



THE CITY OF WINNIPEG

TENDER

TENDER NO. 667-2026

2026 PAVEMENT RESURFACINGS (CCDC 4 – 2023)

TABLE OF CONTENTS

PART C - CONTRACT FORMAT AND SUPPLEMENTARY CONDITIONS

C0. Contract Format	1
C1. Supplementary Conditions	1

PART D - GENERAL REQUIREMENTS

General

D1. General Conditions	1
D2. Scope of Work	1
D3. Definitions	2
D4. Consultant	2
D5. Contractor's Supervisor	2
D6. Furnishing of Documents	2

Submissions

D7. Authority to Carry On Business	2
D8. Safe Work Plan	2
D9. Insurance	3
D10. Subcontractor List	3
D11. Construction Equipment List	3
D12. Detailed Work Schedule	3

Schedule of Work

D13. Commencement	4
D14. Restricted Work Hours	5
D15. Work By Others	5
D16. Sequence of Work	5
D17. Construction Days	5
D18. Ready-for-Takeover	6
D19. Total Performance	6
D20. Liquidated Damages	6
D21. Scheduled Maintenance	6

Control of Work

D22. Job Meetings	6
D23. The Workplace Safety and Health Act (Manitoba) – Qualifications	7
Payment	7
D24. Fuel Price Adjustment	7

Warranty

D25. additional Warranty	7
Form J: Subcontractor List	8
Form K: <i>Construction Equipment</i>	9

PART E - ADDITIONAL SPECIFICATIONS

General

E1. Applicable Specifications and Drawings	1
E2. Mobilization and Demobilization Payment	1
E3. Office Facilities	3
E4. Protection Of Existing Trees	3
E5. Traffic Control	4
E6. Traffic Management	4
E7. Refuse and Recycling Collection	5
E8. Water Obtained From the City of Winnipeg	5
E9. Surface Restorations	6
E10. Installation of Dowel Assemblies for 200 mm Reinforced Concrete Pavement	6
E11. Construction of Monolithic Curb and Concrete Sidewalks	6
E12. Asphalt Special Provision	7

E13. Applicable Standard Details	29
E14. Sidewalk Expansion Joints	30
E15. Barrier Curb and Arched Gutter Inlet Frame, Box and Inlet Cover	31
E16. Operating Constraints for Work in close Proximity to Critical Water Infrastructure	32

PART C - CONTRACT FORMAT AND SUPPLEMENTARY CONDITIONS

C0. CONTRACT FORMAT

- C0.1 The form of *Contract* for this *Project* will be the Standard Construction Document CCDC 4 – 2023 Unit Price Contract, endorsed by the Canadian Construction Documents Committee.
- C0.2 If the Supplementary Conditions conflict with other terms in the Standard Construction Document CCDC 4 – 2023 Unit Price Contract, the Supplementary Conditions shall take precedence and prevail.

C1. SUPPLEMENTARY CONDITIONS

These Supplementary Conditions contain modifications, deletions and additions to the Agreement Between *Owner* and *Contractor*, the Definitions and the General Conditions of Unit Price Contract, CCDC 4 – 2023. Where any part of the *Contract* is modified or deleted by these Supplementary Conditions, the unaltered provisions remain in effect.

AGREEMENT BETWEEN OWNER AND CONTRACTOR

1. Article A-1 The Work

- .1 Delete Article A-1.3 and replace with the following:

Commence the *Work* in the date specified in the Award Letter, subject to adjustment in the *Contract time* as provided for in the *Contract Documents*, attain *Ready-for-Takeover* within the number of consecutive *Construction Days* specified in the *General Requirements*.

2. Article A-5 Payment

- .1 Delete Article A-5.2 and replace with the following:

5.2 Interest on any amount properly owing to either the *Owner* or *Contractor* under the *Contract* and not paid when due shall be calculated and payable at the prejudgment interest rate prescribed from time to time under *The King's Bench Act* (Manitoba), calculated from the date such amount became due until the date of payment.

3. Article A-9

- .1 Add new Article A-9 – *Owner Policies*:

ARTICLE A-9 OWNER POLICIES

9.1 The *Contractor* shall, and shall cause its employees, the *Subcontractors* and its employees to, comply with all policies, rules and regulations established by the *Owner* which apply to any contractors who attend a facility or work site, including the *Place of the Work* operated by the *Owner*, including those policies, rules and regulations set out in the *Owner's Strategic Plans and Policies* webpage <https://www.winnipeg.ca/city-governance/strategic-plans-policies>, as may be supplemented or modified by the *Owner* from time to time. The *Contractor* must also review and comply with the City's Supplier Code of Conduct. This document is located at: <https://www.winnipeg.ca/media/4891>.

9.2 Where a change to the policies, rules or regulations referred to in Article A-9.1 requires a change to the *Work* giving rise to a *Change Order* or *Change Directive*, such change shall be authorized and valued in accordance with GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER, and GC 6.3 – CHANGE DIRECTIVE, as applicable.

4. Article A-10

- .1 Add a new Article A-10 – Liquidated Damages for Delay:

ARTICLE A-10 LIQUIDATED DAMAGES FOR DELAY

10.1 The *Contractor* acknowledges that timely performance of the *Work* is of utmost importance to the *Owner*, and that the *Owner* requires that contractual milestones, including *Ready-for-Takeover* and *Total Performance* (as defined in the *General Requirements*), be achieved within the *Contract Time*. If the *Contractor* fails to achieve one of the milestones on or before the date stipulated by the *Contract Documents* (as such date may be adjusted as provided in the *Contract Documents*), the *Contractor* shall be liable for and shall pay to the *Owner* liquidated damages as identified in the *General Requirements*.

The *Owner* and the *Contractor* acknowledge and agree that the amounts set forth in the *General Requirements* are a genuine and reasonable pre-estimate of the *Owner's* damages for the *Contractor's* failure to achieve critical stages, *Ready-for-Takeover* or completion of all *Work* within the *Contract Time* (all as applicable). The *Owner* shall be entitled to retain any amounts that become payable by the *Contractor* pursuant to this Article A-10.1 from moneys otherwise payable to the *Contractor* under the *Contract*.

5. Article A-11

.1 Add new Article A-11 – Confidentiality and Ownership of Information:

ARTICLE A-11 CONFIDENTIALITY AND OWNERSHIP OF INFORMATION

11.1 The *Contractor* agrees to ensure that it shall, both during or following the term of the *Contract*, maintain the confidentiality and security of all *Confidential Information*, and that it shall not directly or indirectly disclose, destroy, exploit, or use any *Confidential Information* except where required by law, without first obtaining the written consent of the *Owner*. The *Contractor* may disclose any portion of the *Contract Documents*, or any other information provided to the *Contractor* by the *Owner* to any *Subcontractor* or *Supplier* if the *Contractor* discloses only such information as is necessary to fulfill the purposes of the *Contract* and the *Contractor* has included a commensurate confidentiality provision in its contract with the *Subcontractor* or *Supplier*. The *Contractor* shall not publish issue or make any statements or news release, electronic or otherwise concerning the *Contract*, the *Work*, or the *Project*, without the express written consent of the *Owner*.

11.2 The *Contract*, all deliverables produced or developed, and information provided to or acquired by the *Contractor* are the property of the *Owner* and shall not be appropriated for the *Contractor's* own use, or for the use of any third party.

6. Article A-12 General

.1 Add new Article A-12 GENERAL as follows:

ARTICLE A-12 GENERAL

12.1 Good Faith

The *Contractor* declares that, in entering into the *Contract*: (a) it does so in good faith and that to the best of its knowledge no member of *Council* or any officer or employee of the *Owner* has any pecuniary interest, direct or indirect, in the *Contract* which has not been disclosed to and approved by the authority having jurisdiction; (b) it has not participated in any collusive scheme or combine; (c) the *Contractor* and any proposed *Subcontractor(s)* conduct their respective business in accordance with established international codes embodied in the *United Nations Universal Declaration of Human Rights* (UDHR) and the *International Labour Organization* (ILO) conventions as ratified by Canada; (d) it shall forfeit all claims under the *Contract* as well as refund to the *Owner* any monies paid to it, beyond its actual proven expenses for *Work* done, if any of the forgoing declarations are shown to be false.

12.2 Unfair Labour Practices

.1 The *Owner* is committed and requires the *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 *International Labour Organization* (ILO) eight (8) fundamental conventions and the *United Nations Universal Declaration of Human Rights* which includes child and forced labour.

.2 Upon request from the *Consultant*, 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.). Failure to provide the evidence required hereunder may be determined to be an event of default.

.3 In the event that the *Owner*, in its sole discretion, determines the *Contractor* to have violated the requirements of this ARTICLE A-12.2, it will be considered a fundamental breach of the *Contract* and the *Contractor* shall pay to the *Owner* a sum specified by the *Consultant* in writing ("*Unfair Labour Practice Penalty*"). Such a violation shall also be considered an event of default. The *Unfair Labour Practice Penalty* shall be such a sum as determined appropriate by the *Owner*, having due regard to the gravity of the violation, any cost of obtaining replacement goods/services or rectification of the breach, and the impact upon the *Owner's* reputation. In no instance shall the *Unfair Labour Practice Penalty* exceed the total of twice the *Contract Price*. The obligations and rights conveyed by this clause survive the expiry or termination of this *Contract*.

General Provisions

- 12.3 The *Contractor* is an independent contractor and not an agent or representative of the *Owner*. The *Contractor* shall be solely responsible for any and all payments and/or deductions required to be made including those required for the Canada Pension Plan, Employment Insurance, workers' compensation and federal and provincial income tax.
- 12.4 Time is of the essence in the performance of this *Contract*.
- 12.5 In addition to those provisions of the *Contract Documents* that are expressly stated to survive the termination or expiration of this *Contract*, the provisions of this *Contract* that are by their nature intended to survive termination or expiration of this *Contract* shall continue in full force and effect subsequent to and notwithstanding termination or expiration until or unless they are satisfied.
- 12.6 Where the *Contractor* consists of more than one person, the obligations of the *Contractor* shall be joint and several.
- 12.7 Each provision of this *Contract* shall be valid and enforceable to the fullest extent permitted by law. If any provision of this *Contract* is declared invalid, unenforceable or illegal by the courts of a competent jurisdiction, such provision may be severed and such invalidity, unenforceability or illegality shall not prejudice or affect the validity, enforceability and legality of the remaining provisions of this *Contract*. Further, any such severed provision shall be modified only to the extent necessary to render it enforceable and shall then become binding on the parties.

Article A-13 Contract Formation

- .1 Add new Article A-13 – CONTRACT FORMATION as follows:

ARTICLE A-13 CONTRACT FORMATION

- 13.1 The *Contract Documents* include the *Award Letter*. This *Contract* was formed upon the receipt of the *Award Letter* by the *Contractor*.
- 13.2 This *Contract* may be executed in multiple counterparts, each of which shall be deemed an original agreement and both of which shall constitute one and the same agreement. The counterparts of this *Contract* may be executed and delivered by facsimile or other electronic signature by either of the parties and the receiving party may rely on the receipt of such document if the original had been received.

DEFINITIONS

7. Definitions
- .1 Amend the definition of "*Consultant*" by deleting the second sentence.
- .2 Amend the definition of "*Contract Documents*" by adding "in writing" at the end of the sentence.
- .3 Amend the definition of "*Supplemental Instruction*" by adding "*Owner* or the" before "*Consultant*".
- .4 Add the following definitions:

Award Letter

Award Letter means the letter sent by the *Chief Administrative Officer* of the *Owner* or their delegated authority notifying the *Contractor* that the *Contract* has been awarded to the *Contractor*.

Confidential Information

Confidential Information means all the information or material of the *Owner* that is of a proprietary or confidential nature, whether it is identified as proprietary or confidential or not, including but not limited to information and material of every kind and description which is communicated to or comes into the possession or control of the *Contractor* at any time, but *Confidential Information* shall not include information that:

- a. is or becomes generally available to the public without fault or breach on the part of the *Contractor*, including without limitation breach of any duty of confidentiality owed by the *Contractor* to the

- Owner* or to any third party, but only after that information becomes generally available to the public;
- b. the *Contractor* can demonstrate to have been rightfully obtained by the *Contractor* from a third party who had the right to transfer or disclose it to the *Contractor* free of any obligation of confidence;
 - c. the *Contractor* can demonstrate to have been rightfully known to or in the possession of the *Contractor* at the time of disclosure, free of any obligation of confidence; or
 - d. is independently developed by the *Contractor* without the use of any *Confidential Information*.

Council

Council means the Council of the City of Winnipeg.

General Requirements

General Requirements means the *Owner's Contract Document* titled "General Requirements".

Proper Invoice

Proper Invoice means an invoice with all of the information and documentation required by *Payment Legislation* for a "proper invoice", provided in accordance with the instructions on the *Owner's* website at: <https://legacy.winnipeg.ca/finance/corporate-accounts-payable.stm>.

Supply Chain Disruption

Supply Chain Disruption means an inability by the *Contractor* to obtain goods or services from third parties necessary to perform the *Work* within the schedule specified therein, despite the *Contractor* making all reasonable commercial efforts to procure same.

PART 1 – GENERAL PROVISIONS

8. GC 1.1 Contract Documents

- .1 Delete paragraphs 1.1.3 and 1.1.4 and replace with the following paragraph 1.1.3:

The *Contractor* shall review the *Contract Documents* for the purpose of facilitating and co-ordination and execution of the *Work* by the *Contractor*. The *Contractor* shall report promptly to the *Consultant* any ambiguities, design issues or other matters requiring clarification made known to the *Contractor* or that the *Contractor* may discover from such a review. Such review by the *Contractor* shall comply with the standard of care described in paragraph 3.9.1 of the *Contract*. Except for its obligation to review the *Contract Documents* and report the result pursuant to paragraph 1.1.3, the *Contractor* is not responsible for ambiguities, design issues or other matters requiring clarification in the *Contract Documents* and does not assume any responsibility to the *Owner* or to the *Consultant* for the accuracy of the *Contract Documents*. Without limiting the foregoing, the *Contractor* shall not be liable for any damages or costs resulting from any ambiguities, design issues or other matters requiring clarification in the *Contract Documents* which the *Contractor* could not reasonably have discovered from such a review in accordance with the standard of care. If the *Contractor* does discover any ambiguities, design issues or other matters requiring clarification in the *Contract Documents*, the *Contractor* shall not proceed with the *Work* affected until the *Contractor* has received modified or additional information from the *Consultant*. The impacts of any ambiguities, design issues or other matters requiring clarification in the *Contract Documents* which could not have been discovered by the *Contractor* performing their review in accordance with this paragraph 1.1.3, including to the *Contract Price* and *Contract Time*, shall be addressed by the parties in accordance with Part 6 - CHANGES IN THE WORK.

- .2 Delete paragraph 1.1.5.1 and replace with the following:

- .1 the order of priority of documents, from highest to lowest, shall be:

- the Award Letter
- the Supplementary Conditions
- the Agreement between Owner and Contractor
- the Definitions
- the General Conditions
- the General Requirements
- the Schedule to the *General Requirements* titled "Additional Specifications"
- the other technical *Specifications*

- material and finishing schedules
- the *Drawings*

9. GC 1.3 Rights and Remedies

.1 Add new paragraph 1.3.3 as follows:

1.3.3 No review or examination of, comments upon, approval of, or failure to review, examine, comment upon or approve any aspect of the *Work*, *Drawings* or *Shop Drawings* shall:

- .1 relieve the *Contractor* from, or alter or affect, the *Contractor's* liabilities or responsibilities under the *Contract*;
- .2 shall constitute acceptance of any *Work* or *Products* that are not in accordance with the requirements of the *Contract Documents*; or
- .3 operate as a waiver of any of the *Owner's* rights against the *Contractor* under the *Contract*.

10. GC 1.4 Assignment

.1 Delete paragraph 1.4.1 and replace with the following:

The *Contractor* shall not assign the *Contract* or any payments thereunder without the prior consent of the *Owner*. In the event of a permitted assignment of the *Contract* by the *Contractor*, such assignment shall not relieve the *Contractor* from its obligations and liabilities hereunder.

PART 2 - ADMINISTRATION OF THE CONTRACT

11. GC 2.1 Authority of the Consultant

.1 Delete paragraph 2.1.2 and replace with the following:

Nothing in this *Contract* shall limit the *Owner's* ability to perform the responsibilities assigned to the *Consultant* in this *Contract* (including giving notices to the *Contractor* which the *Consultant* is permitted to give) or otherwise restrict the *Owner's* right to revoke the *Consultant's* authority to act on behalf of the *Owner*.

.2 Add new paragraph 2.1.3 as follows:

2.1.3 The *Owner* may, in its sole discretion, designate an employee of the *Owner* or an internal department of the *Owner* to perform some or all of the responsibilities assigned to the *Consultant* under this *Contract*. Any reference to the *Consultant* in this *Contract* shall, to the extent of such designation, be deemed to include such employee or internal department.

12. GC 2.2 Role of the Consultant

.1 Add the following to the end of paragraph 2.2.5:

“and the *Contractor* will remain fully responsible for meeting all the requirements of the *Contract Documents* whether or not the *Work* has been reviewed by the *Consultant*.”

.2 Add the following to the end of paragraph 2.2.12:

If, in the opinion of the *Contractor*, the *Supplemental Instruction* involves an adjustment in the *Contract Price* or in the *Contract Time*, it shall, within 5 *Working Days* of the receipt of a *Supplemental Instruction*, provide the *Consultant* with a *Notice in Writing* to that effect which shall include the *Contractor's* good faith estimate of the expected adjustment to the *Contract Price* or *Contract Time* and a clear and unequivocal statement of the intention to make a claim for such adjustment. Failure to provide such *Notice in Writing* within such time shall preclude the *Contractor* from making a claim for an adjustment in the *Contract Price* or *Contract Time* as a result of the *Supplemental Instruction*.

.3 Paragraph 2.2.18: delete the words, “against whom the *Contractor* makes no reasonable objection and”.

13. GC 2.3 Review and Inspection of the Work

.1 Add the following new paragraph 2.3.8:

If the *Owner* has arranged with the *Contractor* the coordination of testing, surveys, inspections or other professional services at the *Place of the Work*, and the testing, surveying, inspections or other professional services is interfered, prolonged or delayed as a result of the *Contractor* failing to properly coordinate the attendance or the applicable portions of the *Place of the Work* or *Work* are not prepared, then the *Contractor* will be responsible to the *Owner* for the incremental and additional costs charged by the professional service provider as a result of interference, prolongation or delay.

14. GC 2.4 Defective Work

.1 Add the following new items after paragraph 2.4.1:

.1 The *Contractor* shall rectify, in a manner acceptable to the *Owner* and the *Consultant*, all defective work and deficiencies throughout the *Work*, whether or not they are specifically identified by the *Consultant*.

.2 The *Contractor* shall prioritize the correction of any defective work which, in the sole discretion of the *Owner*, adversely affects the day to day operation of the *Owner*.

15. Add new GC 2.5 AUDIT

.1 Add the following new GC 2.5 AUDIT:

GC 2.5 AUDIT

2.5.1 The *Contractor* shall keep full and detailed accounts and records necessary for documenting the proper performance of the *Work* and the *Contract Price*.

2.5.2 The *Contractor* shall provide the *Owner* or any entities providing funding relating to the *Contract* or by persons designated to act on behalf of any of them with reasonable access to all the *Contractor's* books, records, payroll, correspondence, instructions, receipt vouchers, *Subcontractor* and *Supplier* invoices and memoranda relating to the *Cost of the Work*, the portion of the *Contract Price* that is not payable on a lump sum basis, and for this purpose, the *Contractor* shall preserve all such records for a period of 3 years after *Ready-for-Takeover*, or such longer period prescribed elsewhere in the *Contract Documents*.

2.5.3 The *Contractor* shall cause all *Subcontractors* at any tier and all other Persons directly or indirectly controlled by or affiliated with the *Contractor* to comply with the requirements of this clause as if they were the *Contractor*.

PART 3 - EXECUTION OF THE WORK

16. GC 3.1 Control of the Work

.1 Add new paragraphs 3.1.3 and 3.1.4 as follows:

3.1.3 The *Work* and any *Construction Equipment* shall remain at the risk and responsibility of the *Contractor* from the commencement of the *Work* until the date of *Ready-for-Takeover*.

3.1.4 The *Contractor* represents that, prior to entering into the *Contract*, it conducted such investigations and examinations of the *Place of the Work*, the *Contract Documents*, and any other documents made available to the *Contractor* by the *Owner*, including legal descriptions, test results, independent testing agency reports, surveys, and documents indicating the location of utilities and other structures to the extent obtained by the *Owner*, as would be conducted by an experienced and prudent contractor exercising the standard of care described in paragraph 3.9.1, so as to ascertain the nature and location of the *Work*, properly inferable, readily apparent, or readily discoverable conditions, possible delays in commencing phases of the *Work*, and conditions relating to transportation, handling and storage of materials and facilities needed to perform the *Work*. Nothing in this paragraph 3.1.4 restricts the application of GC 6.4 - CONCEALED OR UNKNOWN

CONDITIONS to conditions that were not properly inferable, readily apparent, or readily discoverable by the *Contractor* exercising the standard of care described in paragraph 3.9.1 prior to the date of the *Contract*.

17. GC 3.2 Construction by Owner or Other Contractors

.1 Delete paragraphs 3.2.2 and 3.2.3 replace with the following:

3.2.2 The *Contractor* acknowledges that *Other Contractors* may be present at the *Place of the Work* during the execution of the *Work* by the *Contractor*.

3.2.3 For the purposes of this paragraph 3.2.3, *Other Contractors* is limited to contractors, other than the *Contractor*, engaged by the *Owner* to perform work at the *Place of the Work* in connection with the *Project* or work incidental thereto, and does not include any other contractor engaged by the *Owner* for purposes unrelated to the *Project*. In respect of such *Other Contractors*, the *Contractor* must:

- .1 cooperate with *Other Contractors*;
- .2 coordinate its *Work* with the *Other Contractors*' work to eliminate or, if it is not possible to eliminate, minimize any delays to the *Work*;
- .3 not obstruct, delay or interfere with or damage *Other Contractors*' work or property;
- .4 comply with all instructions from the *Owner* regarding the *Contractor's Work* and *Other Contractors* and their work;
- .5 allow any *Other Contractors* engaged by the *Owner* to use the amenities, facilities and services that are made available by the *Owner* for use at the *Place of the Work*; and
- .6 retain overall responsibility for compliance with the applicable health and construction safety legislation at the *Place of the Work*.

The *Contractor* acknowledges and agrees that any action of the *Contractor* under this paragraph 3.2.3 does not lessen or otherwise affect the *Contractor's* other obligations under the *Contract*.

.2 Add to the beginning of 3.2.4: "Except for any co-ordination and integration of the *Work* required under paragraph 3.2.3,"

18. GC 3.4 Construction Schedule

.1 Add new paragraph 3.4.2 as follows:

3.4.2 If, due to the fault of the *Contractor*, the actual progress of the *Work* is behind schedule or is likely to become behind schedule, based on critical path methodology, the *Contractor* shall take appropriate steps, at the *Contractor's* own expense, to cause the actual progress of the *Work* to conform to the schedule such that the date for achieving *Ready-for-Takeover* of the *Work* specified in paragraph 1.3 of Article A1 of the *Agreement* shall be achieved. The *Contractor* shall produce and present to the *Owner* and the *Consultant*, for their review and approval, a recovery plan demonstrating how the *Contractor* will achieve the recovery of the schedule. The *Owner* shall be entitled to withhold any payment otherwise due to the *Contractor* until such time as the *Contractor* submits the recovery plan to the *Owner* and the *Consultant*.

19. GC 3.5 Supervision

.1 Delete paragraph 3.5.1 and replace with the following:

The *Contractor* shall employ a competent supervisor and necessary assistants who shall be in attendance at the *Place of the Work* while the *Work* is being performed. The supervisor shall not be changed or replaced except for valid reason, and with the prior written approval of the *Owner*.

.2 Delete paragraph 3.5.2 and replace with the following:

The representative appointed by the *Contractor* shall represent the *Contractor* at the *Place of the Work* and shall have full authority to act on written instructions given by the *Consultant* and/or the *Owner*. Instructions given to the appointed representative shall be deemed to have been given to the *Contractor* and both the appointed representative and any project manager shall have full authority to act on behalf of the *Contractor* and bind the *Contractor* in matters related to the *Contract*.

20. GC 3.6 Subcontractors and Suppliers

.1 Delete paragraph 3.6.2 and replace with the following:

The *Contractor* agrees to employ those *Subcontractors* and *Suppliers* accepted by the *Owner* at the signing of the *Contract* or otherwise identified in the *Contract Documents*. The *Contractor* acknowledges that the *Owner*, in awarding the *Contract*, has relied on the *Contractor's* representations that certain *Subcontractors* and *Suppliers* are vital to the *Project*, and the *Contractor* shall not change the accepted *Subcontractors* or *Suppliers* without the prior written approval of the *Owner*, which may be withheld at the sole discretion of the *Owner*.

2. Add the following new paragraph 3.6.7:

In soliciting bids and contracting with *Subcontractors* and *Suppliers*, the *Contractor* shall at all times act in good faith and in the best interest of the *Owner*, will abide by the *Owner's* Purchasing Policy (see <https://legacy.winnipeg.ca/finance/findata/matmgt/policy/policy.pdf>), as amended from time to time, and including any trade agreement obligations that apply to the *Owner*, and shall avoid any conflict of interest between its duties to the *Owner* and any other duties or interests which it may have. The *Contractor* must immediately notify the *Owner* whenever it encounters any circumstances or becomes aware of any matter which does or may give rise to a conflict of interest.

21. GC 3.7 Labour and Products

.1 Add a new sentence at the end of paragraph 3.7.1 as follows:

The *Owner* may require, in writing, the *Contractor* to remove and replace any individual performing any part of the *Work* at the *Place of the Work*, who, in the *Owner's* opinion, acting reasonably, is not qualified to perform the job to as assigned, is not following any applicable provision of this *Contract*, has acted carelessly or recklessly at the *Place of the Work*, or poses a threat to health and safety.

.2 Add the following new paragraphs 3.7.4 and 3.7.5:

3.7.4 The *Contractor* is responsible for the safe on-site storage of *Products* and their protection (including *Products* supplied by the *Owner* and *Other Contractors* to be installed under the *Contract*) in such ways as to avoid dangerous conditions or contamination to the *Products* or other persons or property and in locations at the *Place of the Work* to the satisfaction of the *Owner* and the *Consultant*. The *Owner* shall provide all relevant information on the *Products* to be supplied by the *Owner*.

3.7.5 Title to all *Products* shall, subject always to the *Contractor's* lien rights, vest in the *Owner* absolutely upon delivery to the *Place of the Work* or upon payment thereof, whichever shall happen first.

22. GC 3.8 Shop Drawings

.1 Paragraph 3.8.1: Add the words, “or as the *Consultant* may reasonably request” after “*Contract Documents*”.

.2 Amend paragraphs 3.8.2 and 3.8.5 by adding “*Owner* and the” before “*Consultant*”.

.3 Amend paragraphs 3.8.3 and 3.8.7 by adding “or the *Owner*” after “*Consultant*”.

.4 Amend paragraphs 3.8.4 and 3.8.6 by adding “or the *Owner's*” after “*Consultant's*”.

23. Add new GC 3.9 and 3.10

GC 3.9 PERFORMANCE BY CONTRACTOR

3.9.1 In performing its services and obligations under the *Contract*, the *Contractor* shall exercise the standard of care, skill, and diligence that would normally be provided by an experienced and prudent *Contractor* supplying similar services for similar projects. The *Contractor* acknowledges and agrees that throughout the *Contract*, the *Contractor's* obligations, duties, and responsibilities shall be interpreted in accordance with this standard. The *Contractor* shall exercise the same standard of due care and diligence in respect of any *Products*, personnel, or procedures which it may recommend to the *Owner*.

3.9.2 The *Contractor* further represents, covenants and warrants to the *Owner* that:

- .1 the personnel it assigns to the *Project* are appropriately experienced; and
- .2 there are no pending, threatened or anticipated claims that would have a material effect on the financial ability of the *Contractor* to perform its work under the *Contract*.

GC 3.10 RIGHT OF ENTRY

- 3.10.1 The *Owner* shall have the right, for itself, its agents, representatives or other persons, to enter, occupy or use any portion of the *Place of the Work*, at any time and for so long a time as the *Consultant* may require. While at the *Place of the Work*, the *Owner*, its agents, representatives or other persons acting on its behalf shall observe the *Contractor's* safety rules and requirements. Such entry or occupation shall not be considered as acceptance of the *Work* or in any way relieve the *Contractor* from responsibility to complete the *Contract*.
- 3.10.2 If the *Place of the Work* is currently occupied by the *Owner*, the *Contractor* shall abide by and enforce directives and policies provided by the *Owner*, including any by-laws regarding signs, advertisements, fires and smoking at the *Place of the Work* as directed by the *Owner* or required by law or directed by any governmental or quasi-governmental authority.

PART 5 – PAYMENT

24. GC 5.1 Financing Information Required of the Owner

- .1 Delete GC 5.1 in its entirety.

25. GC 5.2 Applications for Payment

- .1 In paragraph 5.2.1 after “as the *Work* progresses” add:
“in accordance with the instructions on the *Owner's* corporate accounts payable portal and should copy the *Consultant* on submission of its invoice.”
- .2 In paragraph 5.2.8 after “the *Place of the Work*” add:
“, a clearance certificate under provincial sales tax legislation and such other supporting documentation as the *Owner* may reasonably require to substantiate the application,”
- .3 Add the following new paragraphs 5.2.10 and 5.2.11:
- 5.2.10 Each application for payment shall be in the form of a *Proper Invoice*. As a condition of receiving each payment, the *Contractor* shall submit all information and required by a *Proper Invoice*. For greater certainty and without limiting the foregoing, an invoice shall only be considered to meet the definition of a “Proper Invoice” under the *Payment Legislation* if it includes all requirements of a *Proper Invoice* as required by the *Contract*.
- 5.2.11 The *Owner* shall make payments to the *Contractor* by direct deposit to the *Contractor's* banking institution, and by no other means. Direct deposit application forms are at https://winnipeg.ca/finance/files/Direct_Deposit_Form.pdf. Payments will not be made until the *Contractor* has made satisfactory direct deposit arrangements with the *Owner*.

26. GC 5.3 Payment

- .1 Add the following new paragraph 5.3.3:
- 5.3.3 Notwithstanding any other provision of this *Contract*, the *Owner* may refuse to make the whole or any part of any payment otherwise due under this *Contract* including payment of any holdback to the *Contractor* (to the extent permitted by law), to the extent that is reasonably necessary to protect the *Owner* from loss because:
- .1 the *Work* is defective, or completed *Work* has been damaged by the *Contractor* requiring correction and replacement;
 - .2 the *Owner* has been required to correct defective *Work* or complete *Work* in accordance with paragraph 7.1.4.1;

- .3 liens have been filed against the *Work* or written notice of a lien in respect of the *Work* has been given to the *Owner*;
- .4 of third party monetary claims against the *Contractor* which are enforceable against the *Owner*;
- .5 there are other items or deficiencies entitling the *Owner* to a set-off pursuant to this *Contract*; or
- .6 the *Contractor* has failed to deliver all manuals, records, as-built drawings, written warranties or other deliverables contemplated by the *Contract Documents*; or
- .7 the *Contractor* owes or is liable to the *Owner* for amounts under the *Contract*.

27. GC 5.4 Substantial Performance of the Work and Payment of Holdback

- .1 Delete paragraph 5.4.2 in its entirety.

28. GC 5.5 Final Payment

- .1 Add the following sentence to the end of paragraph 5.5.1:

The *Contractor's* application for final payment shall be identified as a final invoice, be in the form of a *Proper Invoice* and be accompanied by any documents or materials not yet delivered pursuant to the *Contract Documents*, including, but not limited to, any undelivered as-built drawings and operations and maintenance documents, if applicable.

- .2 Paragraph 5.5.4: Replace “5” with “28”.

- .3 Add the following as a new paragraph 5.5.5:

5.5.5 Subject to the *Contractor's* warranty obligations under PART 12 and any breach of the *Contract* by the *Contractor*, acceptance by the *Contractor* of payment on account of the final *Proper Invoice* shall constitute a waiver and release by the *Contractor* of all claims against the *Owner* whether for payment for *Work* done, damages or otherwise arising out of the *Contract*.

29. GC 5.7 Non-Conforming Work

- .1 Add the following as a new paragraph 5.7.2:

5.7.2 Notwithstanding any other provision of this *Contract*, the *Contractor* shall not be entitled to any compensation and shall have no claim in respect of the costs incurred by the *Contractor* in remedying errors and omissions in the performance of the *Work* that are attributable to the *Contractor*, the *Contractor's* servants, agents, *Suppliers*, *Subcontractors* or persons for whom the *Contractor* is responsible or the failure of any *Work* or *Products* to conform to the requirements of the *Contract Documents*.

PART 6 - CHANGES IN THE WORK

30. GC 6.1 Owner's Right to Make Changes

- .1 Add the following to the end of paragraph 6.1.2:

Changes to the *Work* performed by the *Contractor* without a prior *Change Order* or a *Change Directive*, shall be at the *Contractor's* sole risk, cost and expense and the *Owner* shall not be liable for any claim for compensation in respect thereof by the *Contractor*. Claims by the *Contractor* for a change in the *Contract Price* shall be barred unless there has been strict compliance with all requirements in PART 6 – CHANGES IN THE WORK. No course of conduct or dealing between the parties, no express or implied acceptance of alteration or additions to the *Work* and no claims that the *Owner* has been unjustly enriched by any alteration or addition to the *Work*, whether in fact there is any such unjust enrichment or not, shall be the basis of a claim for additional payment under this *Contract* or a claim for any extension of the *Contract Time*.

- .2 Add the following new paragraphs 6.1.3 and 6.1.4:

6.1.3 The *Contractor* agrees that changes due to construction co-ordination items, including but not limited to site conditions, site co-ordination, *Subcontractor* co-ordination, trade co-ordination, training and certification of personnel (including training and certification of personnel required on account of a change to the *Work*), and weather considerations, are included in the *Contract Price* and shall not constitute a change in the *Work* or otherwise entitle the *Contractor* to any additional compensation.

- 6.1.4 Notwithstanding anything to the contrary herein, the adjustment (if any) to the *Contract Price* and *Contract Time* recorded in a *Change Order* or calculated pursuant to a *Change Directive* shall be the only adjustment made to the *Contract Price* and *Contract Time* for the applicable change in the *Work Change Order* and the *Contractor* will not be entitled to be paid any additional amount (including, without limitation, on account of cumulative impact of changes to the *Work*) or to be granted any additional time to perform the *Work* as a result of or arising in any way, either directly or indirectly, from the change in the *Work* other than that adjustment of the *Contract Time* and *Contract Price* agreed to and recorded in the *Change Order* or calculated pursuant to a *Change Directive* (as the case may be).

31. GC 6.2 Change Order

- .1 Add a new sentence to the end of paragraph 6.2.1 as follows:

Quotations for changes to the *Work* provided by the *Contractor* shall, at the *Owner's* option, be determined based on

(i) any agreed estimate and lump sum;

(ii) the *Unit Prices* or other prices set forth in this *Contract* or the *Contractor's* bid submission, without escalation; or

(iii) limited to those reimbursable categories set out in paragraph 6.3.7 (and must be accompanied by itemized breakdowns together with detailed, substantiating back-up documentation from *Subcontractors* and *Suppliers*), and shall be in such form as the *Consultant* may reasonably require.

32. GC 6.3 Change Directive

- .1 Delete paragraph 6.3.7 and replace with the following:

The cost of performing the work attributable to a *Change Directive* shall, at the *Owner's* option, be determined based on the *Unit Prices* and other prices set forth in this *Contract* and, where not set out in this *Contract*, at the prices proposed by the *Contractor* in its bid submission prior to contract execution, without escalation. Where the cost of performing the work attributable to a *Change Directive* is not determined based on *Unit Prices* or other prices set out in this *Contract* or the *Contractor's* bid submission, and it is performed by the *Contractor's* own forces and valued on a cost plus percentage basis, the *Owner* will pay only for labour, materials and equipment directly used in the extra work plus mark-ups in accordance with the following:

- .1 Labour: Labour rates accepted by the *Owner* plus 15% for profit.
- .2 Products: Actual cost plus a 10% overhead allowance, plus 5% for profit.
- .3 Construction Equipment and Temporary Work: At rental rates provided by the Manitoba Heavy Construction Association (MHCA) or other similar trade association approved by the *Owner*, for the time when equipment is in use. There shall be no mark-ups on these rates.
- .4 Transport: Transport of *Construction Equipment* only for *Construction Equipment* not already present at the *Place of the Work*.
- .5 Small tools (under \$2500): Included in the labour rate, no further reimbursement permitted.
- .6 Construction Equipment or Temporary Work not owned by the *Contractor* and not covered by MHCA rates: Actual rental cost, confirmed by receipt of quotation from a third-party rental agency, plus 10% overhead allowance and 5% for profit.

For the purposes of this provision, the labour rates shall include the actual wage paid to the employee, plus a combined payroll burden and overhead allowance of sixty-five percent (65%). The payroll burden and overhead allowance shall include Canada Pension Plan, Employment Insurance, Workers Compensation, union dues and Construction Labour Relations Association of Manitoba premiums (where applicable), payroll tax, employee benefit plans, vacation allowance, payroll services, human resources services, training allowances, information systems and services, small tools and tool management, corporate office expenses, corporate office administration and any other payments required by law.

When a *Subcontractor* performs the extra work and the payment to the *Contractor* is on a cost plus percentage basis, the *Owner* will pay the *Contractor*:

- .1 an amount equal to the *Subcontractor's* costs for labour, materials and equipment used for the extra work, provided that the rates, overhead allowance and profits do not exceed those outlined above; and
- .2 a mark-up for overhead allowance and profit, not exceeding ten percent (10%) on top of the *Subcontractor's* price. This mark-up shall take account of all additional costs, excluding approved supervision, quality inspectors and other personnel required to ensure that the *Subcontractor* undertakes the extra work in accordance with the *Contract*.

If a valuation is required pursuant to this paragraph 6.3.7, the *Contractor* shall provide the *Consultant* with:

- .1 detailed and accurate statements showing: (i) description, cost (including expenses for operation and maintenance) and time for *Construction Equipment* used by the *Contractor*; (ii) description, cost and quantity for *Products* used by the *Contractor*; (iii) rate of pay and hours of work for each of the persons employed by the *Contractor*; and
- .2 access to any cost records (including payroll records, time books and invoices) or other data necessary to verify the accuracy of such statements. The *Owner* may audit the rates for compliance.

33. GC 6.4 Concealed or Unknown Conditions

- .1 Add the following new sentence to the end of paragraph 6.4.1:
“Failure by the *Contractor* to give a clear and unequivocal *Notice in Writing* within the time stipulated in this paragraph 6.4.1 will constitute a waiver of the *Contractor*’s right to a change in the *Work* as contemplated by paragraph 6.4.2.”
- .2 Add new paragraph 6.4.5 to read as follows:

6.4.5 The *Contractor* acknowledges that prior to entering into the *Contract*, it has inspected the physical conditions of the *Place of the Work*. Notwithstanding any other provision of this *Contract*, the *Contractor* agrees not to seek any increases in the *Contract Price*, the *Cost of the Work* or an adjustment to the *Contract Time* in respect of any conditions that were visible or could have been reasonably inferred by the *Contractor* prior to the date of the *Contract*.

34. GC 6.5 Delays

- .1 Delete paragraph 6.5.4 and substitute the following:
Notwithstanding anything herein to the contrary, no extension of the *Contract Time* will be given and the *Contractor* shall not be entitled to payment for costs incurred as a result of any delay unless *Notice in Writing* (including details as to the cause of delay) is given to the *Consultant* and the *Owner* no later than 10 *Working Days* after the commencement of the delay. In the case of a continuing cause of delay, only one *Notice in Writing* shall be necessary. Failure on the part of the *Contractor* to give such *Notice in Writing* to the *Consultant* and the *Owner* in accordance with this paragraph 6.5.4 will constitute a waiver of the *Contractor*’s right to make a claim for an adjustment to the *Contract Price* or the *Contract Time* as a result of such delay, provided that such waiver and release shall not apply if the *Contractor* demonstrates that the *Owner* was not prejudiced by the act or omission giving rise to the potential waiver.
- .2 Add new paragraph 6.5.6 to read as follows:
Notwithstanding anything herein to the contrary, if the *Contractor* is delayed for 30 days or longer in the performance of the *Work* pursuant to paragraph 6.5.2 or 6.5.3, the *Owner* may terminate the *Contract* by written notice to the *Contractor* given at any time after the expiry of such 30 day period, in which case paragraph 7.1.5 hereof shall apply.
- .3 Add new paragraph 6.5.7 to read as follows:
Notwithstanding anything herein to the contrary, no extension of the *Contract Time* will be given and the *Contractor* shall not be entitled to payment for costs incurred as a result of any delay if and to the extent that such delay did not result in a delay to the critical path of the *Contractor*’s completion of the *Work* or could have been reasonably mitigated by the *Contractor*.
- .4 Add new paragraph 6.5.8 to read as follows:

6.5.8 If the *Contractor* is delayed in the performance of the *Work* by reason of a *Supply Chain Disruption*, the *Work* schedule may be adjusted by a period of time equal to the time lost due to such delay. Increased costs do not, in and of themselves, amount to a *Supply Chain Disruption*. A minimum of 5 *Working Days* prior to the commencement of *Work*, the *Contractor* shall declare whether a *Supply Chain Disruption* will affect the commencement of the *Work*. For any *Supply Chain Disruption* identified after *Work* has commenced, the *Contractor* shall, within 5 *Working Days* of becoming aware of the anticipated *Supply Chain Disruption*, declare the *Supply Chain Disruption* and shall provide sufficient evidence that the *Supply Chain Disruption* is directly related to ordering of *Products*, production and/or manufacturing schedules or availability of staff. Failure to provide this notice will result in no additional time delays being considered by the *Owner*. 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. Where *Work* is carried over

solely as a result of *Supply Chain Disruption*, the cost of temporary works to maintain the *Work* in a safe manner until *Work* recommences will be considered by the *Consultant*.

35. GC 6.6 Claims for a Change in Contract Price

.1 Add new paragraph 6.6.7 as follows:

Failure by the *Contractor* to give *Notice in Writing* to the *Owner* and the *Consultant* of the *Contractor's* claim for an adjustment to the *Contract Price* and/or the *Contract Time* in strict compliance with any express time period stipulated in the *Contract Documents* will constitute a waiver of the right to make such a claim, m, provided that such waiver and release shall not apply if the *Contractor* demonstrates that the *Owner* was not prejudiced by the act or omission giving rise to the potential waiver.

36. GC 6.7 Quantity Variations

.1 Delete paragraphs 6.7.3 through 6.7.5 and replace with the following new paragraph 6.7.3:

If either party requests adjustment of a *Unit Price* or other price, both parties shall make all reasonable efforts to agree on a revised *Unit Price* or other price. The agreed revised *Unit Price* or other price shall be recorded in a *Change Order*. Unless otherwise agreed, any such adjusted *Unit Price* or other price shall be at the alternative prices proposed by the *Contractor* in its bid submission prior to *Contract* execution, if any, without escalation.

37. GC 6.8 Fuel Price Adjustment

.1 Add new GC 6.8 FUEL PRICE ADJUSTMENT as follows:

6.8.1 The *Contract* is subject to a fuel price adjustment which will be calculated monthly based on eligible *Work* completed utilizing the following mathematical formulas:

.1 where the price of fuel has increased - $((CFI/BFI)-1.15) \times Q \times FF$; and

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

BFI = base fuel index; CFI = current fuel index; FF = fuel factor; and Q = monetary value of *Work* applied in the calculation.

6.8.2 The base fuel index (BFI) will be the retail price of fuel identified in the *Contract Documents* 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. The current fuel index (CFI) based on the above blended rate will be determined for each month of work and applied on the next practicable progress estimate once rates are published by Statistics Canada. 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.

6.8.3 Fuel cost adjustments may result in additional payment to the *Contractor* or credit to the *Owner*. The fuel escalation or de-escalation adjustment will not be applied if the CFI is within $\pm 15\%$ of the BFI.

6.8.4 Fuel escalation adjustments will not be considered beyond the *Ready-for-Takeover* except where those dates are adjusted by *Change Order*. Fuel de-escalation adjustments will apply for *Work* that extends beyond the dates specified for *Ready-for-Takeover*.

PART 7 - DEFAULT NOTICE

6 GC 7.1 Owner's Right to Perform the Work, Terminate the Contractor's Right to Continue with the Work or Terminate the Contract

.1 Delete paragraph 7.1.2 and substitute the following:

If the *Contractor* neglects, refuses, or fails to perform the *Work*, or otherwise fails to comply with this *Contract*, other than with respect to a purely technical or administrative requirement that does not prejudice the *Owner* or the *Project*, and if the *Consultant* has given a written statement to the *Owner* and *Contractor* which provides the detail of such, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, give the *Contractor Notice in Writing*, containing particulars of the default including references to applicable provisions of the *Contract*, that

the *Contractor* is in default of the *Contractor's* contractual obligations and instruct the *Contractor* to correct the default in the 5 *Working Days* immediately following the receipt of such *Notice in Writing*.

- .2 Add new paragraph 7.1.8 as follows:

7.1.8 If an event of default has occurred pursuant to GC 7.1.2, and the *Contractor* has failed to comply with the curative provisions, the *Owner* may, without process or action at law, do any one or more of the following where doing so is reasonably proportionate with the circumstances of the *Contractor's* event of default and its impact on the *Work*: (a) withhold or retain the whole or part of any payment; (b) take the whole of the *Work*, or any part or parts thereof out of the hands of the *Contractor*; (c) demand payment for any amount owed to the *Owner*, including amounts paid or costs incurred by the *Owner* in connection with the event of default; (d) terminate the *Contract*.

7 GC 7.2 Contractor's Right to Suspend the Work Or Terminate the Contract

- .1 Delete paragraph 7.2.2 in its entirety.
- .2 Delete paragraph 7.2.3.1 in its entirety.
- .3 Paragraph 7.2.3.3: Add the phrase “, except where the *Owner* has a bona fide claim for set off” after the word “court”.
- .4 Paragraph 7.2.4: Delete “5 *Working Days*” and substitute “10 days”.

PART 8 – DISPUTE RESOLUTION

8 GC 8.3 Negotiation Mediation and Arbitration

- .1 Add the following sentence to paragraph 8.3.3:

The following informal dispute resolution process shall be followed where the *Contractor* disagrees with any opinion, determination, or decision of the *Consultant* (“Dispute”). In the event of a Dispute, attempts shall be made by the *Consultant* and the *Contractor's* equivalent representative to resolve Disputes within the normal course of project dealings. In the event of a dispute, attempts shall be made by the *Consultant* and the *Contractor's* equivalent representative to resolve disputes within the normal course of project dealings. Disputes which cannot be resolved within the normal course of project dealings shall be referred to a without prejudice escalating negotiation process consisting of, at a minimum: (i) the *Owner's* contract administrator; (ii) supervisory level between the *Owner's* contract administrator and the applicable department head of the *Owner* responsible for the *Work*; (iii) the applicable department head of the *Owner* responsible for the *Work*. Both the *Owner* and the *Contractor* agree to make all reasonable efforts to conduct the above escalating negotiation process within 20 *Working Days*, unless both parties agree, in writing, to extend that period of time. Neither party may have legal counsel present during such negotiations.

- .2 Paragraph 8.3.4: Delete “10 *Working Days*” and substitute “30 *Working Days*”.

PART 9 - PROTECTION OF WORK AND PROPERTY

8 GC 9.1 Protection of Work and Property

- .1 Delete paragraph 9.1.1.1 and replace with the following:

“errors or omissions in the *Contract Documents* which the *Contractor* could not have discovered applying the standard of care described in paragraph 3.9.1; or”

- .2 Delete paragraph 9.1.2 and replace with the following:

If required by the *Contract Documents*, prior to commencing any *Work*, the *Contractor* shall locate all underground utilities and structures at the *Place of the Work* indicated in or inferable from the *Contract Documents*, or that are reasonably apparent in or inferable from an inspection of the *Place of the Work* exercising the degree of care or skill described in paragraph 3.9.

9 GC 9.4 Construction Safety

- .1 Delete paragraph 9.4.5 and add the following new paragraphs 9.4.5 and 9.4.6 as follows:

- 9.4.5 The *Contractor* shall indemnify and save harmless the *Owner*, its agents, officers, employees, consultants, successors and assigns from and against the consequences of any and all safety infractions committed by the *Contractor*'s own forces under the applicable construction health and safety legislation at the *Place of the Work* or as a result of the *Contractor* failing to fulfil its obligations hereunder, including the payment of legal fees and disbursements on a full indemnity basis. Such indemnity shall apply to the extent to which the *Owner* is not covered by insurance, provided that the indemnity contained in this paragraph shall be limited to costs and damages resulting directly from such infractions and shall not extend to any consequential, indirect or special damages.
- 9.4.6 Without restricting the generality of any other portion of this GC 9.4, the *Contractor* acknowledges that it is the "prime contractor" or "constructor" for the *Place of the Work* pursuant to applicable construction health and safety legislation at the *Place of the Work* providing for a "prime contractor", "constructor", or other similar role. The *Contractor* undertakes to carry out the duties and responsibilities of the "prime contractor", "constructor" or other similar role. The *Contractor* shall indemnify and hold harmless the *Owner* from any liability for claims, damages or penalties, including reasonable legal fees to defend any offences, arising from the *Contractor*'s failure to comply with the duties, responsibilities and obligations of the "prime contractor", "constructor" or other similar role.

PART 10 - GOVERNING REGULATIONS

10 GC10.1 Taxes and Duties

- .1 Delete paragraph 10.1.2 and replace as follows:
- 10.1.2 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, or comparable legislation or other government policies in any other jurisdictions: (a) occurs after the time of the bid closing; (b) applies to *Products*; and (c) affects the cost of such *Products* to the *Contract*.
- .2 Add the following as new paragraphs 10.1.3, 10.1.4, 10.1.5, 10.1.6:
- 10.1.3 If a change referred to in paragraph 10.1.2 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 *Consultant* represents the minimum amount of increase necessary. The *Contractor* shall be required to provide satisfactory proof that it has investigated alternative options for obtaining equivalent *Products* and reducing or eliminating the increase in *Contract Price*, including entering into purchase agreements with vendors located in other jurisdictions.
- 10.1.4 The *Contractor* shall also, at all times, comply with *The Retail Sales Tax Act* (Manitoba), including any applicable provisions respecting security for the payment of tax and shall provide evidence of compliance thereunder upon request.
- 10.1.5 If the *Contractor* is a non-resident of Canada, the *Owner* shall retain and remit the prescribed percentage of withholding tax from the *Contract Price*, unless the *Contractor* first provides the *Owner* with an appropriate certificate exempting the *Owner* from remitting the prescribed withholding tax. The *Contractor* shall indemnify and hold harmless the *Owner* from and against all liability for withholding taxes, penalties and interest payable pursuant to the *Income Tax Act* (Canada) in relation to the performance of the *Work* by a non-resident of Canada.
- 10.1.6 The *Contractor* shall indemnify and hold harmless the *Owner* from and against liability for all *Value Added Taxes*, excise taxes, workers' compensation assessments or other charges (including late interest and penalties) in relation to the performance of the *Work* that are payable by the *Contractor* to any governmental authority.

11 GC 10.2 Laws, Notices, Permits and Fees

- .1 Add a new sentence to the end of paragraph 10.2.7 as follows:

Failure on the part of the *Contractor* to advise the *Owner* in writing of such change to such laws, ordinances, rules, regulations, or codes in accordance with paragraph 10.2.5 will constitute a waiver of the *Contractor's* right to any such change in the *Contract Price*. Claims for a change in the *Contract Price* under paragraph 10.2.5 or this paragraph 10.2.7 are restricted to changes to any tariffs or *Value Added Taxes* which affect the cost of permits, *Products*, *Construction Equipment*, and site utilities necessary for the performance of the *Work* in accordance with the *Contract*.

12 GC 10.4 Workers' Compensation

- .1 Add new paragraph 10.4.2 as follows:

The *Contractor* shall ensure that workers' compensation covers all workers engaged in the *Work* in accordance with the statutory requirements of the province or territory having jurisdiction over such employees, including the provision of voluntary coverage, where applicable, for all workers engaged in the *Work* for whom mandatory coverage under workers' compensation legislation in force at the *Place of the Work* does not apply. The *Contractor* will indemnify and hold harmless the *Owner* from and against all liability incurred by the *Owner* as a result of the failure of the *Contractor* to ensure coverage under the workers' compensation legislation in force at the *Place of the Work*.

13 GC 10.5 Accessibility

- .1 Add new GC 10.5 as follows:

GC 10.5 ACCESSIBILITY

10.5.1 The *Accessibility for Manitobans Act* (AMA) imposes obligations on the *Owner* to provide accessible customer service to all persons in accordance with the Customer Service Standard Regulation (CSSR). The *Contractor* agrees to comply with the accessible customer services obligations under the CSSR and further agrees that when providing the goods or services or otherwise acting on the *Owner's* behalf, shall comply with all obligations under the AMA applicable to public sector bodies.

14 GC 10.6 Artificial Intelligence

- .1 Add new GC 10.6 as follows:

GC 10.6 ARTIFICIAL INTELLIGENCE

10.6.1 The *Contractor* understands and agrees that the *Owner* is a public entity and may be subject to The Public Sector Artificial Intelligence And Cybersecurity Governance Act, S.M. 2026, c. 43 (AI Act), which applies to the use of AI Systems (as defined in the AI Act) by public sector entities. As such, any use of AI Systems by the *Contractor* shall be in accordance with the terms of the AI Act. Should any changes to the AI Act, including the implementation of regulations necessitate changes to the terms of this *Contract*, the *Contractor* agrees that this *Contract* shall be amended as may be necessary for the *Owner* to comply with its legislative requirements. *Contractor* shall not, and shall not permit its subcontractors, to upload, input, prompt, disclose, transmit, process, or use *Owner Confidential Information*, including personal information, with or in AI Systems without the express written permission of the *Owner*.

PART 11 – INSURANCE

15 GC11.1 Insurance

1. Delete paragraph 11.1.1.3 to 11.1.1.6.
2. Add the following to the end of paragraph 11.1.1:

Notwithstanding the requirements of CCDC 41, the insurance limits for the insurances required in paragraphs 11.1.1.1 are \$5,000,000, the insurance limits required in and 11.1.1.2 are \$2,000,000 per occurrence and the insurance limits required in 11.1.1.8 are \$1,000,000 per occurrence with a \$2,000,000 aggregate.

16 GC 11.2 Contract Security

- .1 Add the following new GC 11.2:

GC 11.2 CONTRACT SECURITY

11.2.1 The *Contractor* shall, prior to the commencement of the *Work*, provide to the *Owner*:

- .1 a performance bond in an amount equal to 50% of the estimated *Contract Price*, covering the performance of the *Contract*, including the *Contractor's* requirements with respect to the correction of deficiencies and the fulfillment of all warranties, available at: <https://www.winnipeg.ca/media/4928/> (Schedule A - Form of Notice <https://www.winnipeg.ca/media/4831/> Schedule B - Surety's Acknowledgement <https://www.winnipeg.ca/media/4832/> Schedule C - Surety's Position <https://www.winnipeg.ca/media/4833/>); and
 - .2 a labour and material payment bond in an amount equal to 50% of the estimated *Contract Price* covering payment for labour and *Products*, available at: <https://www.winnipeg.ca/media/4930/> (Schedule A - Notice of Claim <https://www.winnipeg.ca/media/4834/> Schedule B - Acknowledgement of a Notice <https://www.winnipeg.ca/media/4835/> Schedule C - Surety's Position <https://www.winnipeg.ca/media/4836/>).
- 11.2.2 Such bonds shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province or territory of the *Place of the Work* and shall be maintained in good standing until the expiry of the warranty period described in GC 12.3.
- 11.2.3 If submitted in digital format the contract security must meet the following criteria:
- .1 the version submitted by the *Contractor* must have valid digital signatures and seals;
 - .2 the version submitted by the *Contractor* must be verifiable by the *Owner* 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;
 - .3 the version submitted must be viewable, printable and storable in standard electronic file formats compatible with the *Owner*, and in a single file. Allowable formats include pdf;
 - .4 the verification may be conducted by the *Owner* immediately or at any time during the life of the bond and at the discretion of the *Owner* with no requirement for passwords or fees; and
 - .5 the results of the verification must provide a clear, immediate and printable indication of pass or fail regarding paragraph 11.2.2(b).
- 11.2.3 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 GC 7.1. If a digital bond fails the verification process, the *Contractor* may provide a replacement bond (in hard copy or digital format) within 7 days of the *Owner's* request or within such greater period of time as the *Owner* in their discretion, exercised reasonably, allows. Digital bonds passing the verification process will be treated as original and authentic.
- 11.2.4 The *Contractor* shall provide:
- .1 the required contract security to: The City of Winnipeg Legal Services Department, 185 King Street, 3rd Floor, Winnipeg, MB R3B 1J1; and
 - .2 the *Consultant* with copies of the required contract security, within 7 days of notification of the award of the *Contract* and prior to the commencement of any *Work* at the *Place of the Work*.
- 11.2.5 The *Contractor* shall, as soon as practicable after entering into a contract with a *Subcontractor*:
- .1 give the *Subcontractor* written notice of the existence of the labour and material payment bond in paragraph 11.2.1(b); and
 - .2 post a notice of the bond and/or a copy of that bond in a conspicuous location at the *Place of the Work*.

PART 12 – OWNER TAKEOVER

17 GC 12.1 Ready-for-Takeover

17.2 Delete paragraph 12.1.2 in its entirety.

18 GC 12.3 Warranty

- .1 Add the following new sentence to the end of paragraph 12.3.2:

The *Contractor* warrants that the *Work* (including *Products*) will be in accordance with the *Contract Documents*, will be completed in a good and workmanlike manner and will be free from all defects and deficiencies.

- .2 Add the following to the end of paragraph 12.3.4:

The *Contractor* shall arrange a warranty inspection with the *Consultant* within a reasonable time before the warranty expires. If the *Contractor* does not arrange such an inspection or does not promptly and diligently correct any defect or deficiency in the *Work* for which it has received notice under GC 12.3, then the *Owner* may correct such defect or deficiency and the *Contractor* shall reimburse the *Owner* for all reasonable costs and expenses incurred by the *Owner* in such regard within 30 days of the *Owner* invoicing the *Contractor* for such amounts. The term “defects and deficiencies” includes all damage resulting from any defect or deficiency.

- .3 Add new paragraphs 12.3.7, 12.3.8 and 12.3.9 to read as follows:

12.3.7 Where applicable, warranties shall take into account seasonal deficiencies, such as for landscaping, and the commencement of such warranties shall commence upon the date that the seasonal deficiencies have been remedied.

12.3.8 If a defect or deficiency prevents the full and normal use or operation of the *Work* or any portion thereof, for purposes of calculating the warranty period, time shall be deemed to cease to elapse for the defective or deficient portion, and for any portion of the *Work* whose use or operation is prevented by such defect or deficiency, as of the date on which the defect or deficiency is observed and shall begin to run again when the defect or deficiency has been corrected to the satisfaction of the *Consultant*. If all outstanding defects or deficiencies have not been corrected to the satisfaction of the *Consultant* by at least 2 weeks prior to the date on which the warranty would expire, then the *Consultant* may require the *Contractor* to extend the warranty period for a further period of 1 year for those defects or deficiencies still outstanding and uncorrected.

12.3.9 The *Consultant* shall certify acceptance of the *Work* upon: (a) the satisfactory performance of the *Work* during the warranty period; (b) the *Contractor* having fully corrected all defects and deficiencies identified during the warranty period; and (c) the successful conclusion of any tests required under the *Contract*. Only certification of acceptance of the *Work* shall constitute acceptance of the *Work* or acceptance that the *Work* or any part thereof has been duly performed.

PART 13 - INDEMNIFICATION AND WAIVER

19 GC 13.1 Limitation of Liability

- .1 Add the following words to the end of paragraph 13.1.2.3:

“or loss of profit, loss of use, loss of production, loss of business, claims of customers or loss of business opportunity.”

20 GC 13.2 Waiver of Claims

- .1 Delete paragraphs 13.2.3, 13.2.4 and 13.2.5 in their entirety.

21 Add new Part 14 –THIRD PARTY AGREEMENTS as follows:

PART 14 THIRD PARTY AGREEMENTS

14.1 If funding for the *Work* of the *Contract* is being provided to the *Owner* by the Government of Manitoba and/or the Government of Canada then, as required by the applicable funding agreements, the terms and conditions set out in this Part 14 – THIRD PARTY AGREEMENTS shall apply. Notwithstanding the order of priority of documents set out in paragraph 1.1.5.1, or anything else to the contrary in the *Contract Documents*, in the event of any conflict, discrepancy or inconsistency between this Part 14 – Third Party Agreements and any other *Contract Document*, the terms of this Part 14 – Third Party Agreements shall govern and take precedence.

14.2 In the event that the obligations in this Part 14 – THIRD PARTY AGREEMENTS apply but the *Contractor* was not given notice prior to the *Contract* effective date, the *Owner* shall give the *Contractor Notice in Writing* as soon as reasonably practicable after the *Owner* becomes aware that a funding obligation under this Part 14 will apply. Actual costs legitimately incurred by the *Contractor* as a direct result of the after the fact imposition of these obligations shall be determined by the actual cost to the *Contractor* and not by the valuation methods outlined in Part 6 — CHANGES IN THE WORK, and, in all other respects, the *Contractor* shall be entitled for the such funding costs to be processed in accordance with Part 6 — CHANGES IN THE WORK.

14.3 For the purposes of this Part 14 – THIRD PARTY AGREEMENTS:

- .1 "Government of Canada" includes the authorized officials, auditors, and representatives of the Government of Canada; and
 - .2 "Government of Manitoba" includes the authorized officials, auditors, and representatives of the Government of Manitoba.
- 14.4 In addition to the indemnity obligations outlined in GC 13.1 — INDEMNIFICATION, 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 the *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.
- 14.5 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:
- .1 any injury to any person, including, but not limited to, death, economic loss or infringement of rights;
 - .2 any damage to or loss or destruction of property of any person; or
 - .3 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*.
- 14.6 The *Contractor* shall maintain and preserve accurate and complete records in respect of the *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 6 years after *Ready-for-Takeover*. Those records bearing original signatures or professional seals or stamps must be preserved in paper form; other records may be retained in electronic form.
- 14.7 In addition to the record keeping and inspection obligations elsewhere in the *Contract*, the *Contractor* shall keep available for inspection and audit at all reasonable times while the *Contract* is in effect and until at least 6 years after *Ready-for-Takeover*, all records, documents, and contracts referred to in paragraph 10.6.6 for inspection, copying and audit by the *Owner*, 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 *Owner*, 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 *Owner*, the Government of Manitoba, and/or the Government of Canada from time to time.
- 14.8 The *Contractor* consents to the *Owner* providing a copy of the *Contract Documents* to the Government of Manitoba and/or the Government of Canada upon request from either entity.
- 14.9 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 the *Contract*.
- 14.10 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*.
- 14.11 The *Contractor* shall properly account for the *Work* provided under the *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.
- 14.12 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 the *Contract*, including any employment, payments, or gifts, unless the provision or receipt of such benefits is in compliance with such codes and the legislation.

- 14.13 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 the *Contract* or from a contract with the *Contractor* or a *Subcontractor* concerning the *Work*.
- 14.14 If not already required under the insurance requirements identified in the *Contract*, the *Contractor* will be required to provide wrap-up liability insurance in an amount of no less than five million dollars (\$5,000,000) inclusive per occurrence. Such policy will be written in the joint names of the *Owner*, *Contractor*, *Consultant* and all *Subcontractors* and sub-consultants and include 12 months completed operations. The Government of Manitoba and their Ministers, officers, employees, and agents shall be added as additional insureds.
- 14.15 The *Contractor* shall obtain and maintain third party liability insurance with minimum coverage of five million dollars (\$5,000,000.00) per occurrence on all licensed vehicles operated at the *Place of the Work*. In the event that this requirement conflicts with another licensed vehicle insurance requirement in the *Contract Documents*, then the requirement that provides the higher level of insurance shall apply.
- 14.16 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 30 days' prior written notice to the Government of Manitoba in case of insurance cancellation.

END OF SECTION

PART D - GENERAL REQUIREMENTS

GENERAL

D1. GENERAL CONDITIONS

D1.1 Further to C0 Contract Format, Part D - General Requirements are applicable to the *Work* of the *Contract*.

D2. SCOPE OF WORK

D2.1 The *Place(s) of Work* for this *Contract* are:

- (a) Arlington Street from Wolseley Avenue to Portage Avenue
- (b) Burnett Avenue from Gateway Road to Brunswick Street
- (c) Gateway Road from Sun Valley Drive to McIvor Avenue

D2.1.1 Further to D2.1 and GC 1.1.8 where the *Contract* includes multiple locations, any reference to *Place of the Work* shall include either a singular location, or multiple locations, as the context requires.

D2.2 The *Work* to be done under the *Contract* shall consist of:

- (a) Mill and Fill
 - (i) Arlington Street from Wolseley Avenue to Portage Avenue
- (b) Asphalt Overlay
 - (i) Burnett Avenue from Gateway Road to Brunswick Street
 - (ii) Gateway Road from Sun Valley Drive to McIvor Avenue

D2.3 The major components of the *Work* are as follows:

- (a) Mill and Fill
 - (i) Planing of asphalt overlay
 - (ii) Full depth concrete repairs of existing slabs and joints
 - (iii) Installation of catch basins, catch pits and connection pipe
 - (iv) Adjustment of drainage inlets, water valves, curb stops and manholes
 - (v) Renewal of existing barrier curb
 - (vi) Renewal of existing modified barrier curb
 - (vii) Renewal of existing curb ramp
 - (viii) Renewal of existing sidewalk
 - (ix) Installation of detectable warning tiles
 - (x) Supply and installation of pavement repair fabric
 - (xi) Placement of asphalt overlay (average thickness – 80mm)
 - (xii) Boulevard restoration
- (b) Asphalt Overlay
 - (i) Planing of asphalt overlay (Gateway Road only at Sun Valley Drive and McIvor Avenue)
 - (ii) Full depth concrete repairs of existing slabs and joints
 - (iii) Installation of catch basins, catch pits and connection pipe
 - (iv) Adjustment of drainage inlets, water valves and manholes
 - (v) Renewal of existing barrier curb
 - (vi) Renewal of existing modified barrier curb
 - (vii) Renewal of existing curb ramp
 - (viii) Renewal of existing sidewalk

- (ix) Installation of detectable warning tiles
- (x) Supply and installation of pavement repair fabric
- (xi) Placement of asphalt overlay (average thickness – 80mm)
- (xii) Boulevard restoration

D3. DEFINITIONS

- D3.1 Capitalized terms in this Part D – General Requirements have the meanings set out in this Part D–General Requirements, unless defined in the General Conditions as amended by the Supplemental Conditions, the Specifications, or the Drawings.
- D3.2 When used in these General Requirements:
- (a) “*Construction Day*” means a day when atmospheric and site conditions at the *Place of the Work* are such that the *Contractor* is able to work at least seven (7) hours during the period between 07:00 or the time the *Contractor’s* operations normally commence, whichever is earlier, and 19:00.
 - (b) “*Total Performance*” means that the entire *Work*, except those items arising from the provisions of GC 12.3, have been *completed* in accordance with the *Contract*.

D4. CONSULTANT

- D4.1 At the pre-construction meeting, the *Consultant* will identify additional personnel representing the *Consultant* and their respective roles and responsibilities for the *Work*.

D5. CONTRACTOR'S SUPERVISOR

- D5.1 At the pre-construction meeting, the *Contractor* shall identify their designated supervisor and any additional personnel representing the *Contractor* and their respective roles and responsibilities for the *Work*.
- D5.2 At least two (2) *Working Days* prior to the commencement of any *Work* at the *Place of the Work*, the *Contractor* shall provide the *Consultant* with a phone number where the supervisor identified in D5.1 or an alternate can be contacted twenty-four (24) hours a day to respond to an emergency.

D6. FURNISHING OF DOCUMENTS

- D6.1 Upon award of the *Contract*, the *Contractor* will be provided with ‘issued for construction’ *Drawings* electronically, in PDF format only.

SUBMISSIONS

D7. AUTHORITY TO CARRY ON BUSINESS

- D7.1 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, throughout the term of the *Contract*, and shall provide the *Consultant* with evidence thereof upon request.

D8. SAFE WORK PLAN

- D8.1 The *Contractor* shall provide the *Consultant* with a Safe Work Plan at least five (5) *Working Days* prior to the commencement of any *Work* at the *Place of the Work*.
- D8.2 The Safe Work Plan shall be prepared and submitted in the format shown in the *Owner’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>

- D8.3 At any time during the term of the *Contract*, the *Owner* 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*.

D9. INSURANCE

- D9.1 The *Contractor* shall comply with the insurance as outlined in the CCDC 4 – 2023 Unit Price Contract document and CCDC 41 “CCDC Insurance Requirements” and as may be modified by the Supplementary Conditions. The certificate of insurance is to be provided in a form satisfactory to the *Owner’s* Supervisor of Insurance to:

The City of Winnipeg
Risk Management
Insurance Section
3rd Floor – 185 King Street
Winnipeg, MB R3B 1J1
Email – insurance@winnipeg.ca

D10. SUBCONTRACTOR LIST

- D10.1 The *Contractor* shall provide the *Consultant* 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) *Working Days* prior to the commencement of any *Work* on the *Place of the Work*.

D11. CONSTRUCTION EQUIPMENT LIST

- D11.1 The *Contractor* shall provide the *Consultant* with a complete list of the *Construction Equipment* which the *Contractor* proposes to utilize (Form K: Construction Equipment List) at or prior to a pre-construction meeting, or at least two (2) *Working Days* prior to the commencement of any *Work* on the *Place of the Work*.

D12. DETAILED WORK SCHEDULE

- D12.1 Further to GC 3.4, the *Contractor* shall provide the *Consultant* with a *Detailed Work Schedule* at least two (2) *Working Days* prior to the commencement of any *Work* on the *Place of the Work*.
- D12.2 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* acceptable to the *Consultant*.
- D12.3 Further to D11.2(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.
- D12.4 The *Contractor* shall provide the *Consultant* with an Accessibility Plan at least five (5) *Working Days* prior to the commencement of any *Work* on the *Place of the Work*.
- D12.5 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 *Work*. 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 *Place of the Work*.
 - (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.
- D12.6 The Accessibility Plan may also include figures, sketches, or *Drawings* to demonstrate the proposed plan.
- D12.7 The Accessibility Plan shall include written details on how the *Contractor* intends to review, maintain, and document all items related to the Accessibility Plan at the *Place of the Work* during the *Work*, including, but not limited to:
- (a) Signage
 - (b) Temporary Ramping
 - (c) Transit Stops
 - (d) Detour Signage
- D12.8 At minimum, the *Contractor* shall review the conditions at the *Place of the Work* on a daily basis to ensure that all features related to the Accessibility Plan are in place. The 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 *Contractor's* actions must be corrected immediately.
- D12.9 Any changes to the Accessibility Plan must be approved by the *Consultant*.
- D12.10 Upon request from the *Consultant*, the *Contractor* shall provide records demonstrating that the *Place of the Work* has been maintained.
- D12.11 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 *Place of the Work* 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 job meeting.
 - (b) Second Offence – A field instruction to immediately correct the *Place of the Work* will be issued by the *Consultant*.
 - (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

D13. COMMENCEMENT

- D13.1 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*.
- D13.2 The *Contractor* shall not commence any *Work* on the *Place of the Work* until:
- (a) the *Consultant* has confirmed receipt and approval of:
 - (i) evidence of authority to carry on business specified in D7;
 - (ii) evidence of the workers compensation coverage specified in GC 10.4;
 - (iii) the twenty-four (24) hour emergency response phone number specified in D5.2.
 - (iv) the Safe Work Plan specified in D7;
 - (v) evidence of the insurance specified in D8;
 - (vi) evidence of the contract security specified in GC 11.2;
 - (vii) the *Subcontractor* List specified in D9;

- (viii) the *Construction Equipment* List specified in D10;
 - (ix) the *Detailed Work Schedule* specified in D11;
 - (x) the Requirements for Site Accessibility Plan specified in D12; and
 - (xi) the direct deposit application form specified in GC 5.2.11.
 - (b) the *Contractor* has attended a pre-construction meeting with the *Consultant*, or the *Consultant* has waived the requirement for a pre-construction meeting.
- D13.3 The *Contractor* shall commence the *Work* on the *Place of the Work* within seven (7) *Working Days* of receipt of the award letter.
- D13.4 The *Owner* intends to award this *Contract* by September 11, 2026.
- D13.4.1 If the actual date of award is later than the intended date, the dates specified for Critical Stages, *Ready-for-Takeover*, and *Total Performance* will be adjusted by the difference between the aforementioned intended and actual dates.

D14. RESTRICTED WORK HOURS

- D14.1 Further to 3.10 of CW 1130, the *Contractor* shall require written permission forty-eight (48) hours in advance from the *Consultant* for any *Work* to be performed between 2000 hours and 0700 hours, or on Saturdays, Sundays, Statutory Holidays and or Civic Holidays.

D15. WORK BY OTHERS

- D15.1 Further to GC 3.2, work by others on or near the *Place of the Work* will include but not necessarily be limited to:
- (a) City of Winnipeg Geomatics Branch
 - (i) Various works on survey monuments
 - (b) City of Winnipeg Transit Department
 - (i) Temporary relocation of bus stops and reroutes as required
- D15.2 Further to D15.1, the *Contractor* in accordance with the *Contract*, 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 D15.1 or additional parties, in their construction schedule as per D11 and accommodate the necessary area on *Place of the Work* required for the work by others to complete the *Work*.

D16. SEQUENCE OF WORK

- D16.1 Further to GC 3.1, the sequence of work shall be as follows:
- D16.1.1 The *Work* on Arlington Street, Burnett Avenue and Gateway Road shall occur lane at a time
 - D16.1.2 Sidewalk *Work* is only permitted to occur on one side of a street at a time.

D17. CONSTRUCTION DAYS

- D17.1 The *Consultant* will determine daily if a *Construction Day* has elapsed and will record their assessment. On a weekly basis the *Consultant* will provide the *Contractor* with a record of the *Construction Days* assessed for the preceding week. The *Contractor* shall sign each report signifying that they agree with the *Consultant's* determination of the *Construction Days* assessed for the report period.
- D17.2 Work done to restore the *Place of the Work* to a condition suitable for *Work*, shall not be considered "work" as defined in the definition of a *Construction Day*.

- D17.3 When the *Work* includes two or more major types of *Work* that can be performed under different atmospheric conditions, the *Consultant* shall consider all major types of *Work* in determining whether the *Contractor* was able to work in assessing *Construction Days*.

D18. READY-FOR-TAKEOVER

- D18.1 The *Contractor* shall achieve *Ready-for-Takeover* within thirty (30) consecutive *Construction Days* of the commencement of the *Work* as specified in D13.

D19. TOTAL PERFORMANCE

- D19.1 The *Contractor* shall achieve *Total Performance* within thirty-five (35) consecutive *Construction Days* of the commencement of the *Work* as specified in D13.
- D19.2 When the *Contractor* or the *Consultant* considers the *Work* to be totally performed, the *Contractor* shall arrange, attend and assist in the inspection of the *Work* with the *Consultant* 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 *Consultant* notified so that the *Work* can be re-inspected.
- D19.3 The date on which the *Work* has been certified by the *Consultant* as being totally performed to the requirements of the *Contract* through the issue of a certificate of *Total Performance* is the date on which *Total Performance* has been achieved.

D20. LIQUIDATED DAMAGES

- D20.1 Further to Article A-10 of the Supplementary Conditions, if the *Contractor* fails to achieve Critical Stages, *Ready-for-Takeover* or *Total Performance* in accordance with the *Contract* by the days fixed herein for same, the *Contractor* shall pay the *Owner* the following amounts per *Construction Day* for each and every *Construction Day* following the days fixed herein for same during which such failure continues:
- (a) *Ready-for-Takeover* – Three Thousand dollars (\$3,000);
 - (b) *Total Performance* – One Thousand Five Hundred dollars (\$1,500).

D21. SCHEDULED MAINTENANCE

- D21.1 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.
- D21.2 Determination of *Ready-for-Takeover* 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

D22. JOB MEETINGS

- D22.1 Regular weekly job meetings will be held at the *Place of the Work*. These meetings shall be attended by a minimum of one representative of the *Consultant*, one representative of the *Owner* and one representative of the *Contractor*. Each representative shall be a responsible person capable of expressing the position of the *Consultant*, the *Owner* 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.

- D22.2 The *Consultant* reserves the right to cancel any job meeting or call additional job meetings whenever they deem it necessary.

D23. THE WORKPLACE SAFETY AND HEALTH ACT (MANITOBA) – QUALIFICATIONS

- D23.1 Further to GC 9.4 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 *Owner* may, at their sole discretion and acting reasonably, require updated proof of compliance.

PAYMENT

D24. FUEL PRICE ADJUSTMENT

- D24.1 Further to GC 6.8, the Fuel Factor (FF) rates will be set as follows:
- (a) The Fuel Factor rate shall be set at 2.7% of the monetary value of all *Work* based on unit prices.

WARRANTY

D25. ADDITIONAL WARRANTY

- D25.1 Further to GC 12.3, the *Consultant* may permit the warranty period for a portion or portions of the *Work* to begin prior to the date of *Ready-for-Takeover* if:
- a portion of the *Work* cannot be completed because of unseasonable weather or other conditions reasonably beyond the control of the *Contractor*, but that portion does not prevent the balance of the *Work* from being put to its intended use.
- D25.1.1 In such case the date specified by the *Consultant* for the warranty period to begin shall be substituted for the date specified in GC 12.3 for the warranty period to begin.

(See D9)

[illegible]

FORM K: CONSTRUCTION EQUIPMENT
(See D10)

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

FORM K: CONSTRUCTION EQUIPMENT
(See D10)

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

PART E - ADDITIONAL SPECIFICATIONS

GENERAL

E1. APPLICABLE SPECIFICATIONS AND DRAWINGS

- E1.1 These Additional 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: Schedule of Prices, shall apply to the *Work*.
- E1.2.1 The City of Winnipeg Standard Construction Specifications are 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) *Working Days* before the *Submission Deadline* shall apply.
- E1.2.3 Further to GC 1.1.5, Part E - Additional Specifications included in the *Contract Documents* 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 Part B - Bidding Procedures (Substitutes). In every instance where a brand name or design specification is used, the *Owner* will also consider approved equals and/or approved alternatives in accordance with Part B - Bidding Procedures (Substitutes).
- E1.4 The following are applicable to the *Work*:

<u>Drawing No.</u>	<u>Drawing Name/Title</u>	<u>Drawing (Original) Sheet Size</u>
CT-00	Cover Sheet and Location Plan	A1
CT-01	Arlington Street – Wolseley Avenue to Portage Avenue – Traffic Management and Construction Staging Plan – Stage 1	A1
CT-02	Arlington Street – Wolseley Avenue to Portage Avenue – Traffic Management and Construction Staging Plan – Stage 2	A1
CT-03	Burnett Avenue – Gateway Road to Brunswick Street – Traffic Management and Construction Staging Plan – Stage 1	A1
CT-04	Burnett Avenue – Gateway Road to Brunswick Street – Traffic Management and Construction Staging Plan – Stage 2	A1
CT-05	Gateway Road – Sun Valley Drive to McIvor Avenue – Traffic Management and Construction Staging Plan – Stage 1 & 2	A1
CT-06	Arlington Street – Wolseley Avenue to Portage Avenue – Site Plan	A1
CT-07	Burnett Avenue – Gateway Road to Brunswick Street – Site Plan	A1
CT-08	Gateway Road – Sun Valley Drive to McIvor Avenue – Site Plan	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, *Product*, *Construction Equipment*, 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 GC 5.3, 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, *Construction Equipment*, *Product* and operating supplies to the *Places of the Work*, and/or between *Places of the Work*;
 - (ii) Establishment of offices, buildings, other necessary general facilities and *Construction Equipment* parking/staging areas for the *Contractor's* operations at the *Places of the Work*;
 - (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 *Places of the Work* within the *Project*;
 - (v) Other job-related items.
 - (b) Demobilization shall include, but not be limited to:
 - (i) All activities and costs for transportation of personnel, *Construction Equipment*, *Product*, and supplies not used in the *Project* from the *Place(s) of the Work*, and/or between *Places of the Work*;
 - (ii) Disassembly, removal, and cleanup of the *Places of the Work* and restoration of offices, buildings, and other facilities assembled on the *Places of the Work*;
 - (iii) Repair of access roads, temporary haul roads, and *Construction Equipment* parking areas leaving the *Places of the Work* 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 *Place of the Work*.
- E2.5 Access to the *Places of the Work*, *Construction Equipment* parking, and staging areas are limited to that shown on the *Drawings* or as approved by the *Consultant*.
- #### MEASUREMENT AND PAYMENT
- E2.6 Payment for Mobilization:
- (a) 60% of the lump-sum price will be paid to the *Contractor* for Mobilization on the first Proper Invoice for the *Contract*.
- E2.7 Payment for Demobilization:
- (a) The remaining 40% of the lump-sum price will be paid upon:
 - (i) Restoration of the *Places of the Work* to the satisfaction of the *Consultant*;
 - (ii) Distribution of the Declaration of *Total Performance*.
- E2.8 Pay Reduction for Accessibility Plan
- (a) The Demobilization payment will be reduced by the number of pay adjustments incurred in accordance with D12 Requirements for Site Accessibility Plan and as determined by the *Consultant*.
- E2.9 Mobilization and Demobilization will be paid only once (to a maximum of 100%), regardless of the number of times the *Contractor* mobilizes to the *Place of the Work*.

E3. OFFICE FACILITIES

- E3.1 The *Contractor* shall supply office facilities meeting the following requirements:
- (a) The field office shall be for the exclusive use of the *Consultant*.
 - (b) The building shall be conveniently located near the *Place of the Work*.
 - (c) The building shall have a minimum floor area of 20 square metres, a height of 2.4m with two windows for cross ventilation and a door entrance with a suitable lock.
 - (d) The building shall be suitable for all weather use. It shall be equipped with an electric heater and air conditioner so that the room temperature can be maintained between either 16-18°C or 24-25°C.
 - (e) The building shall be adequately lighted with fluorescent fixtures and have a minimum of three wall outlets.
 - (f) The building shall be furnished with one desk, one table 3m X 1.2m and a minimum of 8 chairs.
 - (g) A portable toilet shall be located near the field office building. The toilet shall have a locking door and be for the exclusive use of the *Consultant* and other personnel from the *Owner*.
 - (h) The field office building and the portable toilet shall be cleaned on a weekly basis immediately prior to each job meeting. The *Consultant* may request additional cleaning when they deem it necessary.
- E3.2 The *Contractor* shall be responsible for all installation and removal costs, all operating costs, and the general maintenance of the office facilities.
- E3.3 The office facilities will be provided from the date of the commencement of the *Work* to the date of *Ready-for-Takeover*.

E4. PROTECTION OF EXISTING TREES

- E4.1 The *Contractor* shall take the following precautionary steps to prevent damage from *Work* activities to existing boulevard trees within the limits of the *Work*:
- (a) The *Contractor* shall not stockpile *Products* and soil or park vehicles and *Construction Equipment* on boulevards within 2 metres of trees.
 - (b) Trees identified to be at risk by the *Consultant* are to be strapped with 25 x 100 x 2400mm wood planks, or suitably protected as approved by the *Consultant*.
 - (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 *Construction Equipment* within the dripline of the trees shall be kept to the minimum required to perform the work required. *Construction Equipment* shall not be parked, repaired, refuelled; construction *Products* shall not be stored, and earth *Products* 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* 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 *Consultant* 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 *Consultant*, 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 *Consultant*. Payment shall be in accordance with CW3410.
- (b) In accordance with the City of Winnipeg's 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 the *Work* such as, but not limited to, parking restrictions, turn restrictions and loading restrictions.

- E5.2 Upon request from the *Consultant*, the *Contractor* shall provide records demonstrating that the *Place of the Work* 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 *Products* to Traffic Services at 495 Archibald Street.

- E5.4 Any changes to the approved Traffic Management Plan must be submitted to the *Consultant* a minimum of five (5) *Construction Days* prior to the required change for approval.

- E5.5 If the *Consultant* 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:

- E6.1.1 The *Contractor* shall schedule *Work* activities to meet the following:

- (a) Arlington Street – Traffic shall be one-way in accordance with *Drawings* CT-01 and CT-02. Sidewalk on one side of the street shall remain open at all times. "Sidewalk Closed" signage shall be placed at the limits of the sidewalk under construction.

- (b) Burnett Street – Traffic shall be one-way in accordance with *Drawings* CT-03 and CT-04.
 - (c) Gateway Road – Traffic shall be one-way in accordance with *Drawing* CT-05. The Northeast Pioneers Greenway multi-use pathway shall remain open during the closure of the east sidewalk. “Sidewalk Closed” Signage shall be placed at the limits of the sidewalk under construction.
- E6.1.2 Lane closures on intersecting regional streets shall be reviewed with the *Consultant* prior to submission of the lane closure request.
- E6.1.3 Should the *Contractor* be unable to maintain an existing access to a residence or business, they shall review the planned disruption with the business or residence and the *Consultant*, 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 *Consultant*, prior to disruption of access.
- E6.1.4 Pedestrian and ambulance/emergency vehicle access must be maintained at all times.

E7. REFUSE AND RECYCLING COLLECTION

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

E7.2 Collection Schedule

Arlington Street from Wolseley Avenue to Portage Avenue

<i>Collection Day(s):</i>	Friday (City collection)
<i>Collection Time:</i>	7:00am
<i>Common Collection Area:</i>	Rear alley collection except for #72 and #144 Arlington Street, which is front street pickup. The <i>Contractor</i> shall ensure the carts for #72 and #144 Arlington Street are in a location accessible for pickup. The <i>Contractor</i> shall also permit access to and from rear alleys off Arlington Street to facilitate rear alley pickup.

Burnett Avenue from Gateway Road to Brunswick Street

<i>Collection Day(s):</i>	Monday (City Collection), with Private collection various dates
<i>Collection Time:</i>	7:00am (City Collection), with Private collection various times
<i>Common Collection Area:</i>	The <i>Contractor</i> shall permit access to and from properties for City and Private collection.

Gateway Road from Sun Valley Drive to McIvor Avenue

<i>Collection Day(s):</i>	N/A
<i>Collection Time:</i>	N/A
<i>Common Collection Area:</i>	N/A

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

E8. WATER OBTAINED FROM THE CITY OF WINNIPEG

- 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 of Winnipeg 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 *Consultant*. The *Contractor* shall maintain the temporary repairs in a safe condition as determined by the *Consultant* until permanent repairs are completed. The *Contractor* shall bear all costs associated with temporary repairs and their maintenance.

E10. INSTALLATION OF DOWEL ASSEMBLIES FOR 200 MM REINFORCED CONCRETE PAVEMENT

DESCRIPTION

- E10.1 General
- E10.1.1 The specification covers the supply and installation of dowel assemblies along transverse pavement joints in 200mm reinforced concrete slab replacement and partial slab patches.
- E10.1.2 Referenced Standard Construction Specification
(a) CW 3310 – Portland Cement Concrete Pavement Works

PRODUCTS

- E10.2 Storage and Handling
- E10.2.1 Store and handle *Product* in accordance with Section 5 of CW 3310.
- E10.3 Dowel Assemblies
- E10.3.1 Dowel Assemblies in accordance with CW 3310.

CONSTRUCTION METHODS

- E10.4 The location of the transverse joints will be at a spacing as directed by the *Consultant*. The *Contractor* shall place the dowel assemblies with 19.1 mm dowel bars across the transverse joints in 200 mm reinforced concrete pavement at a spacing of 300 mm O.C. in accordance with SD-211B.

MEASUREMENT AND PAYMENT

- E10.5 Dowel Assemblies
- E10.5.1 Supply and Installation of dowel assemblies for "200 mm Type 4 Concrete Pavement (Reinforced)", "200 mm Type 4 Concrete Pavement (Type A)", "200 mm Type 4 Concrete Pavement (Type B)", "200 mm Type 4 Concrete Pavement (Type C)" and "200 mm Type 4 Concrete Pavement (Type D)", measured and accepted by the *Consultant*, will be paid for at the *Contract* unit price per metre for "Supply and Installation of Dowel Assemblies (19.1 mm)".

E11. CONSTRUCTION OF MONOLITHIC CURB AND CONCRETE SIDEWALKS

DESCRIPTION

- E11.1 This specification shall supplement CW 3325-R5 "Portland Cement Concrete Sidewalks".

MEASUREMENT AND PAYMENT

- E11.2 Add the following to Section 12:
- E11.2.1 Construction of monolithic curb and concrete sidewalks will be measured on surface area basis. The surface area to be paid for shall be the number of square metres constructed in accordance with this specification and accepted by the *Consultant*, as computed by measurements made by the *Consultant*.

BASIS OF PAYMENT

E11.3 Add the following to Section 13:

- E11.3.1 Construction of monolithic curb and concrete sidewalks will be paid for at the *Contract* Unit Price per square meter for the "Items of *Work*" listed here below, measured as specified herein, which price shall be payment in full for supplying all *Products* and for performing all operations herein described and all other items incidental to the *Work* included in this specification.
- E11.3.2 Items of *Work*:
- (a) Type 1 Concrete Monolithic Curb and Sidewalk
- E11.3.3 Concrete thickness greater than the specified sidewalk thickness as a result of shaping the base *Product* is incidental to the listed Items of *Work*.
- E11.3.4 Construction of 100mm or 150mm reveal height barrier curb, 150 mm reveal height modified barrier curb, and 8-12 mm reveal height monolithic curb ramp shall be incidental to the construction of the above Items of *Work*.

E12. ASPHALT SPECIAL PROVISION

DESCRIPTION

E12.1 General

- E12.1.1 This specification covers the requirements for the materials, *Construction 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.
- E12.1.2 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*.
- E12.1.3 The *Work* to be done by the *Contractor* under this Specification shall include the furnishing of all superintendence, overhead, labour, *Products*, *Construction Equipment*, tools, supplies and all other things necessary for and incidental to the satisfactory performance and completion of all *Work* as hereinafter specified.

E12.2 Definitions

- E12.2.1 Hot Mix Asphalt (HMA) means hot mixed, hot laid asphalt. The terms are used interchangeably. HMA may include recycled or specialty mixes.
- E12.2.2 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.
- E12.2.3 Lift means the compacted thickness of asphalt material laid in a single application.
- E12.2.4 Base Course means the layer of *Product* between the sub-base and the pavement wearing surface.
- E12.2.5 SP1 means dense-graded asphalt mix using Superpave mix design for surface course. SP1 is intended for the reconstruction of expressways, major arterials, and minor arterials, industrial/commercial collectors, residential major collectors, as well as the paving of bridge decks. SP1 can also be used for asphalt overlay of expressways, major arterials, and minor arterials, where specified in the *Contract* Documents.
- E12.2.6 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 as well as the paving of bridge decks.

- E12.2.7 MS1 means dense-graded asphalt mix using Marshall mix design for surface course. MS1 is intended for the reconstruction of intermediate and low volume streets including residential minor collectors, residential local, public lanes, asphalt pathways and associated approaches. MS1 is also intended for asphalt overlay of all street classifications and the reconstruction or asphalt overlay of all approaches except where otherwise specified in the *Contract Documents*.
- E12.2.8 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.
- E12.2.9 MS3 means a fine-graded asphalt mix using Marshall mix design intended for thin asphalt overlays and specialized surfaces such as basketball courts, tennis courts, driveways, sidewalks, boulevards, and other narrow or constrained paving areas.
- E12.2.10 Reclaimed asphalt pavement (RAP) means the processed HMA or WMA material that is recovered by partial or full depth removal.
- E12.2.11 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.
- E12.2.12 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.
- E12.2.13 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.
- E12.2.14 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.
- E12.2.15 Superpave means the method for specifying material components and asphalt mix design using the Superpave Gyratory Compactor (SGC).
- E12.2.16 Effective Asphalt Cement is the portion of asphalt binder in hot and warm asphalt mixes that remains effective (available) to coat aggregate particles and provide binding after subtracting the asphalt absorbed into the aggregate.
- E12.2.17 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.
- E12.2.18 Prime Coat means application of emulsified asphalt cement on a granular surface.
- E12.2.19 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.
- E12.2.20 Prime coat has cured when water has totally separated from the emulsified asphalt. Prime coat is required to fully set and not remain tacky before placing asphalt.
- E12.2.21 Tack coat break is when water has separated enough from the emulsified asphalt to show a color change from brown to black and remain tacky. Tack coat is not required to fully cure; however, asphalt placement shall not proceed until the emulsion has broken and sufficient bond can be achieved without pickup or tracking.
- E12.2.22 Segregation means a condition of the pavement characterized by areas with comparatively coarser texture than that of the surrounding pavement.

- E12.2.23 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.

PRODUCTS

E12.3 Handling and Storage of *Products*

- E12.3.1 All asphalt constituent *Products* shall be stored in a manner that will prevent contamination or deterioration. Access to the storage facilities shall be provided for inspection by the *Consultant*.
- E12.3.2 All fabricated and incidental *Products*, such as anti-stripping, prime coat, tack coat, etc., shall be stored in accordance with the manufacturer's instructions.
- E12.3.3 The *Consultant* shall approve all *Products* before any *Work* is undertaken. If, in the opinion of the *Consultant*, such *Products*, 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 *Consultant* and replaced by the *Contractor* at his own expense. There shall be no charge to the *Owner* for any *Products* taken for testing purposes.

E12.4 Aggregate

- E12.4.1 Aggregate shall consist of crushed stone or gravel or a combination of these *Products* conforming to the requirements of this Specification.
- (a) 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.
 - (b) 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.
 - (c) 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	MS 3
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%	100%
4.75		48% - 70%	40% - 62%	48% - 70%	55% - 70%	90% - 95%
2.36		28% - 58%	23% - 50%	28% - 58%	35% - 55%	74% - 80%
1.18		19% - 40%	15% - 35%	19% - 40%	28% - 46%	55% - 64%
0.60		13% - 30%	10% - 22%	13% - 30%	17% - 32%	35% - 46%
0.15		4% - 15%	4% - 14%	4% - 15%	4% - 12%	11% - 30%
0.075		2% - 8%	2% - 8%	2% - 8%	3% - 10%	5% - 11%
Fine Aggregate Angularity, %min (Note 2)	ASTM C1252 – Method A	45%	45%	40%	40%	40%
Clay Content (Sand Equivalency), %min (Note 3)	ASTM D2419	45%	45%	45%	40%	40%
Crush Count, %min (2 Fractured Faces) (Note 4)	ASTM D5821	95%	80%	80%	80%	80%
Flat and Elongated Particles, % Max	ASTM D4791	6%	10%	--	--	--
Absorption, %max	ASTM C127	2%	2%	2%	2%	2%
Abrasion, %max (Note 4)	ASTM C131	35%	35%	35%	35%	35%
Micro-Deval, %max (Note 4)	ASTM D6928	15%	15%	15%	17%	15%
Soundness (Note 5)	ASTM C88	Note 3	Note 3	Note 3	--	--
Lightweight Particles Content, %max (Note 6)	ASTM C123	3%	5%	3%	5%	3%

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

(d) Quarried limestone and dolomite shall not be acceptable as asphalt aggregate materials for Superpave mixes and MS1 surface lifts.

- E12.5.1 Asphalt cement shall be performance graded asphalt cement in accordance with AASHTO M 320 unless otherwise specified in the *Contract Documents*.
- (a) Use only those *Products* listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Purchasing Internet site at:
<https://legacy.winnipeg.ca/matmgmt/spec/default.stm>
- E12.5.2 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.
- E12.5.3 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.
- E12.5.4 Grades shall be tested at a temperature of 58 °C to determine the average percent recovery at 3.2 kPa (R_{3.2}) 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%.
- E12.5.5 The PGAC performance grading test result requirements shall be
- Equal to or above XX* and equal to or below -YY*; or
 - ≤ 0.5 °C below XX and ≤ 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.
- E12.5.6 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 58-34
	MS3	PG 58-34
Other lifts	SP2	PG 58-34P
	MS2	PG 58-34

E12.6 Mineral Filler

- E12.6.1 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.

E12.7 Incidental Materials

E12.7.1 Prime Coat

- (a) Prime coat shall consist of an emulsified asphalt. Method of application shall conform to the manufacturer's recommendations.
- (b) Use only those *Products* listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Purchasing Internet site at:

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

E12.7.2 Tack Coat

- (a) Tack coat shall consist of emulsified asphalt. Method of application shall conform to the manufacturer's recommendations.
- (b) Use only those *Products* listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Purchasing Internet site at:
<https://legacy.winnipeg.ca/matmgt/spec/default.stm>

E12.7.3 Reclaimed Asphalt Pavement (RAP)

- (a) Reclaimed asphalt pavement shall consist of sound durable particles produced by crushing and screening.
- (b) RAP is not permitted in Superpave mixes.
- (c) Up to 10% by mass of RAP is permitted in MS1 where used as a surface course.
- (d) Up to 15% by mass of RAP is permitted in MS1, MS2, and SP2 where used in lifts other than surface course.
- (e) RAP shall be blended during production of the asphalt and the mix produced shall consist of a uniform blend of all materials.
- (f) All physical requirements and combined aggregate gradation limits shall meet the requirements of Table CW 3410.1.

E12.7.4 Recycled Asphalt Shingles (RAS)

- (a) RAS shall be blended during production of the asphalt and the mix produced shall consist of a uniform blend of all materials.
- (b) RAS shall consist of sound durable particles produced from recovered organic asphalt, shingles, asphalt caps and asphalt rolled roofing. Fiberglass shingles are not permitted.
- (c) 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.
- (d) RAS particles shall be a maximum size of 10mm and shall otherwise meet the gradation requirements in Table CW 3410.1.
- (e) 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.

DESIGN REQUIREMENTS FOR ASPHALT PAVING MIX

E12.8 Testing Laboratories

E12.8.1 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 1st:

- (a) Valid Category "B" Asphalt laboratory certification or higher by Canadian Council of Independent Laboratories (CCIL);
- (b) A complete list of the certified testing and;
- (c) List of the field personnel and their qualifications.

E12.9 Asphalt Suppliers

E12.9.1 Asphalt suppliers must submit the following information to the Research and Standards Engineer three weeks prior to paving:

- (a) Asphalt suppliers Approval Guidelines and Application is available at the City of Winnipeg, Corporate Finance, Purchasing Division website at;
<https://legacy.winnipeg.ca/matmgt/spec/default.stm>

- (b) Names of suppliers and sources for all *Products* and admixtures;
- (c) Asphalt mix designs. The mix design shall be completed by an approved laboratory with CCIL Type "A" certification based on the asphalt type;
- (d) Copies of valid scale calibration reports for the asphalt batch plant;
- (e) Test data for aggregates (in accordance with E12.4);
- (f) 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 *Product* to be used during asphalt production;
- (g) Test data for asphalt cement (in accordance with E12.5) and the following items shall be submitted:
 - (i) The PGAC supplier and location that the product shall be supplied from;
 - (ii) All documentation from the PGAC supplier confirming the grade of PGAC;
 - (iii) Applicable mixing and compaction temperatures for the product;
 - (iv) The minimum temperature of the mix immediately after spreading as recommended by the PGAC supplier; and,
 - (v) Documentation of construction, storage, and handling requirements, including the material safety data sheet, recompaction temperature, and mix discharge temperature.
- (h) 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;
- (i) Quality control program for all *Products*, including a proposed sampling and testing plan in accordance with E12.11;
- (j) 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,
- (k) The supplier shall control dust at the plant in accordance with health, safety and environmental requirements.

E12.9.2 The City of Winnipeg, Research and Standards Engineer will conduct inspections at least once a year during production. Samples of *Products* may be taken and tested.

E12.9.3 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 *Products* taken for testing purposes.

E12.9.4 Changes in the source of any asphalt constituent *Products* will not be permitted without approval of the City of Winnipeg, Research and Standards Engineer. For new sources, all *Products* shall be tested.

E12.9.5 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.

E12.9.6 Any change in the constituent *Products* of the asphalt shall require a new asphalt mix design.

E12.9.7 No asphalt supply or placement shall proceed until the asphalt cement submittal, mix design and Job Mix Formula are approved.

E12.10 Asphalt Mix Design and Job Mix Formula

E12.10.1 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	MS3
Asphalt Cement, % total sample weight	5.3% to 6.5%	5.0% to 6.0%	5.5% to 6.5%
Effective Asphalt Cement, %min	4.8%	4.5%	4.8%
Voids in Mineral Aggregate, %min	14%	13%	16%
Voids Filled with Asphalt (%)	67% to 78%	67% to 75%	67% to 78%
Air Voids	3.0% to 5.0%	3.0% to 5.0%	3.0% to 5.0%
Marshall Stability, kN at 60°C	8 min.	8 min.	5 min.
Flow Index, units of 250 µm	8.0 to 14.0	8.0 to 16.0	8.0 to 16.0

Table CW 3410.4: Superpave Mix Requirements

Mix Properties			SP1	SP2
% of Theoretical Maximum Specific Gravity		Mix Gyratory Compaction Requirements		
	N _{initial}	8	≤ 89.0	≤ 90.5
	N _{design}	100	96.0	96.0
	N _{max}	160	≤ 98.0	≤ 98.0
Voids in Mineral Aggregate, %min			14	13
Voids Filled with Asphalt, %			67 – 75	65 – 75
Air Voids, %			3.8 – 4.2	3.8 – 4.2
Dust to Binder Ratio			0.6 – 1.2	0.6 – 1.2
Minimum Tensile Strength Ratio (TSR), % (AASHTO T283)*			80%	70%
Asphalt Cement, %min total sample weight			4.8%	4.6%
Effective Asphalt Cement, %min			4.5%	4.3%

* 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.

- E12.10.2 If the deviation between QA results and JMF exceeds those identified in Table CW 3410.5, the asphalt supplier shall submit new Mix Design(s) to the City of Winnipeg, Research and Standards Engineer for approval.

Table CW 3410.5: Maximum Deviation from JMF

Mix Properties	Maximum Deviation Between the QA Results and JMF, %
Asphalt Cement	± 0.3
Effective Asphalt Cement	± 0.3
RAP	± 5
Passing 16.0 mm, 12.5 mm, 9.5 mm sieves	5.0
Passing 4.75 mm, 2.36 mm, 1.18 mm, 0.6 mm, 0.15 mm sieves	3.0
Passing 0.075 mm sieve	1.0

- E12.10.3 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 E12.8 to E12.11 shall be

submitted to the City of Winnipeg, Research and Standards Engineer for approval. A full mix design shall be submitted every three years.

E12.11 Plant Quality Control

- E12.11.1 The asphalt supplier shall be responsible for quality control of the plant to ensure all *Products* 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.
- E12.11.2 Quality Control testing shall be conducted by a laboratory certified in accordance with the requirements of E12.8 and approved by the City of Winnipeg, Research and Standards Engineer.
- E12.11.3 The quality control program shall include all testing in accordance with Sections E12.3 to E12.11 of this Specification. A minimum of one test for aggregate gradation and asphalt *Products* shall be provided monthly during production.
- E12.11.4 Testing of any asphalt constituent *Products* 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 *Product* which fails to comply with the requirements of this specification will be rejected. *Product* that has been rejected must be removed immediately by the asphalt supplier.

SUPPLY OF *PRODUCTS*

E12.12 General

- E12.12.1 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, Purchasing Division website at:
<https://legacy.winnipeg.ca/matmgt/spec/default.stm>
- E12.12.2 Unless otherwise specified, only use of stationary asphalt mixing plants will be permitted.

E12.13 Aggregate

- E12.13.1 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.
- E12.13.2 Where blending of *Products* from one or more sources and/or sizes, each *Product* shall be placed in separate stockpiles.
- E12.13.3 Separate aggregate feeds capable of delivering a uniform flow of *Product* to the dryer shall be provided for each separate stockpile of aggregate, RAP, supplementary *Product* and VMA additive used to produce the asphalt mix.
- E12.13.4 The aggregates shall be dried at a minimum temperature of 135°C before mixing with the asphalt.

E12.14 Asphalt Cement

- E12.14.1 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 *Consultant* upon request.
- E12.14.2 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.

E12.15 Transportation of Asphalt Paving Mix

- E12.15.1 The mixture shall be transported from the plant to the *Place of the Work* 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 *Consultant*. 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.
- E12.15.2 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 *Consultant*.

CONSTRUCTION EQUIPMENT

E12.16 General

- E12.16.1 All *Construction Equipment* shall be of a type approved by the *Consultant*. The *Construction Equipment* shall be in good working condition for the duration of the Contract.

E12.17 Prime/Tack Coat Distributors

- E12.17.1 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 continuous and uniform manner both longitudinally and transversely for the full lane width.
- E12.17.2 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 *Consultant* upon request. The distributors shall contain a thermometer for measuring the temperature of the tank contents.
- E12.17.3 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.
- E12.17.4 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.

E12.18 Mechanical Pavers

- E12.18.1 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.
- E12.18.2 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.
- E12.18.3 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.

E12.19 Rollers

- E12.19.1 A rolling pattern shall be established and submitted by the *Contractor* to the *Consultant* for approval before paving. The *Consultant* shall approve any deviation from the rolling pattern during the *Work*.
- E12.19.2 The *Consultant* shall be provided with the mass of the rollers and may require they be weighed.
- E12.19.3 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

- E12.19.4 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 *Consultant*.

WORK METHODS

E12.20 General

- E12.20.1 All *Work* methods shall conform to this specification, except as otherwise approved by the *Consultant*.

E12.21 Preparation of Base Course for Asphalt Pavement

E12.21.1 General

- 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 *Consultant*.
- Where Base Course has raveled, the loose material shall be removed or recompacted to a uniform surface.

E12.21.2 Prime Coat

- 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 *Consultant*. Surfaces to be prime coated shall be free of standing water and contamination, such as mud, loose aggregate, or debris.
- The application rate of undiluted prime shall be between 0.5 to 1.0 L/m² and shall be approved by the *Consultant*.
- 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 fully 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 fully cured and set. Traffic shall not be permitted on the prime coat.
- 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.

- (e) 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 *Consultant*.
- (f) 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 *Consultant*.
- (g) 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 *Consultant*, 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.
- (h) Prime coat shall be inspected and approved by the *Consultant* before any asphalt is placed. Otherwise, the asphalt shall be rejected by the *Consultant* and shall be removed by the *Contractor* at his own expense.
- (i) 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.

E12.22 Preparation of Asphalt or Portland Cement Concrete Pavement for Asphalt Overlay

E12.22.1 Asphalt Surface Pavement

- (a) 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 *Consultant*. This *Work* will be done and paid for in accordance with Specification CW 3450.
- (b) 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.
- (c) 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 *Consultant* prior to placing asphalt.
- (d) At the locations designated on the *Drawings* and at any other locations designated by the *Consultant*, 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.

E12.22.2 Portland Cement Concrete Pavement Surface

- (a) At the locations designated on the *Drawings* and at any other locations designated by the *Consultant*, 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.

E12.22.3 Tack Coat

- (a) 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.
- (b) 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 *Consultant*.

Table CW 3410.7: Application Rate for Tack Coat

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

- (c) Tack coat shall be placed with sufficient time to break prior to paving. Asphalt mix shall not be placed on tack coated areas until the tack coat is broken for a minimum of three (3) hours or until tack coat cannot be entirely tracked by foot traffic and tires. If trackless tack is used, the breaking time can be reduced in accordance with the manufacturer's specifications unless otherwise specified by the *Consultant*. Paving and *Construction Equipment* shall not be permitted onto the tack coat until it has broken. Traffic shall not be permitted on the tack coat.
- (d) 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.
- (e) 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 *Consultant*.
- (f) Tack coat shall be inspected and approved by the *Consultant* before any asphalt is placed. Otherwise, the asphalt shall be rejected by the *Consultant* and shall be removed by the *Contractor* at his own expense.

E12.23 Placing Asphalt Paving Mixture

E12.23.1 General

- (a) The *Consultant* shall approve the surface upon which new asphalt is to be placed before paving operations may begin.
- (b) 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

- (c) Unless otherwise permitted by the *Consultant*, 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.
- (d) 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.
- (e) 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.
- (f) Pavers shall be capable of spreading the mixture, without segregation, in thicknesses as specified on the *Drawings* or approved by the *Consultant*. Placement widths shall vary from a minimum of 1.5 meters to a maximum of 4.5 meters unless approved by the *Consultant*. 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.
- (g) The term screed includes any strike-off device operated at workable temperature without tearing, shoving or gouging the finished surface.
- (h) 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 *Consultant*.

Table CW 3410.9: Lift Thicknesses

Mix Type	Thickness, mm	
	Minimum	Maximum
MS1	35	55
MS2	50	75
MS3	25	40
SP1	35	55
SP2	50	75

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

E12.23.2 Main Line Paving

- (a) 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:
 - (i) All through and parallel turning lanes greater than 15.0 meters in length;
 - (ii) Other lanes greater than 15.0 metres in length; and
 - (iii) Intersections through which the main line continues.
- (b) Main line paving with mechanical pavers shall utilize automatic grade control, except for:
 - (i) Intersections through which the main line continues and where traffic must be maintained; and,
 - (ii) The side of the paver adjacent active traffic.
- (c) Hand placement shall be minimized. Hand placed asphalt shall be spread and compacted to match the finished grade to the satisfaction of the *Consultant*.

E12.23.3 Tie-Ins and Approaches

- (a) 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 E12.23.2 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.

- (b) Tie-Ins and approaches shall utilize mechanical pavers where possible with or without automatic grade control, or hand methods as approved by the *Consultant*.
- (c) Hand placement shall be minimized. Hand placed asphalt materials shall be spread and compacted to match the finished grade to the satisfaction of the *Consultant*.

E12.23.4 Weather Limitations

- (a) 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 *Consultant* may confirm the temperature by measuring the temperature in the shade and 150 mm above the surface.

- (b) 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.
- (c) 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 *Consultant* determines to be conducive to obtaining the specified results.
- (d) Notwithstanding the above, when weather conditions are unfavourable, or are likely to become unfavourable, paving operations shall be suspended.

E12.24 Joints

E12.24.1 General

- (a) 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.
- (b) 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.
- (c) 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 *Consultant*, before the adjacent lift is laid.

E12.24.2 Location of Joints

- (a) The location of joints shall be subject to the approval of the *Consultant* and shall conform to the following requirements:
 - (i) Longitudinal joints shall not be located within 150 mm of a longitudinal joint in any underlying pavement structure.
 - (ii) 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.
- (b) 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 *Consultant*.

E12.24.3 Preparation of Joints

(a) Hot Joints

- (i) 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 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.
- (ii) 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.

(b) Cold Joints

- (i) Cold joints shall be considered to be those longitudinal and transverse joints where the existing adjacent pavement lift is at or below 90 °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.
- (ii) 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.
- (iii) Joints against existing asphalt pavements shall be prepared by saw cutting, cold planning or other method(s) approved by the *Consultant*, such that the face of the existing pavement is vertical with a square corner.
- (iv) All contact surfaces of cold joints shall be painted with a uniform coat of tack before the new asphalt is placed against them.

E12.24.4 Construction of Joints

- (a) Fresh asphalt shall not be placed against the existing lift until the joint preparation has been completed in accordance with E12.24.3 and is approved by the *Consultant*.
- (b) For asphalt reconstructions, longitudinal joints shall be prepared in accordance with E12.24.3(b) unless the *Contractor* maintains joint temperatures that meet the requirements of E12.24.3(a)(i) at the time the adjacent mat is placed. Acceptable methods to maintain hot joint conditions include, but are not limited to, echelon paving, staggered paving operations, or the use of infrared joint heating *Construction Equipment*, subject to approval of the *Consultant*.
- (c) For pavements with an asphalt overlay on residential local streets and public lanes, or where otherwise specified by the *Consultant*, cutting of longitudinal joints is not required where paving is completed as a continuous operation within the same day. Where paving is completed on separate days, longitudinal joints shall be cut unless pavement repair fabric is used, subject to approval of the *Consultant*.
- (d) 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.
- (e) 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.

E12.25 Asphalt Patching

- E12.25.1 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 *Consultant*.

E12.25.2 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 *Product* shall be placed and compacted by acceptable methods in accordance with E12.26 of this specification to the satisfaction of the *Consultant*.

E12.25.3 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".

E12.26 Compaction of Asphalt Paving Mixture

E12.26.1 General

- (a) A rolling pattern shall be established by the *Contractor* and approved by the *Consultant*. The *Consultant* shall approve any deviation from the rolling pattern.
- (b) 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

*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.

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.

- (d) 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.

E12.26.2 Rolling Procedures

- (a) Compaction of the paving mixture shall consist of three (3) separate rolling operations as follows:
 - (i) 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.
 - (ii) 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.
 - (iii) 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 continued until there is no evidence of consolidation.

E12.27 Compaction of Irregular Areas

E12.27.1 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 *Consultant*. All joints around these structures shall be effectively sealed.

E12.27.2 The asphalt may be heated to a maximum temperature of 120°C to facilitate the compaction where approved by the *Consultant*.

E12.28 Requirements After Final Rolling

E12.28.1 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 *Consultant*, and replacing it with a fresh mixture.

E12.28.2 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.

E12.29 Filling of Core Holes

E12.29.1 Where cores are collected, the *Contractor* shall patch each core hole immediately with an approved cold asphalt product.

E12.29.2 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 *Product* shall be removed from the surface.

E12.29.3 Where HMA or WMA are not available, use only those *Products* listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Purchasing Internet site at:
<https://legacy.winnipeg.ca/matmgt/spec/default.stm>

E12.30 Surface Tolerance

E12.30.1 The surface of the asphalt pavement shall be checked with a 3-metre straight edge and be within ± 5 mm from the surrounding area. Areas that do not meet these tolerances shall be corrected to the satisfaction of the *Consultant*.

E12.30.2 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.

E12.31 Opening to Traffic

E12.31.1 In no case shall traffic or *Construction Equipment* be allowed on the asphalt pavement until completion of quality assurance testing by the *Consultant* and until the completed pavement has cooled to atmospheric temperature or to such other temperature, as may be approved by the *Consultant*, that will ensure no deformation of the pavement surface under traffic loading.

E12.31.2 The *Consultant'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.

QUALITY ASSURANCE

E12.32 General

E12.32.1 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.

- E12.32.2 Field sampling and testing of asphalt shall be performed by a certified person.
- E12.32.3 The *Consultant* shall be allowed access to all sampling locations and reserves the right to request quality assurance sample(s) at any time.
- E12.32.4 Samples shall be protected during transportation from any exposure to adverse conditions.
- E12.32.5 If any sample shows distinct evidence of improper sampling, handling, or testing, the test shall be disregarded and a new sample shall be collected.
- E12.32.6 Testing in addition to the requirements of this Specification shall be as directed by the *Consultant*.

E12.33 Testing Frequency

- E12.33.1 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
MS3	< 50	1 test/day
	50 - 100	2 tests/day
	> 100	2 test/100 tonnes
SP1, SP2	--	2 test/150 tonnes

- E12.33.2 Additional testing shall be as directed by the *Consultant*.
- E12.33.3 Copies of all test results shall be sent to the City of Winnipeg, Research and Standards Engineer and to the *Consultant*.
- E12.33.4 Copies of asphalt plant scale tickets shall be provided to the *Consultant*.

E12.34 Acceptance Criteria

- E12.34.1 The *Contractor* shall reimburse the *Owner* for any additional costs the *Owner* incurs as a result of failed tests.
- E12.34.2 Where the *Work* is not funded or administered by the *Owner* or their representative, the party approved by the *Owner* to execute the *Work* will be responsible for making pay adjustments to the *Owner*.
- E12.34.3 All corrective actions shall be performed at the *Contractor's* expense.
- E12.34.4 Acceptance of asphalt shall be based on the following:
- (a) Visual Inspection:
 - (i) The *Consultant* 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.
 - (b) Bituminous Mix Properties:
 - (i) Air Voids: If the measured air voids fall outside the limits specified in E12.10 of this Specification, the *Consultant* 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 %
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MS1, MS2, MS3 SP1, SP2	≤ 0.5%	0.0
	0.5% to 1%	0.0*
	> 1%	Remove and replace at <i>Contractor's</i> expense

*Paving shall be suspended until necessary adjustments are made and approved by the *Consultant*.

- (ii) Voids in Mineral Aggregate (VMA): If the measured voids in mineral aggregate falls outside the limits specified in E12.10 of this Specification, the *Consultant* 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 <i>Contractor's</i> expense

*Paving shall be suspended until necessary adjustments are made and approved by the *Consultant*.

- (iii) Asphalt Cement Content: If the measured asphalt cement content falls outside the limits specified in E12.10 of this Specification or if it exceeds the allowable deviation for the JMF specified in Table CW 3410.5, the *Consultant* 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 <i>Contractor's</i> expense

*Paving shall be suspended until necessary adjustments are made and approved by the *Consultant*.

- (iv) Gradation: If the gradation falls outside the limits specified in Table CW 3410.1 or if it exceeds the allowable deviation for the JMF specified in Table CW 3410.5, the *Consultant* 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 <i>Contractor's</i> expense
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*Paving shall be suspended until necessary adjustments are made and approved by the *Consultant*.

(c) Density:

- (i) Density testing shall be conducted at least once every 150 m². The *Consultant* shall ensure that the density tests cover the full width of the *Work* area.
- (ii) An area is deemed unacceptable if the compaction does not meet all of the following:
 - i. The average density results shall be between 93% and 95% of the theoretical maximum density; and,
 - ii. No individual location shall be less than 90% or higher than 98% of the theoretical maximum density.
- (iii) 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 *Owner* for any additional costs associated with coring, transmittal of cores, filling of cores and testing the *Owner* incurs as a result of failed tests.
- (iv) The *Consultant* 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 <i>Contractor's</i> expense
97.9% to 97.1%	0%*
97% to 93%	0%
92.9% to 90%	0%*
< 90%	Remove and replace at <i>Contractor's</i> expense

*Paving shall be suspended until necessary adjustments are made and approved by the *Consultant*.

(d) Segregation and Surface Defects

- (i) 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 *Consultant*.

(e) Asphalt Thickness:

- (i) A Lot is deemed unacceptable if the asphalt thickness does not meet all of the following:
 - a) The average thickness is less than the required thickness; and,
 - b) No individual thickness shall be less than 90% of the required thickness.
- (ii) The *Consultant* 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 %
Less than specified thickness but more than 90% of specified thickness	0.0*
Less than 90% of specified thickness	Remove and replace at <i>Contractor's</i> expense

*Paving shall be suspended until necessary adjustments are made and approved by the *Consultant*.

MEASUREMENT AND PAYMENT

E12.35 Construction of Asphalt Pavement

E12.35.1 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 *Products* and performing all operations herein described and all other items incidental to the *Work* included in this Specification.

Items of *Work*:

- (a) Construction of Main line Paving (*)
 - (b) Construction of Tie-ins and Approaches (*)
- * Specify either MS1, MS2, MS3, SP1, or SP2

E12.35.2 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 *Consultant*, as measured on a certified weigh scale.

E12.36 Construction of Asphalt Patches

E12.36.1 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 *Products* and performing all operations herein described and all other items incidental to the *Work* included in this Specification.

E13. APPLICABLE STANDARD DETAILS

DESCRIPTION

E13.1 Further to CW 3110-R22, CW3120-R4, CW3130-R5, CW 3210-R8, CW3230-R8, CW 3235-R9, CW3240-R10, CW 3310-R19, CW 3325-R5, CW 3330-R5, CW 3335-R1, CW 3410-R12 and CW 3530-R3 this specification covers the use of updated and new standard details.

E13.2 The following updated Standard Details are provided in Appendix ‘B’:

- (a) SD-200 – Curb and Gutter
- (b) SD-211A – Construction Joint for Reinforced Concrete Pavement
- (c) SD-211B – Contraction Joint for Reinforced Concrete Pavement
- (d) SD-213B – Full-Depth Patches and Slab Replacement
- (e) SD-214A – Longitudinal Joint Repair Details Full-Width Patch (Both Sides at Same Time)
- (f) SD-214B – Longitudinal Joint Repair Details Lane-at-a-Time Patch
- (g) SD-214C – Longitudinal Joint Patch Details One Side Only
- (h) SD-216 – Steel Reinforcement for Reinforced Concrete Pavement
- (i) SD-217 – Layout for Type “A” and “B” Bar Mat Reinforcement
- (j) SD-220B – Manhole Isolation Detail in Existing Pavements

- (k) SD-220C – Curb and Gutter Inlet Isolation Detail
- (l) SD-221 – Curb Inlet with Catch Basin in Pavement
- (m) SD-222 – Curb Inlet with Catch Basin in Boulevard
- (n) SD-228A – Concrete Sidewalk
- (o) SD-228D – Sidewalk Expansion Joints

PRODUCTS

- E13.3 Use only those *Products* listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Purchasing Internet site at:
https://legacy.winnipeg.ca/finance/findata/matmgt/std_const_spec/current/Docs/Approved_Product_Surface_Works.pdf

WORK METHODS

- E13.4 *Work* shall be in accordance with the updated Standard Details in E13.2 and the referenced standard construction specifications.

MEASUREMENT AND PAYMENT

- E13.5 Measurement and payment shall be in accordance with the referenced standard construction specifications.

E14. SIDEWALK EXPANSION JOINTS

DESCRIPTION

- E14.1 Further to CW 3325-R5, CW 3235-R9 and CW 3310-R19, this specification covers the supply and installation of expansion joints to be constructed within concrete sidewalk.
- E14.2 Referenced Standard Details
- (a) SD-228D Sidewalk Expansion Joints (Appendix 'B')

PRODUCTS

- E14.3 Use only those *Products* listed as Approved Products for Surface Works. The Approved Products are available in Adobe Acrobat (.pdf) format at the City of Winnipeg, Corporate Finance, Purchasing Internet site at:
https://legacy.winnipeg.ca/finance/findata/matmgt/std_const_spec/current/Docs/Approved_Product_Surface_Works.pdf
- E14.4 Expansion Joint Filler
- (a) Sidewalk expansion joints shall be a closed-cell expansion joint filler.
- E14.5 Reinforcing Steel
- (a) Dowels bars may consist of the following:
 - (i) 300mm long 10M dowels, epoxy coated, meeting the requirements of ASTM Standard A934/A934M, Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.
 - (ii) 300mm long, 12.7mm diameter long galvanized smooth bars
 - (b) Dowel bars shall be plain round bars of grade 300 or better in accordance with CSA G40.21.
 - (c) The dowels shall be placed half depth of the sidewalk and aligned parallel to the centreline and surface of the slab with a maximum allowable tolerance of ± 5 mm. The dowels shall be positioned sufficiently rigid so the dowels are held in alignment within the specified

tolerance, both horizontally and vertically, until the concrete placing and setting cycle is complete.

- (d) All areas of the dowel bar with damaged epoxy coating shall be cleaned and painted to the satisfaction of the *Consultant*.
- (e) All dowels shall be thoroughly coated with a thin uniform coating of bond breaker or lubricant such as oil, grease, or synthetic materials to prevent bonding with the concrete for the length of the dowel. The bond breaker coating shall be smooth and free of voids.

WORK METHODS

- E14.6 Install sidewalk expansion joints as detailed in SD-228D Sidewalk Expansion Joints.
- E14.7 Expansion joints shall be constructed and installed as indicated in the *Contract* or directed by the *Consultant*.
- E14.8 The fiber joint filler shall extend the full width and depth of the sidewalk. Any excess *Product* shall be trimmed to match the surface of the concrete.
- E14.9 Dowels shall be placed at 0.45m O/C spacing. Three dowels shall be installed at each expansion joint no closer than 0.15m from edge of concrete. If dowels are displaced during concrete placing operations, concrete placement shall cease and shall not resume until the displaced dowels have been reset to the true design position.
- E14.10 Once dowels are in position, they shall be inspected and approved by the *Consultant* before any concrete is placed. Otherwise the concrete will be rejected by the *Consultant* and shall be removed by the *Contractor* at their own expense.
- E14.11 Expansion joints shall be installed every 15 meters when constructing new or renewing existing sidewalk. If sidewalk is constructed during cold weather concreting period, expansion joints shall be installed every 12 meters. Expansion joints shall not be installed when renewing less than 15m of sidewalk.
- E14.12 Where the *Drawings* call for a new slab to be tied into an existing slab along a transverse joint, the *Contractor* shall construct an expansion joint and install dowels into the existing slab in accordance with 6.3.2., CW 3310. Following installation of dowels, the ends of the dowels that extend into the new area shall be completely coated with a thin uniform coating of approved bond breaker or lubricant.
- E14.13 When replacing heaved panels in an existing sidewalk, expansion joints shall be installed on both ends of the replaced panels.
- E14.14 Expansion joints shall not be installed when constructing monolithic curb and sidewalk.
- E14.15 Expansion joints shall be installed when constructing separate concrete splash strip.

MEASUREMENT AND PAYMENT

- E14.16 No payment shall be made for supplying all *Products* and for performing all operations herein described and all other items incidental to the *Work* included in this Specification.

E15. BARRIER CURB AND ARCHED GUTTER INLET FRAME, BOX AND INLET COVER

DESCRIPTION

- E15.1 General
 - E15.1.1 This Specification shall cover the replacement of Barrier Curb and Gutter Inlet Frame and Box (AP-011) and Inlet Cover (AP-012) with Barrier Curb and Arched Gutter Frame, Box and Inlet Cover on existing Catch Pits and Catch Basins, and with Installation of New Catch Pits (SD-023) and New Catch Basins (SD-024).
- E15.2 Referenced Standard Construction Specifications

- (a) CW 3210 – Adjustment of Pavement and Boulevard Structures;
- (b) CW 2130 – Gravity Sewers; and
- (c) Barrier Curb and Arched Gutter Inlet Frame, Box and Inlet Cover (Appendix 'C').

PRODUCTS

E15.3 Approved Products

- (a) D&L Foundry Inc. – TF-103-3F-A (frame)
- (b) D&L Foundry Inc. – TF103-SI (box)
- (c) D&L Foundry Inc. – TF-103-G-A (cover)

MEASUREMENT AND PAYMENT

E15.4 Barrier curb and arched gutter inlet frames, boxes and inlet covers for catch basins and catch pits will be included in the price for Items of *Work* "Catch Basin" and "Catch Pit", as per 4.4 of CW 2130.

E15.5 Barrier curb and arched gutter inlet frames, boxes and inlet covers will be measured on a unit basis and paid for at the *Contract Unit Price* per unit for the "Barrier Curb and Arched Gutter Inlet Frame, Box and Inlet Cover". The number of units to be paid for will be the total number of each unit supplied and installed in accordance with this specification, accepted and measured by the *Consultant*.

E16. OPERATING CONSTRAINTS FOR WORK IN CLOSE PROXIMITY TO CRITICAL WATER INFRASTRUCTURE

E16.1 Description

E16.1.1 This Section details operating constraints for all *Work* to be carried out in close proximity to the City of Winnipeg feeder mains and other critical water infrastructure. Close proximity shall be deemed to be any *Work* 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.

E16.2 The following shall be considered critical pipelines and water infrastructure for this project:

E16.2.1 600 mm Water Main on Gateway Road at Burnett Avenue

E16.2.2 750 mm Feeder Main on Gateway Road between Sun Valley Drive and McIvor Avenue

E16.3 General Considerations for *Work* in Close Proximity to Critical Water Infrastructure:

E16.3.1 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 *Work* and inadvertent damage caused to the pipe would likely have catastrophic consequences.

E16.3.2 *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 *Work*-related loads, including excessive vibrations and/or concentrated or asymmetrical lateral loads during backfill placement.

E16.3.3 *Work* in close proximity to critical infrastructure shall not commence until both the *Construction Equipment* and Construction Method Statements have been submitted, reviewed, and accepted by the *Consultant*.

E16.4 Submittals

E16.4.1 Submit proposed *Construction Equipment* specifications to the *Consultant* for review a minimum of five (5) *Construction Days* prior to the *Work*. The *Construction Equipment* submission shall include:

- (a) *Construction Equipment* operating and payload weights;
- (b) *Construction 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.

E16.4.2 Submit a Construction Method Statement to the *Consultant* a minimum of five (5) *Working Days* prior to the *Work*. 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 *Work* activities in close proximity to the feeder main and permit the *Consultant* to review the proposed construction plans.

E16.4.3 Incomplete or partial submissions will not be reviewed and will be returned to the *Contractor* for re-submission.

E16.4.4 Allow five (5) *Construction Days* for review by the *Consultant*.

E16.5 Feeder Main Operational Limitations

E16.5.1 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 *Owner* 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 *Owner'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 *Owner* 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.

E16.5.2 Scheduling Restrictions:

- (a) Temporary feeder main shutdowns are typically limited to off-peak demand seasons (September 15th to May 15th) and low demand hours including evenings or other low demand periods.

E16.5.3 The *Contractor* shall provide Notice to the *Consultant* in writing, a minimum of fifteen (15) *Construction Days* prior to requiring the shutdown. The *Owner* will endeavour to schedule the shutdown as requested.

E16.6 Pre-*Work*, Planning and General Execution

E16.6.1 No *Work* shall commence in close proximity to feeder mains, chambers, and critical infrastructure until the *Construction 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 *Construction Equipment* that has been reviewed and quantified in terms of its loading implications on the pipe.

E16.6.2 Contact the City of Winnipeg Water and Waste Department, Construction Services Coordinator prior to commencement of the *Work*.

- E16.6.3 Locate feeder mains and water mains and confirm their position horizontally and vertically at the proposed the following locations prior to undertaking *Work* in close proximity to the identified feeder mains. Note, exact locations to be identified in the field. Deviations from the elevations noted on the *Drawings* shall be reported to *Consultant* for review prior to proceeding with *Work*:
- E16.6.4 Visually delineate all critical infrastructure identified herein at the *Place of the Work* by use of paint, staking/flagging, construction fencing, snow fencing, or other suitable methods.
- E16.6.5 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.
- E16.6.6 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 *Construction Equipment* speeds to levels that minimize the effects of impact loading to the critical infrastructure.
- E16.6.7 Only *Construction 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.
- E16.6.8 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).
- E16.6.9 Granular *Product*, construction *Product*, soil, and/or other *Product* (materials) shall not be stockpiled on the pipelines or within 5 m of any feeder main, valve chamber, or other critical infrastructure identified herein.
- E16.6.10 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 *Consultant*, all superintendents, foreman, and heavy equipment operators to make all workers at the *Place of the Work* 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 at the *Place of the Work* and near the crossing.
- E16.7 Demolition, Excavation, and Shoring
- E16.7.1 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 handheld jackhammers for pavement removal will be allowed.
- E16.7.2 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.
- E16.7.3 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.

E16.7.4 *Construction 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.

E16.7.5 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).

E16.7.6 Excavation and base placement for sidewalks and approaches shall be completed shall be completed remotely with limitations as specified herein.

E16.8 Underground Construction and Trenchless Pipe Installation

E16.8.1 Where removing existing catch basins are noted on the *Drawings*, expose feeder main where catch basin is closer than 3 metres from Feeder Main. Where the *Consultant* determines removal of catch basin may undermine pipe foundation, remove catch basin to the top of the feeder main and abandon catch basin in place.

E16.8.2 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.

E16.9 Subgrade Construction

E16.9.1 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.

E16.9.2 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 *Construction Equipment* without rutting.

E16.9.3 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.

E16.9.4 Fill *Product* 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.

E16.9.5 Only use compaction *Construction Equipment* approved by the *Consultant* to compact fill *Products* above critical pipelines. Compaction of fill *Products* shall be completed using static methods only, no vibratory compaction will be allowed within the limits noted in these recommendations.

E16.9.6 *Work* 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.

E16.10 Subbase and Base Course Construction

E16.10.1 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.

E16.10.2 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 *Construction Equipment* such as handheld plate packers or smaller roller equipment.

E16.11 Paving

E16.11.1 When constructing asphalt pavements only non-vibratory compaction may be used within 3m (horizontal) of the centre of the feeder main.