall be representative of the material to be used during asphalt production;
- 3.2.1.7 Test data for asphalt cement (in accordance with Clause 2.3) and the following items shall be submitted:
  - 3.2.1.7.1 The PGAC supplier and location that the product shall be supplied from;
  - 3.2.1.7.2 All documentation from the PGAC supplier confirming the grade of PGAC;
  - 3.2.1.7.3 Applicable mixing and compaction temperatures for the product;
  - 3.2.1.7.4 The minimum temperature of the mix immediately after spreading as recommended by the PGAC supplier; and,
  - 3.2.1.7.5 Documentation of construction, storage, and handling requirements, including the material safety data sheet, recompaction temperature, and mix discharge temperature.
- 3.2.1.8 Performance data from trial batches prior to construction to demonstrate the asphalt mix will achieve the performance criteria in Table CW 3410.4 and Table CW 3410.5. Three (3) separate sets of test results from a trial batch will be required for approval of the corrected mix design statement;
- 3.2.1.9 Quality control program for all materials, including a proposed sampling and testing plan in accordance with Clause 3.4;
- 3.2.1.10 The supplier shall hold a valid development license issued in accordance with the Manitoba Environment Act for the operation of the Bituminous Mix plant. The plant shall be located and operated in accordance with the terms and conditions of the license; and,
- 3.2.1.11 The supplier shall control dust at the plant site in accordance with health, safety and environmental requirements.
- 3.2.2 The City of Winnipeg, Research and Standards Engineer will conduct inspections at least once a year during production. Samples of materials may be taken and tested.
- 3.2.3 Testing for qualification or acceptance purposes shall be done in accordance with this Specification and applicable test procedures and standard practices. There shall be no charge for any materials taken for testing purposes.
- 3.2.4 Changes in the source of any asphalt constituent materials will not be permitted without



approval of the City of Winnipeg, Research and Standards Engineer. For new sources, all materials shall be tested.

- 3.2.5 Once approved, all asphalt shall be supplied in accordance with the approved Mix Design Statement. No changes in the asphalt mix designs will be permitted without written permission from the City of Winnipeg, Research and Standards Engineer.
- 3.2.6 Any change in the constituent materials of the asphalt shall require a new asphalt mix design.
- 3.2.7 No asphalt supply or placement shall proceed until the asphalt cement submittal, mix design and Job Mix Formula are approved.

### 3.3 **Asphalt Mix Design and Job Mix Formula**

- 3.3.1 The Mix Design Statements for all asphalt types shall be submitted to the City of Winnipeg, Research and Standards Engineer for approval. The mix shall be proportioned to produce asphalt in accordance with the requirements of Table CW 3410.3 or Table CW 3410.4.

**Table CW 3410.3: Marshall Mix Requirements**

Mix Properties	MS1	MS2
Asphalt Cement, % total sample weight	5.5% to 6.5%	5.0% to 6.0%
Voids in Mineral Aggregate, %min	14%	13%
Voids Filled with Asphalt (%)	67% to 78%	67% to 75%
Air Voids	3.0% to 5.0%	3.0% to 5.0%
Marshall Stability, kN at 60°C	8 min.	8 min.
Flow Index, units of 250 µm	8.0 to 14.0	8.0 to 16.0

Note: The mix shall be designed using 75 blows per side of the test specimen with manual compaction hammer or a mechanical equivalent device.

**Table CW 3410.4: Superpave Mix Requirements**

Mix Properties			SP1	SP2
% of Theoretical Maximum Specific Gravity		Mix Gyrotory Compaction Requirements		
	N <sub>initial</sub>	8	≤ 89.0	≤ 90.5
	N <sub>design</sub>	100	96.0	96.0
	N <sub>max</sub>	160	≤ 98.0	≤ 98.0
Voids in Mineral Aggregate, %min			14	13

Voids Filled with Asphalt, %	67 – 75	65 – 75
Dust to Binder Ratio	0.6 – 1.2	0.6 – 1.2
Minimum Tensile Strength Ratio (TSR), % (AASHTO T283)*	80%	70%

\* If the specified TSR is not met, an approved anti-stripping additive shall be incorporated into the mix at a rate recommended by the anti-strip manufacturer and approved by the City of Winnipeg, Research and Standards Engineer.

- 3.3.2 If, during the progress of the work, the mix design is found to be unsatisfactory for any reason or the quality assurance tests show deviation between the results and Mix Design Statement exceeding those identified in Table CW 3410.5, the asphalt supplier shall revise the mix design(s) and submit the proposed changes to the City of Winnipeg, Research and Standards Engineer for approval. The changes shall not exceed any of the limits specified in Table CW 3410.5 and shall meet the requirements specified in Tables CW 3410.1, CW 3410.2, CW 3410.3 and CW 3410.4 of this Specification; otherwise a new mix design shall be submitted.


**Table CW 3410.5: Maximum Deviation and Adjustments for JMF**

Mix Properties	Maximum Deviation Between the QA results and Mix Design Statement, %	Maximum JMF Adjustment, %
Asphalt Cement, % total sample weight	± 0.2	± 0.3
RAP	3%	5%
Passing 16.0 mm, 12.5 mm, 9.5 mm sieves	4.0%	5.0%
Passing 4.75 mm, 2.36 mm, 1.18 mm, 0.425 mm, 0.18 sieves	2.0%	3.0%
Passing 0.075 mm sieve	1.0%	1.0%

- 3.3.3 The mix design shall be valid for a maximum of twelve (12) months from when the mix design was developed. To extend use of the mix design beyond the initial twelve (12) months, a minimum of one test of each property listed in Section 3 shall be submitted to the City of Winnipeg, Research and Standards Engineer for approval. A full mix design shall be submitted every three years.

### 3.4 Plant Quality Control

- 3.4.1 The asphalt supplier shall be responsible for quality control of the plant to ensure all materials meet the approved mix designs. This information shall be submitted monthly and will be monitored by the City of Winnipeg, Research and Standards Engineer. Failure to submit the quality control results shall be cause for immediate suspension of the asphalt supplier.

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3.4.2 Quality Control testing shall be conducted by a laboratory certified in accordance with the requirements of Clause 3.1 and approved by the City of Winnipeg, Research and Standards Engineer.

3.4.3 The quality control program shall include all testing in accordance with Sections 2 and 3 of this Specification. A minimum of one test for aggregate gradation and asphalt materials shall be provided monthly during production.

3.4.4 Testing of any asphalt constituent materials may be undertaken by a testing laboratory designated by the City of Winnipeg, Research and Standards Engineer. The asphalt supplier shall be equipped with suitable means or a device for obtaining a representative sample of the asphalt cement. Any material which fails to comply with the requirements of this specification will be rejected. Material that has been rejected must be removed immediately by the asphalt supplier.

#### **4. SUPPLY OF MATERIALS**

##### **4.1 General**

4.1.1 All asphalt suppliers shall be approved by the City of Winnipeg, Research and Standards Engineer. A list of approved asphalt suppliers is available at the City of Winnipeg, Corporate Finance, Material Management Division website at:  
<https://legacy.winnipeg.ca/matmgt/spec/default.stm>

4.1.2 Unless otherwise specified, only use of stationary asphalt mixing plants will be permitted.


##### **4.2 Aggregate**

4.2.1 The different sizes of aggregate used shall be kept separate and adequate provision shall be made to keep them from becoming mixed or otherwise contaminated.

4.2.2 Where blending of materials from one or more sources and/or sizes, each material shall be placed in separate stockpiles.

4.2.3 Separate aggregate feeds capable of delivering a uniform flow of material to the dryer shall be provided for each separate stockpile of aggregate, RAP, supplementary material and VMA additive used to produce the asphalt mix.

4.2.4 The aggregates shall be dried at a minimum temperature of 135°C before mixing with the asphalt.

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#### **4.3 Asphalt Cement**

4.3.1 The asphalt cement shall be heated in a storage tank to a temperature that falls within the mixing temperature range recommended by the asphalt cement manufacturer. The mixing temperature shall be based on the temperature-viscosity curve for the asphalt cement and shall be sufficient to produce a uniform and homogeneous mixture in which all particles of the aggregate are thoroughly and uniformly coated. All information related to the asphalt cement shall be made available to the Contract Administrator upon request.

4.3.2 The asphalt cement shall be heated at the plant to a maximum temperature of 160°C before mixing with the aggregates. In no case shall the temperature of the asphalt and aggregates differ by more than 15°C when placed in the mixing drum.

#### **4.4 Transportation of Asphalt Paving Mix**

4.4.1 The mixture shall be transported from the plant to the site in trucks with metal bottoms previously cleaned of all foreign materials. If required, truck boxes shall be lightly coated with a uniform application of a non-petroleum-based asphalt release agent. The release agent shall conform to the Manufacturer's specifications and approved by the Contract Administrator. Excess lubricants shall be removed before trucks are loaded with asphalt. Release agents that adversely affect the quality or performance of the asphalt mix shall not be used.

4.4.2 The trucks shall be suitably insulated, as required. Each vehicle shall be equipped with a tarpaulin or other suitable covering material of sufficient size to overhang the truck box on three sides when the vehicle is fully loaded. Such tarpaulins shall be on the truck at all times and shall be used to cover the mixture completely as directed by the Contract Administrator.


### **5. EQUIPMENT**

#### **5.1 General**

5.1.1 All equipment shall be of a type approved by the Contract Administrator. The equipment shall be in good working condition for the duration of the Contract.

#### **5.2 Prime/Tack Coat Distributors**

5.2.1 For main lane paving, prime/tack coat shall be applied using self-propelled or tow-along pressure distributors capable of applying the product at the specified rate and in a

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continuous and uniform manner both longitudinally and transversely for the full lane width.

- 5.2.2 The distributors shall be equipped with a volume metering system of sufficient sensitivity to measure the quantity of tack/prime coat. The metering system shall be calibrated annually and all the certifications shall be made available to the Contract Administrator upon request. The distributors shall contain a thermometer for measuring the temperature of the tank contents.
- 5.2.3 All nozzles shall be set in the spray bar such that the nozzle slots make an angle between 15° to 30° with the longitudinal axis of the spray bar. Clogged nozzles shall be removed and cleaned with solvent before being used.
- 5.2.4 The use of a hand-held pressure applicator is acceptable only for prime/tack coating of small or irregularly shaped areas such as cuts, approaches, etc.

### **5.3 Mechanical Pavers**

- 5.3.1 Asphalt pavers shall be self-propelled and capable of laying a consistent lift which is true to the specified geometrics, cross-section and alignment. Pavers shall be equipped with hoppers and distributing screws capable of placing the hot mix evenly in front of the screeds.
- 5.3.2 Asphalt pavers shall be equipped with automatic longitudinal and transverse grade and slope controls which are capable of being operated from either side of the paver. The longitudinal grade control shall be readily adjustable for lift thickness in small increments without the necessity of stopping the paver.
- 5.3.3 The use of any paver that is experiencing difficulty in achieving a consistent and smooth lift in conformance with this Specification shall be discontinued until the Contractor demonstrates suitable corrective measures.

### **5.4 Rollers**

- 5.4.1 A rolling pattern shall be established and submitted by the Contractor to the Contract Administrator for approval before paving. The Contract Administrator shall approve any deviation from the rolling pattern during construction.
- 5.4.2 The Contract Administrator shall be provided with the mass of the rollers and may require they be weighed.
- 5.4.3 Rollers shall be classified into categories in accordance with Table CW 3410.6.

**Table CW 3410.6: Roller Classifications**

Type	Description	Classification	Minimum Mass, tonnes
Class S	Self-propelled steel-drum roller	S1	7
		S2	9
Class R	Self-propelled pneumatic-tired rollers Or Self-propelled combination roller	R1	8
		R2	15
Class V	Self-propelled vibratory roller	V1	4
		V2	5.2
		V3	5.8

- 5.4.4 Rollers shall be equipped with an automatic device that prevents the drum from vibrating unless the roller is moving and shall automatically halt vibration before coming to a stop. Frequency of vibration shall not be less than 2200 per minute. Vibration should not be used where there is potential to damage services and structures, or cause nuisance complaints as directed by the Contract Administrator.

## **6. CONSTRUCTION METHODS**

### **6.1 General**

- 6.1.1 All construction methods shall conform to this Specification, except as otherwise approved by the Contract Administrator.


### **6.2 Preparation of Base Course for Asphalt Pavement**

#### **6.2.1 General**


- 6.2.1.1 Placing of the asphalt mixture shall not commence until the construction of the sub-grade, sub-base and Base Course has been completed in accordance with the requirements of Specification CW 3110, and the installation of pavement and boulevard structures and appurtenances has been completed to the satisfaction of the Contract Administrator.

- 6.2.1.2 Where Base Course has raveled, the loose material shall be removed or recompact to a uniform surface.

#### **6.2.2 Prime Coat**

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- 6.2.2.1 Application of prime coat shall consist of flushing the final accepted Base Course layer with diluted emulsified asphalt. Use an equal volume of water to dilute the emulsified asphalt unless otherwise specified by the Contract Administrator. Surfaces to be prime coated shall be free of standing water and contamination, such as mud, loose aggregate, or debris.
- 6.2.2.2 The application rate of undiluted prime shall be between 0.5 to 1.0 L/m<sup>2</sup> and shall be approved by the Contract Administrator.
- 6.2.2.3 Prime coat shall be placed with sufficient time to cure prior to paving. Asphalt mix shall not be placed on prime coated areas until the prime coat is cured for a minimum of eight (8) hours or until prime coat cannot be tracked by foot traffic and tires. Paving and construction equipment shall not be permitted onto the prime coat until it has broken and set. Traffic shall not be permitted on the prime coat.
- 6.2.2.4 Prime coat shall be visually uniform. Prime coat shall be reapplied to areas of insufficient or non-uniform coverage. A hand spray can be used to apply prime coat to areas missed or inaccessible by the distributor. When prime coating is performed using hand spray, the visual appearance of such areas shall be consistent with the adjacent areas.
- 6.2.2.5 Prime coat shall not be applied when the weather is foggy or rainy or when the ambient temperature is less than 0°C. If the ambient temperature is less than 0°C as forecast by the nearest official meteorological office, the product used for prime coat shall be approved by the Contract Administrator.
- 6.2.2.6 Before applying the prime coat, the surface shall be flushed with water to create optimal conditions for adhesion, absorption control, and overall effectiveness of the prime coat and shall be approved by the Contract Administrator.
- 6.2.2.7 After curing, if any excess primer remains on the surface, the Contractor shall apply an approved sand where necessary to blot up the excess prime. The sand cover, where used, shall consist of clean, granular, mineral material approved by the Contract Administrator, all of which shall pass a 4.75 mm sieve. Only sufficient sand shall be spread to blot up excess prime and such areas shall be broomed to remove the excess sand prior to paving.
- 6.2.2.8 Prime coat shall be inspected and approved by the Contract Administrator before any asphalt is placed. Otherwise the asphalt shall be rejected by the Contract Administrator and shall be removed by the Contractor at his own expense.

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6.2.2.9 When traffic flow must be maintained, prime coat shall be applied to one direction of the roadway at a time. No prime coat shall be applied to the other direction of the roadway until the first direction has cured to accommodate vehicular traffic.

## **6.3 Preparation of Asphalt or Portland Cement Concrete Pavement for Asphalt Overlay**

### **6.3.1 Asphalt Surface Pavement**

6.3.1.1 A layer of the existing asphalt surface course shall be removed to such depth as is specified on the Drawings or as directed by the Contract Administrator. This work will be done and paid for in accordance with Specification CW 3450.

6.3.1.2 If the entire existing asphalt overlay is removed to the existing portland cement concrete pavement, the preparation of the existing Portland cement concrete pavement for asphalt overlay shall be in accordance with Section 6.4 of this Specification.

6.3.1.3 If the surface remaining after the removal of the specified layer of asphalt surface course is asphalt, the Contractor shall proceed to fill any remaining holes and depressions with asphalt paving mixture and compact these areas with a steel wheel roller before paving. The asphalt surface upon which the asphalt overlay is to be placed shall be approved by the Contract Administrator prior to placing asphalt.

6.3.1.4 At the locations designated on the Drawings and at any other locations designated by the Contract Administrator, the Contractor shall adjust existing structures and appurtenances, reconstruct sections of curb, seal all cracks and do other repair works as required. The adjustment of existing structures and appurtenances shall be done and paid for in accordance with Specification CW 3210, and the curb renewal, crack sealing and other repair works shall be done and paid for in accordance with Specifications CW 3230, CW 3240, and CW 3250.

### **6.3.2 Portland Cement Concrete Pavement Surface**

6.3.2.1 At the locations designated on the Drawings and at any other locations designated by the Contract Administrator, the Contractor shall adjust existing structures and appurtenances, reconstruct sections of concrete pavement, reconstruct sections of curb, seal all joints and cracks and do other repair works as required. The adjustment of existing structures and appurtenances shall be done and paid for in accordance with Specification CW 3210, and the pavement reconstruction, curb renewal, joint and crack sealing and other repair works shall be done and paid for in accordance with Specifications CW 3230, CW 3240, and CW 3250.

### **6.3.3 Tack Coat**



- 6.3.3.1 Application of tack coat shall consist of flushing the final accepted surface with undiluted emulsified asphalt. Surfaces to be tack coated shall be free of standing water and contamination, such as mud, loose aggregate, or debris.
- 6.3.3.2 Tack coat shall be required between layers of asphalt material and the application rate shall be in accordance with Table CW 3410.7, unless otherwise specified by the Contract Administrator.

**Table CW 3410.7: Application Rate for Tack Coat**

Surface Type	Application Rate, L/m <sup>2</sup>	Max Allowable Tolerance, L/m <sup>2</sup>
New Asphaltic pavement	0.25	0.03
Old Asphaltic pavement, Portland Cement Concrete, Milled Surface	0.35	0.05

- 6.3.3.3 Tack coat shall be placed with sufficient time to cure prior to paving. Asphalt mix shall not be placed on tack coated areas until the tack coat is cured for a minimum of three (3) hours or until tack coat cannot be tracked by foot traffic and tires. If trackless tack is used, the curing time can be reduced in accordance with the manufacturer's specifications unless otherwise specified by the Contract Administrator. Paving and construction equipment shall not be permitted onto the tack coat until it has cured and set. Traffic shall not be permitted on the tack coat.
- 6.3.3.4 Tack coat shall be visually uniform. Areas of insufficient or non-uniform tack coat coverage shall be re-sprayed. Hand spray can be used to apply tack material to areas missed or inaccessible by the distributor including curb areas attached to the asphalt. When tack coating is performed using hand spray, the visual appearance of such areas shall be consistent with the adjacent areas of machine applied material.
- 6.3.3.5 Tack coat shall not be applied when the weather is foggy or rainy or when the ambient temperature is less than 5°C. If the ambient temperature is less than 5°C as forecast by the nearest official meteorological office, the product used for tack coat shall be approved by the Contract Administrator.
- 6.3.3.6 Tack coat shall be inspected and approved by the Contract Administrator before any asphalt is placed. Otherwise the asphalt shall be rejected by the Contract Administrator and shall be removed by the Contractor at his own expense.

## **6.4 Placing Asphalt Paving Mixture**

### **6.4.1 General**

6.4.1.1 The Contract Administrator shall approve the surface upon which new asphalt is to be placed before paving operations may begin.

6.4.1.2 The mixture shall be delivered to the job and placed at a temperature that allows for proper compaction, taking into consideration the weather conditions, the temperature of the surface on which the mixture is to be placed, and the thickness of the lift. In no case shall the asphalt mixture be placed at a temperature lower than the values specified in Table CW 3410.8.

**Table CW 3410.8: Limits for Asphalt Mixes Temperatures**

Asphalt Type	Temperature for Asphalt before Placing, °C		Minimum Temperature During Rolling, °C
	Minimum	Maximum	
HMA	125	160	90
WMA	115	155	80

6.4.1.3 Unless otherwise permitted by the Contract Administrator, the mixture shall be spread by means of a mechanical self-powered paver capable of spreading the mixture true to the line, grade and crown required.

6.4.1.4 Pavers shall be equipped with hoppers and distributing screws of the reversing type to place the mixture evenly in front of adjustable screeds. The mixture shall be dumped in the centre of the hoppers and care exercised to avoid overloading and slopping over of the mixture upon the base.

6.4.1.5 When laying the mixture, pavers shall operate so as to provide as continuous an operation as possible at a speed of between three meters and six meters per minute. They shall be equipped with a quick and efficient steering device and shall have forward and reverse travelling speeds of not less than 25 meters per minute.

6.4.1.6 Pavers shall be capable of spreading the mixture, without segregation, in thicknesses as specified on the Drawings or approved by the Contract Administrator. Placement widths shall vary from a minimum of 1.5 meters to a maximum of 4.5 meters unless approved by the Contract Administrator. They shall be equipped with blending or joint levelling devices for smoothing and adjusting all longitudinal joints between strips or courses of the same thickness. Pavers shall be equipped with screeds.

6.4.1.7 The term screed includes any strike-off device operated at workable temperature without tearing, shoving or gouging the finished surface.

6.4.1.8 The minimum and maximum thickness of a compacted lift for reconstruction shall be in accordance with Table CW 3410.9, unless otherwise specified by the Contract Administrator.

**Table CW 3410.9: Lift Thicknesses**

Mix Type	Thickness, mm	
	Minimum	Maximum
MS1	35	55
MS2	50	75
SP1	35	55
SP2	50	75

6.4.1.9 No construction traffic shall travel on the finished surface until the surface has cooled to a temperature of 60°C or less.

#### **6.4.2 Main Line Paving**

6.4.2.1 Main line paving shall include the placement of bottom and top lifts for asphalt pavements and overlays utilizing mechanical pavers with automatic grade control for:

- 6.4.2.1.1 All through and parallel turning lanes greater than 15.0 meters in length;
- 6.4.2.1.2 Other lanes greater than 15.0 metres in length; and,
- 6.4.2.1.3 Intersections through which the main line continues.

6.4.2.2 Main line paving with mechanical pavers shall utilize automatic grade control, except for:

- 6.4.2.2.1 Intersections through which the main line continues and where traffic must be maintained; and,
- 6.4.2.2.2 The side of the paver adjacent active traffic.

6.4.2.3 Hand placement shall be minimized. Hand placed asphalt shall be spread and compacted to match the finished grade to the satisfaction of the Contract Administrator.

#### **6.4.3 Tie-Ins and Approaches**

6.4.3.1 Tie-Ins and approaches shall include the placement of leveling and surface courses for pavements and overlays for all areas other than main line paving lanes. This includes intersecting side streets to the main road under construction except as noted in Section 6.4.2 of this specification, intersection turnouts, right turn cut-offs, median openings, and private approaches. Tie-ins include miscellaneous asphalt for temporary ramping, sidewalk in-fill and isolations.

6.4.3.2 Tie-Ins and approaches shall utilize mechanical pavers where possible with or without automatic grade control, or hand methods as approved by the Contract Administrator.

6.4.3.3 Hand placement shall be minimized. Hand placed asphalt materials shall be spread and compacted to match the finished grade to the satisfaction of the Contract Administrator.

#### 6.4.4 Weather Limitations

6.4.4.1 Asphalt shall be laid upon a surface which is dry, clean and free from standing water, and only when weather conditions are suitable in accordance with Table CW 3410.10.

**Table CW 3410.10: Minimum Placement Temperature for Asphalt**

Asphalt Type	Location	Lift Thickness, mm	Temperature*, C°	
			Wind Speed, km/hr > 10	Wind Speed, km/hr ≤ 10
HMA	Top Lift	< 50	10°C	6°C
		≥ 50	8°C	6°C
	Other than top lift	> 50	2°C	2°C
WMA	Top Lift	< 50	4°C	0°C
		≥ 50	2°C	0°C
	Other than top lift	> 50	0°C	-2°C


\*Temperature shall be based on the nearest official meteorological office. The Contract Administrator may confirm the temperature by measuring the temperature in the shade and 150 mm above the surface.

6.4.4.2 Asphalt shall be placed on unfrozen material, free of water, snow, and ice. Frozen material will be identified by measuring the surface temperature using infrared thermometers or similar devices. If the surface temperature is less than or equal to 0°C, the material will be considered frozen. The Contractor shall use suitable heating methods to maintain the surface temperature above 0°C. Salt shall not be used to thaw ice, snow, or frost.

6.4.4.3 Paving shall not be permitted while there is frost within 750 mm of the surface upon which the asphalt is to be placed. Asphalt shall only be laid under conditions that the Contract Administrator determines to be conducive to obtaining the specified results.

6.4.4.4 Notwithstanding the above, when weather conditions are unfavourable, or are likely to become unfavourable, paving operations shall be suspended.

## 6.5 Joints

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### **6.5.1 General**

- 6.5.1.1 Joints shall be smooth, well bonded and tightly sealed. Joints shall conform smoothly and accurately to adjacent pavement surfaces such that when tested with a 3-metre straight edge placed across the joint the distance between the straight edge and the surface of the pavement shall not exceed 5 mm at any point.
- 6.5.1.2 When matching a compacted joint, the depth of the uncompacted lift shall be set to allow for compaction. The paver screed shall overlap the adjoining lift by no more than 25 mm.
- 6.5.1.3 On straight sections the joint line shall not deviate from a straight line by more than 75 mm at any point. On curved or tapered sections, the joint shall be shaped so as to be as smooth as possible. Jagged, stepped or wandering edges shall be reshaped to a smooth line, to the satisfaction of the Contract Administrator, before the adjacent lift is laid.


### **6.5.2 Location of Joints**

- 6.5.2.1 The location of joints shall be subject to the approval of the Contract Administrator and shall conform to the following requirements:
  - 6.5.2.1.1 Longitudinal joints shall not be located within 150 mm of a longitudinal joint in any underlying pavement structure.
  - 6.5.2.1.2 Transverse joints shall not be located within two (2) meters of any other transverse joint in the same paving course or within one (1) meter of a transverse joint in any underlying pavement structure.
- 6.5.2.2 Longitudinal cold joints are to be avoided wherever possible. Transverse joints shall be established with sufficient frequency to allow the full width of the paving course to be placed in a single shift. No paving lane shall progress more than 500 m beyond the end of an adjacent paving lane in the same course without the prior approval of the Contract Administrator.

### **6.5.3 Preparation of Joints**

#### **6.5.3.1 Hot Joints**

- 6.5.3.1.1 Hot joints shall be considered to be those longitudinal joints between adjacent mats in which the previously laid lift retains sufficient heat, above 90 °C for HMA and 75 °C for WMA, to facilitate good bonding and sealing of the joint. The edge of the previously laid lift shall be inspected prior to laying

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the new mat. Any areas not conforming to line and grade or having a rounded-off top corner shall be cut out to the full depth of the lift to a minimum width of 100 mm and replaced with fresh material and compacted when laying the new mat.

- 6.5.3.1.2 If the previously laid lift temperature is below 90 °C for HMA and 75 °C for WMA but higher than 60 °C, then the joints shall be painted with a thin uniform tack coat before the new asphalt is placed against it.

#### 6.5.3.2 Cold Joints

- 6.5.3.2.1 Cold joints shall be considered to be those longitudinal and transverse joints where the existing adjacent pavement lift is at or below 60 °C. Transverse joints shall be cut back to a straight line for the full depth and width of the mat. The transverse joint shall be cut back to a location such that the pavement immediately before the joint, where checked with a 3-metre straight edge, exhibits no tapering or rounding.
- 6.5.3.2.2 Longitudinal edges of existing mats shall be inspected before laying the new mat. Any areas not conforming to line and grade shall be cut out full depth to a minimum width of 150 mm and replaced with fresh material and compacted when laying the new mat. Any areas with a rounded corner shall be cut back to the full depth of the lift to form a vertical face with a square corner.
- 6.5.3.2.3 Joints against existing asphalt pavements shall be prepared by saw cutting, cold planning or other method(s) approved by the Contract Administrator, such that the face of the existing pavement is vertical with a square corner.
- 6.5.3.2.4 All contact surfaces of cold joints shall be painted with a uniform coat of tack before the new asphalt is placed against them.

#### 6.5.4 Construction of Joints

- 6.5.4.1 Fresh asphalt shall not be placed against the existing lift until the joint preparation has been completed in accordance with 6.5.3 and is approved by the Contract Administrator.
- 6.5.4.2 The fresh lift shall be laid to an elevation such that, when compacted, it will conform accurately to the grade of the existing pavement. Wherever practicable, this shall be done using mechanical pavers.
- 6.5.4.3 Joints shall always be rolled before the remainder of the mat. Wherever practicable the joint shall be rolled with the roller travelling parallel to the joint and with a

minimum of seventy-five (75%) percent of the width of the main roller(s) supported on the existing mat.

## 6.6 Asphalt Patching

- 6.6.1 Remove and replace existing asphalt pavements adjacent to proposed or renewed sidewalks and concrete approaches for grade adjustment to ensure drainage and rideability are maintained. Areas to be considered as asphalt patches shall be less than 1.5 meters in width. The locations requiring asphalt patching shall be shown on the Drawings or as directed by the Contract Administrator.
- 6.6.2 The Contractor shall saw cut the asphalt pavement full-depth along the limits designated. The asphalt pavement shall be removed and disposed of in accordance with CW 3110. Upon removal of asphalt, the existing base materials shall be levelled and compacted. The asphalt shall match the thickness of the existing pavement. The material shall be placed and compacted by acceptable methods in accordance with Clause 6.7 of this specification to the satisfaction of the Contract Administrator.
- 6.6.3 All costs incurred for asphalt removal, compaction of existing base materials and placement of Base Course and asphalt materials shall be included in the unit price for "Construction of Asphalt Patches"

## 6.7 Compaction of Asphalt Paving Mixture


### 6.7.1 General

- 6.7.1.1 A rolling pattern shall be established by the Contractor and approved by the Contract Administrator. The Contract Administrator shall approve any deviation from the rolling pattern.

- 6.7.1.2 The minimum number of rollers is identified in Table CW 3410.11.

**Table CW 3410.11: Maximum Rates Per Paver and Roller Sequence**

Asphalt Placement, tonnes/hr	Minimum Roller Combinations per Paver Breakdown + Intermediate + Finish*
≤ 100	S2 + R1 + S1 V1 + R1 + S1
> 100	S2 + 2 x R1 + S1 S2 + R2 + S1 V2 + 2 x R1 + S1 V2 + R2 + S1

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\*No vibration shall be used when paving bridge decks. If Class V rollers are used, they shall be in static mode. The V3 roller can be used as a substitute for the V2 roller.

6.7.1.3 The operating speed of rollers shall not exceed 5 km/hr and shall be slow enough to avoid undue displacement of the asphalt. Rollers shall operate with the drive wheel forward in the direction of paving.

6.7.1.4 Any displacement occurring as a result of reversing the direction of the roller or any other cause shall be corrected. Rolling shall proceed continuously until all roller marks are eliminated and no further compression is possible. To prevent adhesion of the mixture to the roller, the wheels shall be kept properly moistened with water, limewater, or an approved detergent. Excess moisture will not be permitted.

## **6.7.2 Rolling procedures**

6.7.2.1 Compaction of the paving mixture shall consist of three (3) separate rolling operations as follows:

6.7.2.1.1 Breakdown rolling: Rolling shall start longitudinally at the sides and proceed toward the centre of the pavement overlapping on successive passes by at least 150 mm. Breakdown rolling shall consist of at least two complete coverages by the roller. Delays in rolling freshly placed asphalt shall not be permitted.

6.7.2.1.2 Intermediate rolling shall immediately follow breakdown rolling. Passes shall be arranged to ensure overlapping successive tire paths. The rolling operation shall prevent pick-up of the mixture on the tires.


6.7.2.1.3 Final rolling shall be undertaken while the paving mixture is still warm enough to eliminate roller marks. Where the width permits, the asphalt shall be rolled diagonally in two directions, the second diagonal rolling crossing the first rolling direction. Final rolling shall start longitudinally at the high edge and proceed towards the lower edge of the mat. Final rolling shall be continue until there is no evidence of consolidation.

## **6.8 Compaction of Irregular Areas**

6.8.1 Along curbs, manholes and similar structures and at all places not accessible to rollers, compaction shall be performed by plate compactors to the satisfaction of the Contract Administrator. All joints around these structures shall be effectively sealed.

6.8.2 The asphalt may be heated to a maximum temperature of 120°C to facilitate the compaction where approved by the Contract Administrator.



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## **6.9 Requirements After Final Rolling**

- 6.9.1 After final rolling the surface of each lift shall be smooth and true to the established crown and grade. Any low or defective spots shall be remedied by milling to a minimum depth of 40 mm or as directed by the Contract Administrator, and replacing it with a fresh mixture.
- 6.9.2 The corrected area shall have a smooth transition to the surrounding pavement without negatively affecting any adjacent sections, impairing the functionality and the service life of the area.

## **6.10 Filling of Core Holes**

- 6.10.1 Where cores are collected, the Contractor shall patch each core hole immediately with an approved cold asphalt product.
- 6.10.2 The patch shall be finished flush with the surface. Immediately before filling, the surface of each hole shall be thoroughly cleaned to ensure a proper bond. After filling each hole, all excess material shall be removed from the surface.
- 6.10.3 Where HMA or WMA are not available, use only those materials listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Material Management Internet site at:  
<https://legacy.winnipeg.ca/matmgt/spec/default.stm>

## **6.11 Surface Tolerance**

- 6.11.1 The surface of the asphalt pavement shall be checked with a 3-metre straight edge and be within  $\pm 5$  mm from the surrounding area. Areas that do not meet these tolerances shall be corrected to the satisfaction of the Contract Administrator.
- 6.11.2 Where the posted speed limit is greater than 60 km/hr, the Contract Documents shall identify smoothness requirements for longitudinal profile of the pavement surface. The smoothness requirements shall be approved by the City of Winnipeg, Research and Standards Engineer.

## **6.12 Opening to Traffic**

- 6.12.1 In no case shall traffic or construction equipment be allowed on the asphalt pavement until completion of quality assurance testing by the Contract Administrator and until the

completed pavement has cooled to atmospheric temperature or to such other temperature, as may be approved by the Contract Administrator, that will ensure no deformation of the pavement surface under traffic loading.

6.12.2 The Contract Administrator's decision as to when the pavement will be opened to traffic shall be final. Prior to opening to traffic, the pavement shall be clean and free of aggregates or other deleterious materials on the surface.

## **7. QUALITY ASSURANCE**

### **7.1 General**

7.1.1 Tests used for purposes of assessing compliance with this specification or for acceptance of any products shall be conducted by a certified laboratory approved by the City of Winnipeg, Research and Standards Engineer.

7.1.2 Field sampling and testing of asphalt shall be performed by a certified person.

7.1.3 The Contract Administrator shall be allowed access to all sampling locations and reserves the right to request quality assurance sample(s) at any time.

7.1.4 Samples shall be protected during transportation from any exposure to adverse conditions.

7.1.5 If any sample shows distinct evidence of improper sampling, handling, or testing, the test shall be disregarded and a new sample shall be collected.


7.1.6 Testing in addition to the requirements of this Specification shall be as directed by the Contract Administrator.

### **7.2 Testing Frequency**

7.2.1 Asphalt shall be sampled for acceptance in accordance with Table CW 3410.12.

**Table CW 3410.12: Frequency of Sampling and Testing of Asphalt**

Asphalt Type	Quantity (tonnes)	Minimum Frequency
MS1, MS2	< 150	2 test/day
	150 - 300	3 tests/day
	> 300	2 test/150 tonnes
SP1, SP2	--	2 test/150 tonnes

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7.2.2 Additional testing shall be as directed by the Contract Administrator.

7.2.3 Copies of all test results shall be sent to the City of Winnipeg, Research and Standards Engineer and to the Contract Administrator.

7.2.4 Copies of asphalt plant scale tickets shall be provided to the Contract Administrator.

### **7.3 Acceptance Criteria**

7.3.1 The Contractor shall reimburse the City for any additional costs the City incurs as a result of failed tests.

7.3.2 Where the work is not funded or administered by the City of Winnipeg or their representative, the party approved by the City of Winnipeg to execute the work will be responsible for making pay adjustments to the City of Winnipeg.

7.3.3 All corrective actions shall be performed at the Contractor's expense.

7.3.4 Acceptance of asphalt shall be based on the following:

7.3.4.1 Visual Inspection:

7.3.4.1.1 The Contract Administrator may reject visually defective asphalt areas based on, but not limited to the following defects: flushing, bleeding, segregation, fat spot, surface damage, and surface contamination. Such defective areas shall be removed and replaced at the Contractor's expense.

7.3.4.2 Bituminous Mix Properties:

7.3.4.2.1 Air Voids: If the measured air voids fall outside the limits specified in Clause 3.3 of this Specification, the Contract Administrator shall apply a payment adjustment in accordance with Table CW 3410.13 against the entire Lot represented by the failed test(s).

**TABLE CW 3410.13 – Payment Adjustment for Air Voids**

Asphalt Type	Average of the Failed Tests	Percent of Price Reduction %
MS1, MS2, SP1, SP2	≤ 0.5%	0.0
	0.5% to 1%	0.0*
	> 1%	Remove and replace at Contractor's expense

\*Paving shall be suspended until necessary adjustments are made and approved by the Contract Administrator.

- 7.3.4.2.2 Voids in Mineral Aggregate (VMA): If the measured voids in mineral aggregate falls outside the limits specified in Clause 3.3 of this Specification, the Contract Administrator shall apply a payment adjustment in accordance with Table CW 3410.14 against the entire Lot represented by the failed test(s).

**TABLE CW 3410.14 – Payment Adjustment for Voids in Mineral Aggregate**

Average of the Failed Tests	Percent of Price Reduction %
≤ 0.5%	0.0
0.5% to 1%	0.0*
1% to 2%	
> 2%	Remove and replace at Contractor's expense

\*Paving shall be suspended until necessary adjustments are made and approved by the Contract Administrator.

- 7.3.4.2.3 Asphalt Cement Content: If the measured asphalt cement content falls outside the limits specified in Clause 3.3 of this Specification, the Contract Administrator shall apply a payment adjustment in accordance with Table CW 3410.15 against the entire Lot represented by the failed test(s).

**TABLE CW 3410.15 – Payment Adjustment for Asphalt Cement Content**

Average of the Failed Tests	Percent of Price Reduction %
≤ 0.15%	0.0
0.15% to 0.5%	0.0*
> 0.5%	Remove and replace at Contractor's expense

\*Paving shall be suspended until necessary adjustments are made and approved by the Contract Administrator.

- 7.3.4.2.4 Gradation: If the gradation falls outside the limits specified in Table CW 3410.1, the Contract Administrator shall apply a payment adjustment in accordance with Table CW 3410.16 against the entire Lot represented by the failed test(s).

**TABLE CW 3410.16 – Payment Adjustment for Gradation**

Percent Passing Outside the JMF for Each Sieve			Percent of Price Reduction %
19, 16, 12.5, 9.5	4.75, 2.36, 1.18, 0.6, 0.15	0.075	
<2	<1	-	0.0
2-4	1-2	<1	0.0*
> 4	> 2	≥ 1	Remove and replace at Contractor's expense

\*Paving shall be suspended until necessary adjustments are made and approved by the Contract Administrator.

#### 7.3.4.3 Density:

- 7.3.4.3.1 Density testing shall be conducted at least once every 150 m<sup>2</sup>. The Contract Administrator shall ensure that the density tests cover the full width of the construction area.

- 7.3.4.3.2 An area is deemed unacceptable if the compaction does not meet all of the following:

7.3.4.3.2.1 The average density results shall be between 93% and 95% of the theoretical maximum density; and,

7.3.4.3.2.2 No individual location shall be less than 90% or higher than 98% of the theoretical maximum density.

- 7.3.4.3.3 Nuclear density test gauge results shall be used to assess in-place density. When density test results do not meet the minimum percent density specified herein, a coring and testing program can be undertaken to verify density percentage of the mix by Core Density Testing. If core density results confirm the Nuclear density results, the Contractor shall reimburse the City

for any additional costs associated with coring, transmittal of cores, filling of cores and testing the City incurs as a result of failed tests.

- 7.3.4.3.4 The Contract Administrator shall apply a payment adjustment in accordance with Table CW 3410.17 against the entire lot represented by the failed test(s).

**TABLE CW 3410.17 – Payment Adjustment for Density**

Average of the Density Tests	Percent of Price Reduction %
> 98%	Remove and replace at Contractor's expense
97.9% to 97.1%	0%*
97% to 93%	0%
92.9% to 90%	0%*
< 90%	Remove and replace at Contractor's expense

\*Paving shall be suspended until necessary adjustments are made and approved by the Contract Administrator.

#### 7.3.4.4 Segregation and Surface Defects

- 7.3.4.4.1 Surface defects include but are not limited to: gouges, slippage, cracking, tearing, pocketing, blistering, shoving, wash boarding, surface depressions or surface defects shall be repaired to the satisfaction of the Contract Administrator.

#### 7.3.4.5 Asphalt Thickness:

- 7.3.4.5.1 A Lot is deemed unacceptable if the asphalt thickness does not meet all of the following:

7.3.4.5.1.1 The average thickness is less than the required thickness; and,

7.3.4.5.1.2 No individual thickness shall be less than 90% of the required thickness.

- 7.3.4.5.2 The Contract Administrator shall apply a payment adjustment in accordance with Table CW 3410.19 against the entire Lot represented by the insufficient thickness.

**TABLE CW 3410.19 – Payment Adjustment for Pavement Thickness**

Average Thickness	Percent of Price Reduction %
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Less than specified thickness but more than 90% of specified thickness	0.0*
Less than 90% of specified thickness	Remove and replace at Contractor's expense

\*Paving shall be suspended until necessary adjustments are made and approved by the Contract Administrator.

## 8. MEASUREMENT AND PAYMENT

### 8.1 Construction of Asphalt Pavement

8.1.1 Construction of asphalt pavement will be measured and paid for at the Contract Unit Price per tonne for the "Items of Work" listed here below, measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the work included in this Specification.

#### Items of Work:

- i. Construction of Main line Paving (\*)
- ii. Construction of Tie-ins and Approaches (\*)

\* Specify either MS1, MS2, SP1, or SP2

8.1.2 The weight to be paid for shall be the total number of tonnes placed and compacted in accordance with this Specification and accepted by the Contract Administrator, as measured on a certified weigh scale.

### 8.2 Construction of Asphalt Patches

8.2.1 Construction of asphalt patches will be measured and paid for at the Contract Unit Price per square meter for "Construction of Asphalt Patches", measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described and all other items incidental to the work included in this Specification.