

Town of Lunenburg





**Montague Street Retaining
Wall**

Issued for Tender

**June 2024
Tender No. TOL2024018**

Town of Lunenburg

Montague Street Retaining
Wall - Tender No.
TOL2024018

	Issued for Tender	WMM	June 27/24	AHM
	Revision & Title	Reviewed By:	Date	Issued By:
				

THESE PROJECT DOCUMENTS HAVE BEEN PREPARED FOR USE WITH AND REQUIRE BEING READ IN CONJUNCTION WITH **THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES** AS PUBLISHED BY THE NOVA SCOTIA ROAD BUILDERS ASSOCIATION - CONSULTING ENGINEERS OF NOVA SCOTIA AND THE **JOINT COMMITTEE ON CONTRACT DOCUMENTS**. COPIES OF THESE DOCUMENTS ARE AVAILABLE FROM THE JOINT COMMITTEE ON CONTRACT DOCUMENTS, 18 LAURIER STREET, DARTMOUTH, NS, B3A 2G7; PHONE: (902)233-9362 OR BY EMAIL AT: NSMUNICIPALSERVICES@GMAIL.COM

The Table of Contents includes sections applicable to this project and also indicates those sections in the Standard Specification for Municipal Services that have revisions and new sections added.

<u>SUBJECT</u>	<u>SECTION</u>
<u>BIDDING AND CONTRACT REQUIREMENTS</u>	
Information to Tenderers	00 21 13
Tender Form - Stipulated Price	00 41 42
Form of Agreement	00 53 43
Supplementary General Conditions	00 73 00
<u>SUPPLEMENTARY SPECIFICATIONS</u>	
General Requirements (Revised)	01 10 00
Environmental Protection (Revised)	01 57 00
Concrete (new)	03 30 00
Earthwork (Revised)	31 20 00
Reinstatement (Revised)	32 98 00
Standard Details (Revised)	39 00 00

**BIDDING AND CONTRACT
REQUIREMENTS**

1. A complete Tender is comprised of the following:
 - a) The Tender Form in its entirety, with all pages and spaces for entry of information by Tenderers filled in as instructed.
 - b) Acknowledgment of addenda received by the Tenderer during the tendering period.
 - c) Tender Security (refer to clause 12 herein).
2. Sealed, hard copy tenders must be clearly marked "Montague Street Retaining Wall" and must be submitted to Curtis Bell, Procurement Coordinator at 119 Cumberland Street, Lunenburg, NS B0J 2C0 before **2:00 p.m. local time on Tuesday July 23rd, 2024** (the "Closing Time"). Tenders submitted by email, fax, or by any other method may be rejected unopened in the sole and absolute unfettered discretion of the Town of Lunenburg (the "Town"). The Town shall have the right in its absolute and unfettered discretion to determine whether a tender has been received prior to the Closing Time. An electronic submission in pdf file format on a USB is also required to be submitted with the hard copy tender. Tender prices must remain open and available for acceptance by the Town for 90 days after the Closing Time
3. Tender opening will occur at Town Hall following Tender Closing. Tender opening will be public.
4. Before tendering, Tenderers shall have examined the *Site* of the work and shall have satisfied themselves as to the working conditions, including labour conditions and labour rules, the nature and kind of work to be done, any special risks associated therewith and all other matters which may be necessary in order to form a proper conception under which the work will be required to be performed. Tenderers shall not be entitled to claim at any time after closing of tenders that there was any misunderstanding in regard to all such conditions.
5. When forming their estimates and preparing their tenders, Tenderers shall take full cognizance of the content of all the Contract Documents listed in Section 00 41 42 - Tender Form - Stipulated Price.
6. Any additional information or questions regarding the Tender or Contract documents must be in writing and addressed to Curtis Bell, Procurement Coordinator, (902) 634-4416 (fax), purchasing@townoflunenburg.ca Questions with respect to the technical aspects of the Specifications etc. must be in writing and addressed to the *Town Engineer* at 119 Cumberland Street, PO Box 129, Lunenburg, NS, B0J 2C0, Attention: Tyson Joyce, P.Eng., at tjoyce@townoflunenburg.ca or Fax: 902-634-4416, not less than two (2) working days before Tender Closing. Tenderers will be advised simultaneously of any decisions on such matters as necessary by means of addenda (which will be serially numbered) and all addenda issued shall be incorporated into the Contract Documents.
7. Tenderer shall fill in the Completion Time and is notified that the completion date based on this may be taken into account in considering the tenders.

8. The Agreement is included in the Contract Documents at the time of tendering and is provided for information only and shall not be completed at the time of tendering.
 9. The appending of any qualifying clauses to the tender or failure to comply with these instructions and with all other relevant provisions contained in the documents in the completing of any tender may render such tender liable to disqualification as determined by the *Owner*.
 10. Contract Price to exclude HST. Harmonized sales tax shall be indicated as a separate amount and included in the *Total Amount Payable*.
 11. Each tender shall be accompanied by Tender Security in the amount of ten percent (10%) of the *Total Amount Payable* in evidence of the bona fide nature of the tender.
 12. Tender Security shall be in favour of the *Owner* and shall be in the form of a Certified Cheque, irrevocable Letter of Credit or a Bid Bond which shall guarantee to the *Owner* that in the event of the successful Tenderer declining to enter into a formal agreement with the *Owner* as called for in the Contract Documents, or declining or neglecting to provide the Insurance or Contract Security required by the Contract Documents, then the *Owner* will be reimbursed the additional cost of accepting another tender or Tender Security amount, whichever is the lesser.
 - .1 The bonds shall be issued by a company whose guarantee bonds are acceptable to the Government of Canada. Use the latest edition of CCDC Form 220 or similar.
 13. The Tender Security of the unsuccessful Tenderers will be returned to them after the *Owner* enters into a formal agreement with the successful Tenderer or the expiration of validity of their tenders, whichever occurs first.
 14. On the written acceptance by the *Owner* of a tender, that tender becomes the Contract and the Tenderer who has submitted it becomes the Contractor. The Contractor will be required to enter into a formal agreement with the *Owner* following receipt of a written notice of acceptance from the *Owner*. The written notice of acceptance forms a Contract Agreement until the formal "Agreement" is executed.
 15. Within seven (7) days of written acceptance of a tender Contractor shall provide Contract Security in the amount and form as specified in Section 00 73 00, subsection 14.1 and Insurance as specified in CCDC 18-2023, GC 11.1 and CCDC 41.
 16. Complete the Tender Form and have corrections initialled by the individual signing the tender.
-

17. The Owner will not defray any expenses whatsoever incurred by Tenderers in the preparation and submission of their tenders. The Owner reserves the right to waive any formality or technicality in any tender.
 18. The Town reserves the right to reject any and all tenders. Neither the lowest nor any tender will necessarily be accepted. The Town reserves the right to accept a tender other than the lowest tender based on any criteria and/or accept a tender which may in any way be non-compliant which in its sole and absolute discretion the Town deems to be in its best interest. The Town reserves the right in its sole and absolute discretion to reject a tender on any basis whatsoever including if a tender is incomplete, conditional or obscure, or which contains additions not called for, or for irregularities of any kind. Not to limit the generality of the foregoing, if the Town has (in its sole and absolute discretion) any concerns about any internal budget or other issues that may arise in light of the amounts and/or other criteria set out in the tenders it receives, then the Town may cancel the tender process and may (in its sole and absolute discretion) negotiate directly with any tenderer or other person as the Town deems fit. By participating in this tender process, each tenderer is deemed to have waived any and all rights to make any type of claim whatsoever against the Town arising out of this tender process.
 19. Tenders, which in the opinion of the Owner are considered to be informal or unbalanced, may be rejected.
 20. Tenders may be amended or withdrawn without penalty, by letter, or facsimile, (902)634-4416, prior to Tender Closing. Amendments shall not disclose either original or revised total price.
 - .1 Head amendment or withdrawal as follows: "[Amendment]/[Withdrawal] of Tender for the "Town of Lunenburg, Tannery Road Watermain Replacement". Sign and seal as required for tender and submit at fax number provided above. All Submissions must be received prior to Tender Closing.
 - .2 For response submitted by fax, responders may revise their bid by facsimile or letter, provided that the revision is received prior to Closing. Revisions by facsimile must be sent to the facsimile number as indicated above. The Owner will not be responsible for any failure attributable to the mechanical or electronic transmission or reception of the facsimile.
 21. Tenderers are encouraged to attend a non-mandatory *site* meeting, held at the **Site on Tuesday July 16, 2024 at 10:00am**. Questions may be asked and description of the Work may be discussed during this meeting, however no minutes of the meeting will be distributed. Modifications made by way of addenda, to tendering requirements or the Contract Documents, shall be binding.
 22. The Contractor shall comply with the requirements of all relevant Federal and Provincial legislation and regulations. In particular, the Contractor, prior to the execution of the contract, shall file with the Town a certification that they carry Workers Compensation benefits for their employees and shall also comply with all other relevant Federal and Provincial legislation and regulations with respect to their
-

employees, including the Nova Scotia Occupational Health and Safety Act and its regulations. The Contractor must provide proof of current Construction Safety Nova Scotia Association Certificate of Recognition (COR) Certification, if applicable. The successful Bidder shall be solely responsible for safety and for compliance with the rules, regulations, and practices required by the applicable health and safety legislation and shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work, including any and all orientation and regular meetings throughout.

23. The Contractor shall not be entitled to assign or transfer this contract or any rights or obligations thereunder. The Contractor cannot subcontract out any portion of the work under this contract except with the express written consent of the Town. This contract may be cancelled by the Town in its sole and absolute discretion, with or without prior notice to the Contractor.
24. Should there be any questions regarding the interpretation of the Tender or Contract documents, the Lunenburg Town Council shall decide on the correct interpretation.
25. Contractor must be of legal age to sign contracts in the Province of Nova Scotia.
26. Award is subject to Town council approval for all tenders over \$100,000.00 (plus HST).

TO: Town of Lunenburg

FROM: _____

The undersigned Tenderer, having carefully read and examined the undermentioned Contract Documents prepared by CBCL Limited for the completion of the Town of Lunenburg, Montague Street Retaining Wall, Tender No. TOL2024018, which comprise all the tender documents in accordance with the following documents:

- Tender Form - Stipulated Price
- Agreement Between Owner and Contractor
- Definitions
- General Conditions of the Stipulated Price Contract - CCDC 18-2023
- Supplementary General Conditions
- Specifications
- Drawings
- Addendum/Addenda

hereby accepts the same as part and parcel of the Contract herein referred to, and having carefully examined the locality and site of Work and having full knowledge of the work required and of the materials to be furnished and used, does hereby Tender and offer to enter into a contract to perform and complete, the whole of the said Work and provide all necessary labour, plant, tools, materials and equipment and pay all applicable taxes, as set forth and in strict accordance with the Specifications, Drawings and other Contract Documents and to do all therein called for on the terms and conditions and under the provisions therein set forth as follows.

CONTRACT PRICE \$ _____

ADD HST (15% OF CONTRACT PRICE) \$ _____

TOTAL AMOUNT PAYABLE \$ _____

Tenderer's HST Registration No. _____

COMPLETION TIME

1. Tenderers agrees to achieve Ready for Takeover of the Work within _____ weeks from written notification of Award.

The Undersigned Tenderer:

- .1 Declares that this tender is valid for acceptance until _____, 202____ (being ninety (90) calendar days from the Tender Closing).
- .2 Declares that the Contract Price set forth in the Tender Form has been correctly computed for the purposes of this tender and that it includes and covers all duties, and handling charges; transportation; and all other charges. Harmonized sales tax is not to be included in the Contract Price.
- .3 Hands you herewith by way of Tender Security a Bid Bond or Certified Cheque or irrevocable Letter of Credit in the amount of ten percent (10%) of the *Total Amount Payable* on the understanding that in the event of this tender not being accepted by you, then this Tender Security will be returned to the undersigned Tenderer either at the time that the Contract is entered into with some other Tenderer, or at the expiration of validity of this tender, whichever is the sooner.
- .4 Undertakes in the event of your acceptance of this tender, to execute a formal agreement in the form hereto attached, within seven (7) calendar days of written acceptance and further agrees to provide the Contract Security as specified in Part 14 of Section 00 73 00 - Supplementary General Conditions, and Insurance as specified in GC 11.1.
- .5 Undertakes, in the event of your acceptance of the Tender, to achieve *Ready for Takeover* within the number of weeks of written notification of Award indicated above.
- .6 Upon request, provide evidence of ability and experience within seven (7) calendar days of request, including experience in similar *Work*, *Work* currently in progress, senior supervisory staff available for the *Work*, equipment available for the *Work*, and financial resources.
- .7 Agrees that in the event of failing or neglecting either to provide the Contract Security and Insurance and/or to execute the Agreement in the manner herein before undertaken, then the Tender Security shall be forfeited.
- .8 Agrees that unless and until a formal agreement is prepared and executed, this tender together with your written acceptance thereof shall constitute a binding Contract between us.
- .9 Understands and agrees that the *Owner* is not bound to accept the lowest or any tender which they may receive.
- .10 Agrees to provide, maintain and pay for the insurance coverages specified in the Contract Documents. One copy of all insurance policies of the Contractor and two copies of certificates of insurance, certifying to the issuance of all insurance policies, shall be furnished to the *Owner*. Each and every insurance policy shall name the Contractor, *Owner* and *Consultant* as being insured in the full amount of the insurance.

- .11 Declares to have personal knowledge of the location of the proposed *Work* and is informed as to the actual conditions and requirements, including labour conditions and labour rules and shall not claim at any time after execution of the Agreement that there was any misunderstanding in regard to such conditions and requirements.
- .12 Declares to have carefully examined the documents and Addenda No. _____ to _____ referred to in the first paragraph of this Tender Form, and the Tenderer hereby accepts and agrees to the same as forming a part of the Contract.
- .13 Understands that in the event that the tendered Contract Price is not within the project budget, the *Owner* has the right to negotiate the Contract with the low bidder or reject all tenders received.
- .14 Agrees that the Warranty Period defined in the Contract Documents shall be for a period of one (1) year from the date of Ready-for-Takeover of the *Work*.
- .15 Understands Contract Security, as specified herein, will be retained until the expiration of the Warranty Period.
- .16 Understands that Substantial Performance of the *Work* will be established in accordance with General Conditions of the Contract and applicable lien legislation at the Place of *Work*.
- .17 Understands that after the issuance of the certificate of Substantial Performance of the *Work* by the Consultant, provided that the Contractor has relieved the *Owner* from any and all claims, demands and lien claims for and in respect of the Contract, and has completed all outstanding items and corrected all deficiencies, the Contractor shall submit an application for Final Payment and the Consultant will thereafter prepare the Final Certificate for payment in accordance with the General Conditions of the Contract and applicable lien legislation at the Place of *Work*.
- .18 Understands that *Ready for Takeover* will only be given when the Contractor has completed all outstanding items and corrected all deficiencies. The Contractor can then submit an application for Final Payment and the *Consultant* will thereafter prepare the Final Certificate for payment in accordance with the General Conditions of the Contract.
- .19 Understands that the payment of holdback will be in accordance with the General Conditions of the Contract and subject to the provisions of the lien legislation applicable to the Place of *Work*.
- .20 Understands the occupational Health and Safety Legislation and any Workers or Workplace compensation legislation applicable to the Place of the *Work* and declares that they are in good standing and have all necessary certification as required by such legislation.
- .21 Agrees that time shall be construed as being of the essence of the Contract.
-

Town of Lunenburg
Montague Street Retaining Wall
Tender No. TOL2024018

TENDER FORM -
STIPULATED PRICE

Section 00 41 42
Page 4
June 2024

DATED THIS _____ DAY OF _____, 202____.

[Seal]

Name of Firm Tendering

Signature of Signing Officer

Witness

Name and Title (Printed)

Witness

Signature of Signing Officer

Name and Title (Printed)

Company Address

Telephone No.

Fax No.

*NOTE: Tenders submitted by or on behalf of any Corporation must be signed and sealed in the name of such Corporation by a duly authorized officer or agent.

END

This Agreement made on the ____ day of _____ in the year 2024.

BY AND BETWEEN

Town of Lunenburg

hereinafter called the "Owner"

and

hereinafter called the "Contractor"

The Owner and the Contractor agree as follows:

ARTICLE A1 - THE WORK

The Contractor shall:

.1 Perform the Work required by the Contract Documents for

Montague Street Retaining Wall

Tender No. TOL2024018

located at Lunenburg, NS for which the Agreement has been signed by the parties, and for which

CBCL Limited is acting as and is hereinafter called the "Engineer",

and

.2 do and fulfill everything indicated by this Agreement, and

.3 commence the Work by the ____ day of _____ in the year 2024 and achieve Ready-for-Takeover of the Work within ____ weeks from written notification of Award.

ARTICLE A2 - AGREEMENTS AND AMENDMENTS

The Contract supersedes all prior negotiations, representations, or agreements, either written or oral, relating in any manner to the work, including the bidding documents that are not expressly listed in Article 3 of the Agreement.

ARTICLE A3 - CONTRACT DOCUMENTS

The following are the Contract Documents referred to in Article A1 of the Agreement - THE WORK:

- .1 Standard Specifications for Municipal Services listed in Table of Contents Page Dated January 2024.
- .2 Tender Form - Stipulated Price
- .3 Form of Agreement
- .4 General Conditions of the Civil Work Contract
- .5 Supplementary General Conditions
- .6 Supplementary Specifications
- .7 Drawings

<u>Dwg. No.</u>	<u>Title</u>
C00	Cover
S01	General Notes
S02	Existing Condition - Plan and Sections
S03	New Construction - Plan, Sections, and Details

- .8 Addenda__ through _____.

ARTICLE A4 - CONTRACT PRICE

- .1 The estimated Contract Price, excluding the amount of HST is:

_____/100 dollars _____

- .2 All amounts are in Canadian funds.
- .3 These amounts shall be subject to adjustments as provided in the Contract Documents.

ARTICLE A5 - PAYMENT

- .1 The Owner shall pay the Contractor in Canadian funds for the performance of the Contract.
- .2 The Owner shall make monthly payments on account to the Contractor for the Work performed, as certified by the Engineer, subject to a 10% holdback.
- .3 The amount of the monthly payments shall be calculated as follows:
 - .1 The quantity for each pay item on which actual work has been performed shall be measured in accordance with the Cost Breakdown table of items specified in Section 01 10 00.
 - .2 For each pay item a percent completion will be provided by the Contractor and confirmed by the Owner or Engineer. The Contractor will be paid in accordance with this confirmed amount. The percent completion will be multiplied against the value of the pay item.
 - .3 The total value of work completed for the payment period shall be calculated by adding the total of the products for all pay items.

- .4 The amount of the monthly payment shall be determined by deducting the 10% holdback and the total of all previous payments from the total value of such completed work as determined under subsection 6.3.4 of this section.
- .5 To the total amount calculated in 5.3.3 above, the Harmonized Tax will be added.
- .4 The last day of the payment period shall be the last day of the month.
- .5 Upon Substantial Performance of the Work as certified by the Engineer the Owner shall pay to the Contractor the holdback monies then due in accordance with the provisions of Section 00 72 45 - General Conditions, subsection GC5.6 -SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK.
- .6 Upon the issuance of the final certificate for payment, Work as certified by the Engineer the Owner shall pay to the Contractor the balance of monies then due in accordance with the provision of Section 00 72 45 - General Conditions, subsection GC5.7 - FINAL PAYMENT.
- .7 In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payment shall be made to the Contractor in accordance with the provisions of Section 00 72 45 - General Conditions, subsection GC11.1 - INSURANCE.
- .8 If the Owner fails to make payments to the Contractor as they become due under the terms of the Contract, interest shall be payable as follows:
 - .1 The annual interest rate applicable to the contract is 2% compounded semi-annually.
 - .2 Interest shall be calculated on the overdue balance from the due date.

ARTICLE A6 - RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING

- .1 Notices in writing shall be addressed to the recipient at the address set out below.
 - .2 The delivery of a notice in writing shall be by hand, courier, prepaid first class mail, or e-mail.
 - .3 A notice in writing delivered by one party in accordance with this Contract shall be deemed to have been received by the other party on the date of delivery if delivered by hand or courier, or if sent by mail it shall be deemed to have been received five (5) Working Days after the date on which it was mailed.
 - .4 A notice in writing sent by facsimile or e-mail shall be deemed to have been received on the date of its transmission provided that if such day is not a Working Day or if it is received after the end of normal business hours at the place of receipt, then it shall be deemed to have been received at the opening of business at the place of receipt on the first Working Day following the transmission thereof.
-

.5 An address for a party may be changed by notice in writing setting out the new address delivered to the other party in accordance with this Article.

.1 The Owner at 119 Cumberland Street, Lunenburg, NS B0J 2C0

.2 The Contractor at _____

.3 The Engineer at 1505 Barrington Street, Suite 901,
Halifax, NS B3J 2R7

ARTICLE A7 - SUCCESSION

The Contract Documents listed in Article A3 herein are to be read into and form part of the Agreement and the whole shall constitute the Contract between the parties and subject to law and the provisions of the Contract Documents shall endure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors, and assigns.

ARTICLE A8 - RIGHTS AND REMEDIES

No action or failure to act by the Owner, Engineer, or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

ARTICLE A9 - TIME

Time shall be construed as being of the essence of the Contract.

ARTICLE A-10 SEVERABILITY

Each and every paragraph, section, clause, sub-clause or other component of the *Contract* is severable one from the other. Should it be found by a court of competent jurisdiction that any one or more paragraphs or parts thereof are null and void, the validity of the remaining paragraphs or parts thereof shall not be affected.

In witness whereof the parties hereto have executed this Agreement and by the hands of their duly authorized representatives.

SIGNED AND DELIVERED
In the presence of:

OWNER

Town of Lunenburg
Name of Owner

WITNESS

Signature

Name and Title of Person Signing

Signature

Signature

Name and Title of Person Signing

Name and Title of Person Signing

CONTRACTOR

Name of Contractor

WITNESS

Signature

Name and Title of Person Signing

Signature

Signature

Name and Title of Person Signing

Name and Title of Person Signing

N.B. Where legal jurisdiction, local practice or Owner or Contractor requirements calls for (a) proof of authority to execute this document, attach such proof of authority in the form of a certified copy of a resolution naming the representative(s) authorized to sign the Agreement for and on behalf of the corporation or partnership; or (b) the affixing of a corporate seal, this Agreement should be properly sealed.

END

These Supplementary General Conditions amend the Definitions and General Conditions of the Civil Works Contract (CCDC 18-2023).

AGREEMENT BETWEEN OWNER AND CONTRACTOR

DEFINITIONS

Where the term "Consultant" is used throughout the General Conditions, revise to read "Engineer."

Page 6, add the following new Definitions:

Approved or Approval

Approved or Approval means acceptance by the *Consultant* in accordance with the *Consultant's* responsibilities described in Clause GC 2.2 ROLE OF THE *CONSULTANT*.

Period of Delay

The period of time from *Ready-for-Takeover* date specified in Article A-1, subclause 1.3, and the actual *Ready-for-Takeover* date; if any.

Site

The *Site* means the geographical location of the *Work* identified in the *Contract Documents*.

Standard Specification

The Standard Specifications consist of Definitions, General Conditions, Supplementary General Conditions, Measurement and Payment, General Requirements, other Technical Specifications and standard details developed by the Nova Scotia Road Builders Association and the Consulting Engineers of Nova Scotia Joint Committee on Contract Documents and published with the title of Standard Specifications for Municipal Services.

Supplementary Specifications

Supplementary Specifications are the specifications for a specific project which amend or add to the Standard Specifications.

Total Amount Payable

Total Amount Payable means the sum of the Contract Price as stipulated in Article A-4, subclause 4.3 subject to adjustments made in accordance with the provisions of the Contract Documents plus the amount of *Value Added Taxes*.

GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

PART 2 - ADMINISTRATION OF THE CONTRACT

GC 2.3 REVIEW AND INSPECTION OF THE WORK

Page 10, delete clause 2.3.3 and replace with the following:

2.3.3 The *Contractor* shall furnish promptly to the *Consultant* one (1) electronic file, in pdf file format, of certificates and inspection reports related to the *Work*. The *Contractor* will be required to provide hard copies, in the quantity requested, only upon request of the *Consultant* or *Owner*.

Page 10, within clause 2.3.5, add the following sentence at the end of the clause:

"If the *Consultant's* determination is not accepted by either party, then the matter shall be settled in accordance with the requirements of Part 8 of the General Conditions - DISPUTE RESOLUTION."

PART 3 - EXECUTION OF THE WORK

GC 3.4 CONSTRUCTION SCHEDULE

Page 12, in Clause 3.4.1.1, delete "prior to the first application for payment" and replace with "not later than two (2) weeks after receipt of the notice of award".

Page 12, add new clause 3.4.2 as follows:

"3.4.2 If, at any time, it should appear to the *Owner* or the *Consultant* that the actual progress of the *Work* is behind schedule or is likely to become behind schedule, or if the *Contractor* has given notice of such to the *Owner* or the *Consultant* pursuant to clause 3.4.1.3, the *Contractor* shall take appropriate steps to cause the actual progress of the *Work* to conform to the schedule or minimize the resulting delay and shall produce and present to the *Owner* and the *Consultant* a recovery plan demonstrating how the *Contractor* will achieve the recovery of the schedule. If the *Contractor* intends to apply for a change in the *Contract Price* in relation to a schedule recovery plan, then the *Contractor* shall proceed in accordance with General Condition 6.6 - CLAIMS FOR A CHANGE IN CONTRACT PRICE."

GC 3.5 SUPERVISION

Page 12, add new clause 3.5.3 as follows:

"3.5.3 The *Owner* may, at any time during the course of the *Work*, request the replacement of the appointed representative(s), where the grounds for the request involve conduct which jeopardizes the safety and security of the Site or the *Owner's* operations. Immediately upon receipt of the request, the *Contractor* shall make arrangements to appoint a replacement acceptable to the *Owner* and *Consultant*."

GC 3.6 - LAYOUT OF THE WORK

Page 12, delete clause 3.6.1 in its entirety and replace with the following:

"3.6.1 The *Contractor* shall have all reference points established on site by a licensed surveyor, at the *Place of the Work*, at no additional cost to the *Owner*."

GC 3.8 LABOUR AND PRODUCTS

Page 13, delete clause 3.8.2 and replace with the following:

"3.8.2 The *Contractor* shall provide and pay for labour, *Products*, tools, *Construction Equipment*, transportation, and other facilities and services necessary for the performance of the *Work* in accordance with the *Contract*. Water, heat, light, and power will be provided by the party identified in Division 01 of these *Specifications*."

GC 3.9 SHOP DRAWINGS

Page 13, delete Clause 3.9.2 and replace with the following:

"3.9.2 Prepare and submit to the *Consultant* for review, a schedule of the dates for provision, review and return of Shop Drawings. Provide this submission a minimum of two (2) working days prior to the project start-up meeting."

PART 4 - ALLOWANCES

GC 4.1 CASH ALLOWANCES

Page 14, delete Clause 4.1.7 and replace with the following:

"4.1.7 The *Contractor* shall prepare a schedule, acceptable to the *Consultant*, that shows when the *Consultant* and *Owner* must authorize ordering of items called for under cash allowances to avoid delaying the progress of the *Work*."

Page 14, add the following new Clause:

"4.1.8 The *Owner* reserves the right to call, or to have the *Contractor* call, for competitive bids for portions of the *Work*, to be paid for from cash allowances."

PART 5 - PAYMENT

GC 5.5 - PAYMENT

Page 15, delete clause 5.5.1.2 in its entirety and replace with the following:

"5.5.1.2 The *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement - PAYMENT on or before twenty (20) calendar days after the later of:
.1 receipt by the *Consultant* of the application for payment;
or
.2 the last day of the monthly payment period covered by the application for payment."

Page 15, after clause 5.5.1,2 add the following new clauses:

"5.5.1.3 The *Contractor* shall agree interim quantities with the *Consultant* for the purposes of progress payment claims, prior to submission of progress payment application.

"5.5.1.4 The *Contractor* shall pay promptly any and all accounts for

labour, services and materials used for the purpose of the fulfillment of this Contract as and when such accounts become due and payable and shall furnish the *Consultant* with proof of payment of such accounts in such form and as often as the *Consultant* may request."

GC 5.5 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK

Page 15, after Clause 5.6.1.2, add the following:

- "5.6.1.3 Submit a certificate by lien search to the Owner by a solicitor licensed to practice law in the Province of the Place of Work, certifying that no lien associated with the Work exists against the Owner's property or Work;
- 5.6.1.4 Submit a clearance letter from the Workers' Compensation Board or provincially equivalent regulatory body; and
- 5.6.1.5 All such documents shall be dated not earlier than the expiry of the lien period as stipulated by the lien legislation in the *Place of the Work*."
- "5.6.1.6 The *Consultant* will provide an electronic copy of the Certificate of *Substantial Performance* and instruct the *Contractor* to post the certificate at the Site and to www.substantialperformance.com. "

Page 15, delete Clause 5.6.3 and replace with the following:

- 5.6.3 Subject to the requirements of the Payment Legislation of the *Place of the Work*, all holdback prescribed by the applicable lien legislation for completed *Work* shall become due and payable to the *Contractor* no later than ten (10) Working Days following the expiration of the sixty (60) holdback period. If, within sixty (60) calendar days after the issue of the certificate of *Substantial Performance of Work*, the *Contractor* has not corrected all the documented deficiencies, the *Owner* shall retain sufficient monies, as determined by the *Consultant*, to cover the cost of completing said deficiencies. These monies shall be held in addition to holdback monies retained in accordance with the provisions of the Contract and subject to the terms of the lien legislation in the *Place of the Work*."

GC 5.7 FINAL PAYMENT

Page 15, delete clause 5.7.1 in its entirety and replace with the following:

- "5.7.1 *Contractor's* application for final payment will only be recommended for payment by the *Consultant* when the following have been performed:
- .1 *Work* has been completed and inspected for compliance with the Contract Documents, and the *Consultant* has agreed that all the requirements of the Contract have been fulfilled by the *Contractor*.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Equipment and systems have been tested, adjusted and balanced and are fully operational, and written reports as outlined in the *Contract Documents* have been provided to the Owner.

.4 Certificates required by utility companies, manufacturer's and inspectors have been submitted.

.5 Spare parts, maintenance materials, record drawings, warranties and applicable bonds have been provided.

5.10.2 If, in the opinion of the *Consultant*, the above requirements are not complete, then the *Consultant* will not accept the application, and request resubmission.

5.10.3 If, in the opinion of the Engineer, it is not expedient to correct defective work or work is not performed in accordance with the requirements of the Contract, the Owner may deduct from the Contract Price the difference in value between work performed and that called for by the Contract Documents, the amount of which shall be determined by the Engineer."

Page 15/16, renumber existing clauses 5.7.2, 5.7.3 and 5.7.4 to 5.7.4, 5.7.5, and 5.10.6 respectively. In renumbered clause 5.7.6, change "5 working days" to read "20 calendar days".

Page 16, Clause 5.7.4, in line 2, change "5 calendar days" to "20 calendar days".

PART 6 - CHANGES IN THE WORK

Page 16, add new clause 6.1.1.3 as follows:

6.1.1.3 Changes that do not affect the Contract Price and time by Supplemental Instruction.

GC 6.2 CHANGE ORDER

Page 16, after Clause 6.2.3, add the following:

"6.2.4 The mark-up on agreed upon changes are as follows:

.1 Work performed by the *Contractor's* own forces will be the cost of the *Work* plus ten (10%) percent overhead and profit.

.2 Work performed by the subcontractor's force will be the cost of *Work* plus 15% overhead and profit. Where the *Work* can be done by the *Contractor's* forces, as solely determined by the *Consultant*, but is done by the Subcontractor's forces, the mark-up for overhead and profit will be limited to ten (10%) percent.

6.2.5 Before the approval of any *Change Order* over \$1,000 in value the *Consultant* is entitled to receive, upon request, at a minimum, the following breakdown of cost associated with such *Change Order*:

.1 Labour rates, excluding operators.

.2 Equipment rates including operators.

.3 Supervisory staff rates.

.4 Subcontractor and material or equipment invoices where applicable.

.5 Overhead costs including worker's compensation, *site* trailer cost as applicable, insurance, bonding, small tool expenses, CPP, and EI contributions.

- 6.2.6 No compensation for extra Work or material shall be allowed unless the Consultant issues a Notice in Writing authorizing such Work or material to be ordered in the form of a *Change Order*, *Change Directive* or *Supplemental Instruction*.
- 6.2.7 No compensation will be allowed for the cost of repairs to equipment or in respect of construction equipment of any kind idle on the Site except as directed by the *Consultant* in writing or for damage to anything used in performing any such extra *Work* or making any such alteration.
- 6.2.8 The price applicable to any Work deleted from the Contract, shall be deducted from the *Contract Price* and shall be mutually agreed upon by the Contractor and the *Consultant*. The price shall be comparable to prices quoted on Work of similar nature.

GC 6.3 - CHANGE DIRECTIVE

Page 18, in clause 6.3.12, add the following sentence at the end of the paragraph:

"If such determination by the *Consultant* is not accepted by either party, then the decision shall be made in accordance with Part 8 of the General Conditions - DISPUTE RESOLUTION."

GC 6.4 - CONCEALED OR UNKNOWN CONDITIONS

Page 18, add a new clause 6.4.5 and 6.4.6 as follows:

- "6.4.5 If the *Contractor* was given access to the Place of Work and/or professional reports relating thereto (including, without limitation, environmental, geotechnical, and structural reports) prior to the submission of the bid on which the Contract was awarded, then the *Contractor* confirms that they have investigated the *Place of the Work* and, in doing so, applied to that investigation the degree of care and skill required. In those circumstances, notwithstanding the provisions of clause 6.4.1, the *Contractor* is not entitled to an adjustment to the *Contract Price* or to an extension of the Contract Time for conditions which could reasonably have been ascertained by the *Contractor* by such investigation, or which could have been reasonably inferred from the material provided with the Contract Documents. In those circumstances, should a claim arise, the Contractor will have the burden of establishing that it could not have discovered the materially different conditions from an investigation because of restrictions placed on its access or inferred the existence of the conditions from the material provided with the *Contract Documents*.
- 6.4.6 If such concealed or unknown conditions relate to toxic and hazardous substances and materials, artifacts and fossils, or mould, the parties will be governed by the provisions of GC 9.2 - TOXIC AND HAZARDOUS SUBSTANCES, GC 9.3 - ARTIFACTS AND FOSSILS, and GC 9.5 - MOULD."

GC 6.5 DELAYS

Page 18, clause 6.5.2, delete last sentence of paragraph and replace with the following sentence:

"The *Contractor* will not be reimbursed by the Owner for costs incurred by the *Contractor* as a result of such delay."

Page 19, after Clause 6.5.5, add the following new Clauses:

- "6.5.6 Should the *Contractor* fail to attain *Ready-for-Takeover* for the *Work* by the date indicated in Article A-1, Clause 1.3 in the AGREEMENT BETWEEN OWNER AND CONTRACTOR, the period of time from this agreed date to the actual date when the *Consultant* confirms the *Work* is *Ready-for-Takeover*, shall be termed the *Period of Delay*.
- 6.5.7 In the event there is a *Period of Delay*, the *Contractor* shall be liable for and shall pay to the Owner the cost of continuance of supervision during the *Period of Delay*, and all additional fees, disbursements and costs incurred by the Owner as a result of the *Period of Delay*, such charges hereby termed as *Delay Charges*. The Owner may deduct the amount of such *Delay Charges* from further progress payments."

GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

Page 18, add the following new Clause as 6.6.6 and renumber the subsequent clause:

- "6.6.6 The *Owner* may make claims arising out of the costs incurred for additional services provided by the *Consultant* resulting from the *Contractor's* failure to reasonably perform the *Work* in accordance with the terms and conditions of the Contract, including the *Contractor's* issuance of unnecessary Requests for Information (RFI's). The *Consultant* will notify the *Owner* and *Contractor* where it has been determined that additional services will be required or have been provided in order not to cause a delay. The *Owner* shall make claims based on the *Consultant's* invoices."

GC 6.7 - QUANTITY VARIATIONS

Page 19, delete clause 6.7 in its entirety.

PART 9 - PROTECTION OF PERSONS AND PROPERTY

GC 9.4 - CONSTRUCTION SAFETY

Page 24, after GC 9.4.5, add the following:

- "9.4.6 The *Contractor* shall indemnify and save harmless the *Owner*, its agents, officers, directors, employees, *Consultant*, successors, appointees and assigns from and against the consequences of any and all safety infractions committed by the *Contractor* under the applicable occupational health and safety legislation in the *Place of the Work*, including the payment of legal fees and disbursements on a solicitor and client basis. Such indemnity shall apply to the extent to which the *Owner* is not covered by insurance, provided that the indemnity contained in this clause shall be limited to costs and damages resulting directly from

such infractions and shall not extend to any consequential, indirect, or special damages."

PART 10 - GOVERNING REGULATIONS

GC 10.1 TAXES AND DUTIES

Page 25, after Clause 10.1.2, add new Clause 10.1.3 as follows:

"10.1.3 Indicate on each application for payment as a separate amount, the appropriate *Value Added Tax* the *Owner* is legally obliged to pay. This amount will be paid to the *Contractor* in addition to the amount certified for payment under the *Contract*."

GC 10.2 - LAWS, NOTICES, PERMITS AND FEES

Page 25, add the following to clause 10.2.3 after the first sentence:

"Various jurisdictions have requirements for posting non-refundable fees before excavations are carried out within public rights-of-way. The *Contractor* is responsible for the determination of the requirement for each specific project and for any required deposits. The *Contractor* shall obtain all permits, such as those from the Department of Highways; licenses; letters of approval and certificates and pay the fees required for the performance of the *Work* which are in force at the date of tender closing, but this shall not include the obtaining of permanent easements or rights-of-way."

GC 12.3 WARRANTY

Page 26, add new clause 12.3.5 as follows and renumber subsequent clauses:

"12.3.5 All *Work* of repair or replacement carried out during the Warranty Period shall be maintained for a period of one (1) year from the date of the *Consultant's* acceptance of the *Work* of repair or replacement notwithstanding that the Warranty Period expires before the expiration of the said year. This clause shall not apply to normal operation maintenance, which shall be carried out by the *Owner*."

PART 13 - INDEMNIFICATION AND WAIVER

GC 13.1 INDEMNIFICATION

Page 26, Clause 13.1.1, in line 2, after "hold harmless the other" replace with "hold harmless the other and the *Consultant*."

PART 14 - CONTRACT SECURITY

GC 14.1 CONTRACT SECURITY

Page 28, add new clauses 14.1 and 14.2 as follows:

- "14.1 The *Contractor* shall, prior to commencement of the *Work*, provide to the *Owner* a Performance Bond and a Labour and Materials Bond, each in the amount of 50% of the Total Amount Payable or an Irrevocable Letter of Credit in the amount of 20% of the Total Amount Payable. The Irrevocable Letter of Credit shall be issued by a certified financial institution for a period of no less than twelve (12) months after the issue of Substantial Performance Certificate. Include the cost of providing the Irrevocable Letter of Credit in Contract Price. Should it become apparent that the final cost of the project will exceed the Total Amount Payable by more than 10%, the Contractor shall arrange to have his bonds or Irrevocable Letter of Credit reissued, based on the projected final cost."
- 14.2 The Contract Security will be retained until the expiration of the Warranty Period."

END OF SECTION

SUPPLEMENTARY SPECIFICATIONS

INTENT OF THE SUPPLEMENTARY SPECIFICATIONS

- .1 The Work of this Contract is to be constructed in accordance with the Standard Specifications for Municipal Services (2024 Revision) as developed and published by the Nova Scotia Road Builders Association and Nova Scotia Consulting Engineers Association Joint Committee on Contract Documents, except as modified herein.
- .2 These Supplementary Specifications modify the specification sections to which they refer.
- .3 The Supplementary Specifications take precedence over the Specification to which they refer.

SECTION 00 21 00 - INFORMATION TO TENDERERS

Delete in its entirety and replace with new section included in this document.

SECTION 00 41 43 - TENDER FORM

Delete in its entirety and replace with new section included in this document.

SECTION 00 53 43 - FORM OF AGREEMENT

Delete in its entirety and replace with new section included in this document.

SECTION 00 73 00 - SUPPLEMENTARY GENERAL CONDITIONS

Delete in its entirety and replace with new section included in this document

SECTION 01 10 00 - GENERAL REQUIREMENTS

Page 1, delete subsection 1.2 and replace with the following:

- 1.2 Summary of Work .1 The project is located on Montague Street in the Town of Lunenburg. The Work involves but is not necessarily limited to: the partial removal of an existing degraded retaining wall, the construction of a new cast-in-place concrete retaining wall complete with formwork, reinforcement, bedding gravels, waterproofing, and plywood protection board. Work also includes asphalt and concrete sidewalk reinstatement, crack repair of an existing retaining wall, and all work as shown on the Drawings and as specified herein.

Page 1, delete subsection 1.4 and replace with the following:

- 1.4 Setting Out the Work .1 Set out the Work complete with sufficient survey reference points to identify the site on the ground and maintain these, or re-establish them as
-

required during the Contract period.

Page 1, add new subsection 1.5.3 and 1.5.4 as follows:

- 1.5 Existing Site Conditions .3 Do not remove nor disturb survey monuments, iron bars, and markers representing property boundaries and locations which may be encountered during the execution of the work, without written permission from the Engineer. Replace disturbed monuments unless written permission for removal has been obtained.
- .4 Contractor to indemnify and hold harmless the Owner and Engineer against damages for consequential loss and against any claim made against the Owner or the Engineer by the owner of any main, line, conduit, or other such structure or utility, in any way caused by the operations of the Contractor in the performance of this Contract.

Page 1, delete subsection 1.7.1 and replace with the following:

- .1 Shop Drawings:
- .1 Submit shop detail or working drawings and manufacturer's data for all items requiring fabrication, on or off the Site, and for all proprietary equipment to the Engineer for review before any such items or equipment are incorporated into the Works. This review of Shop Drawings by Engineer is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Engineer approves the detailed design inherent in the Shop Drawings, responsibility for which remains with the Contractor submitting them, and such review shall not relieve the Contractor of responsibility for errors or omissions in Shop Drawings or of responsibility for meeting all requirements of the Construction and Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for co-ordination of the work of all sub-trades.
- .2 Submit electronic copies of all relevant shop drawings to the Engineer in PDF format. Where it is not practical to provide electronic copies and where approved by the Engineer, submit three (3) paper copies of shop drawings.
- .3 Submit shop drawings with such promptness as not to cause delay in this work, or of the works of any Sub-Contractors.
-

- .4 The information submitted shall clearly show the dimensions, materials or construction, performance, finish, service and installation requirements and other characteristics in sufficient detail to permit the Engineer to evaluate the suitability of the articles for the use intended.
- .5 Make corrections required by the Engineer as noted and resubmit corrected copies to the Engineer for review before fabrication.
- .6 The Engineer will mark comments on one (1) copy of each drawing or document submitted and will return this as an electronic copy for the Contractor's purposes.
- .7 The Engineer will not review shop drawings and other material involving a large amount of work in those instances where it is evident that the Contractor has not used all the information contained in, or where such details are obviously not consistent with the Contract Documents.
- .8 Provide the section number of the specification with each submitted shop drawing for the purpose of identification.

Page 2, delete subsection 1.8 and replace with the following:

- 1.8 RECORD DRAWINGS .1 Record Drawings:
- .1 After award of Contract, Engineer will provide one (1) electronic Autocad file for purpose of maintaining record drawings. Accurately record deviations from Contract Documents caused by site conditions and changes ordered by Engineer.
- .2 Identify drawings as "Project Record Copy". Maintain in new condition and make available for inspection on site by Engineer.
- .3 On completion of Work and prior to final inspection, submit record documents to Engineer.
- .4 Include in unit prices the cost of obtaining the services of a third-party surveyor to take xyz coordinates total station readings for all buried Work. Provide this data with the record drawing submission.

Page 4, delete subsection 1.12 and replace with the following:

- 1.12 TRAFFIC CONTROL .1 Provide traffic control in accordance with the Temporary Workplace Traffic Control Manual issued by NSTIR and the Manual for Uniform Traffic Control Devices. Where the two regulations conflict, the stricter measures take precedent.
-

Page 3, add new subsection 1.12.6 as follows:

- .6 Maintain one-way traffic flow on Starrs Road at all times.

SECTION 01 22 00 - MEASUREMENT AND PAYMENT

Delete in its entirety and replace with new Section 01 22 00 - Measurement and Payment, attached.

SECTION 01 57 00 - ENVIRONMENTAL PROTECTION

Page 1, add new subsections 1.1 and 1.2 as follows, and renumber subsequent subsections:

- 1.1 Work Included .1 This section specifies requirements for providing temporary erosion and sedimentation control measures.
- 1.2 Related Work .1 Earthwork: Section 31 20 00

Page 2, add new subsection 1.8.4 as follows:

- .4 When required, submit erosion and sediment control plans for approval by Nova Scotia Environment and Owner prior to start of construction and present them for review at the project pre-construction meeting.

Page 3, add new subsection 1.9 as follows:

- 1.9 Disposal of Wastes .1 Dispose of rubbish and waste materials at authorized off-site location as directed by the Engineer.
- .2 Do not dispose of waste, volatile, or deleterious materials into waterways, storm, or sanitary sewers.
- .3 Regulated wastes shall be disposed of in accordance with applicable municipal, provincial, and federal requirements.

SECTION 03 30 00 - CONCRETE

Delete Section 03 30 00 and replace with new Section 03 30 00, attached.

SECTION 31 20 00 - EARTHWORK

Page 2, add new subsection 1.6 as follows:

1.6 EXISTING
STRUCTURES AND
UNDERGROUND SERVICES

- .1 Furnish temporary support, adequate protection and maintenance of all underground and surface structures, drains, sewers, power lines and other existing site items affected by the Works. Notify Engineer before altering or supporting an existing structure.
- .2 Restore, upon completion of the Work, structures that have been disturbed.
- .3 Proceed with caution in excavation and preparation of trenches so exact location of all buried pipes and services and underground structures may be determined and be responsible for repair of pipes, services, and structures when broken or otherwise damaged.
- .4 Whenever it is necessary to explore and excavate to determine the location of existing underground utility structures, make such examination and excavation at no additional cost to the Contract.:

Page 2, delete subsections 2.1.1 and 2.1.2 and replace with the following:

2.1 MATERIALS

- .1 Selected Backfill: common material from site excavation, free from stumps, trees, roots, sod, organics, rocks, boulders, and any other deleterious materials. Material to be well graded having a maximum particle size not exceeding 150mm with 40% to 60% of the material retained on 75mm sieve.
- .2 Structural fill: well graded, sound, durable, granular material, free from clay, frozen lumps, organic, or deleterious matter, graded as follows:

<u>Sieve Size, mm</u>	<u>% Passing</u>
112	100
80	95-100
20	20-100
5	0-70
0.080	0-10

Page 5, delete subsection 3.4 and replace with the following:

3.4 Blasting

- .1 No blasting will be permitted. Rock, if encountered must be removed by mechanical means.

PART 1- GENERAL

1.1 Work Included

- .1 This section specifies requirements for constructing cast-in-place concrete. Work includes supply and installation of falsework, formwork, reinforcement, concrete, and accessories.

1.2 Related Sections

- .1 Earthwork: Section 31 20 00
- .2 Walks, Curbs and Gutters: Section 32 16 00
- .3 Reinstatement: Section 32 98 00
- .4 Standard Details: Section 39 00 00

1.3 Reference Standards

- .1 AASHTO M336/M336-2020, Standard Specification for Steel Wire and Welded Wire, Plain and Deformed, for Concrete Reinforcement.
- .2 AASHTO M171-05, Standard Specification for Sheet Materials for Curing Concrete.
- .3 ASTM C260/C260M-10a (2016), Standard Specification for Air-Entraining Admixtures for Concrete.
- .4 ASTM C309-2019, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
- .5 ASTM C494/C494M-2019, Standard Specification for Chemical Admixtures for Concrete.
- .6 ASTM C1017/C1017M-13e1, Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
- .7 ASTM C1116/C1116M-23, Standard Specification for Fiber-Reinforced Concrete.
- .8 CSA A3000-18, Cementitious Materials Compendium.
- .9 CSA A23.1:19/A23.2:19 Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
- .10 CSA S269.1-16, Falsework and Formwork.
- .11 CSA G30.18:21, Carbon Steel Bars for Concrete Reinforcement

1.4 Submittals

- .1 Submit shop drawings and samples in accordance with Section 01 10 00 for items specified herein.

PART 2 - PRODUCTS

2.1 Materials

- .1 Portland Cement: to CSA Standard A3000, Type GU, or GU-L Normal and CSA A23.1, Table 6.
- .2 Blended Hydraulic Cement: CSA Standard A3000 and CSA A23.1, Table 7. blended cements may be used with the agreement of the Engineer.
- .3 Aggregates: to CSA-A23.1. For exposure Classes C-2 and F-2, test data is required from a company certified by the Canadian Council of Independent Laboratories that shows measures taken to mitigate alkali silica reaction. Submit data at least ten (10) business days prior to

concrete placement. Further submission during the construction season is required if there is a change in the quality or quantity of materials in the concrete mix design. Submittal to include test results for alkali-aggregate reaction for aggregates used in the mix design, and the proposed concrete mix design based on CSA Standard Practice A23.2-27A.

- .1 To confirm conformance with the specified expansion limits of CSA Standard Practice A23.2-27A, provide alkali aggregate reactivity data for each aggregate source according to CSA Test Method A23.2-14A or CSA Test Method A2.2-25A provided there are three consecutive acceptable tests within the last 6 years.
- .2 Where supplementary cementing materials are employed to mitigate potentially deleterious expansions, the minimum level of supplementary material to be in accordance with Table 7 of CSA Standard Practice A23.2-27A. Concrete curb and gutter, pavers, and sidewalks to be classified as St2 and retaining walls as St3 according to Table 5 of the standard practice.
- .3 Follow CSA A23.1, for cold weather concrete work constructed for sidewalk, curb and gutter.
- .4 Upon acceptance of the aggregates, the source and method of manufacture must not be altered for the duration of the Work. Store and maintain aggregates in such a manner to avoid the inclusion of foreign materials in the concrete and such that no equipment will be operated on the stockpiles. Construct stockpiles to prevent segregation or contamination. Wash fine aggregate and classify to conform to the gradation limits specified in CSA A23.1. Coarse aggregates to meet the requirements of CSA 4.2.3 The maximum combination of flat, elongated and flat and elongated particles, as defined in CSA A23.2-13A, must not exceed 10% of the mass.
- .4 Water: to CSA A23.1, Table 9.
- .5 Admixtures:
 - .1 Air Entraining: to ASTM C260/C260M.
 - .2 Chemical: to ASTM C494/C494M or C1017/C1017M for flowing Concrete.
- .6 Supplementary Cementing Materials:
 - .1 Low Calcium Fly Ash (Class F): to CSA A3000 and CSA 23.1, Table 8. Provide confirmation of compliance to CSA A3000 for the fly ash used in the concrete.
- .7 Reinforcement:
 - .1 Bars: to CSA G30.18, carbon steel, grade 400, deformed.
 - .2 Bar Supports and Spacers: to CSA A23.1.
 - .3 Fibres: to ASTM C1116/1116M.
- .8 Falsework and Formwork:
 - .1 Falsework to CSA S269.1.
 - .2 Forms: to CSA A23.1 and consisting of wood, steel, plastic. Wood forms to be clean and free of loose knots, splits, or metal.
 - .3 Form Ties: to CSA-A23.1, removable or snap-off ties, fixed or adjustable length. Do not position form ties, tie wire, spacers, or other embedded fixtures closer than 20 mm from or to surface. For non-standard/severe environments, dimension to be shown on the Project Drawings.
 - .4 Release Agent: non-staining, low VOC chemicals of sprayable consistency which prevent adhesion of concrete to forms, to CSA A23.1.
 - .5 Formwork design: to CSA S269.1.

- .9 Curing Compound: to CSA A23.1, and ASTM A309.
- .10 Joint sealer/filler: Duoflex NS (non-sag) for walls as manufactured by Sika, or approved equivalent, complete with compatible foam back rod and primer.
- .11 Waterproofing: Exterior waterproofing: for vertical and horizontal applications consisting of sheet membrane waterproofing of composite sheets comprised of rubberized asphalt integrally bonded to a film of high density cross laminated polyethylene, minimum 1.5 mm (60 mils) thick. The material must be suitable for application at low temperature.
 - .1 Primer: as recommended by the waterproofing manufacturer.
 - .2 Mastic and tapes: as recommended by membrane manufacturer.
 - .3 Fillet T-joint sealant: as recommended by membrane manufacturer.
 - .4 Adhesives: as recommended by membrane manufacturer.
 - .5 Liquid membrane for detailing: as recommended by membrane Manufacturer.
 - .6 Protection board: semi-flexible board, compatible with waterproofing. Acceptable products: Sealtight Vibraflex Waterproofing Protection Board - Type 150 thickness 6 mm, Bakor Asphalt Protection Board, thickness 6 mm, Bakor 990-31 Protection Board or approved equivalent.
 - .7 Acceptable material: W.R. Grace Bituthene 3000, Blueskin WP200 as supplied by Henry Canada Ltd., or approved equivalent.
- .12 Crack repair: two-component, 100 % solids and solvent-free, moisture-tolerant, low-viscosity, and high-strength multi-purpose epoxy resin.
 - .1 Acceptable product: Sikadur by Sika Canada or approved equivalent.

2.2 Concrete Mix

- .1 Provide in accordance with CSA A23.1, Table 5, Alternate (1) Performance or (2) Prescription.
- .2 Mix proportions to provide workable concrete having required durability and strength.
- .3 Air entraining admixtures: to obtain Air Content Category as defined in CSA A23.1, Tables 1, 2 and 4.
- .4 Slump: to CSA A23.1, Clause 4.3.2.3.
- .5 Compressive strength at 28 days: as noted on the Project drawings. For mixtures containing supplementary cementing materials, other ages may be appropriate as per CSA A23.1.
- .6 Water/cement ratio: to CSA A23.1, Tables 1, 2 and 4 as required for exposure conditions.
- .7 Submit revised concrete mix properties for hot/cold weather including chemical admixtures and mix property modifications to slow/increase set time.

PART 3- EXECUTION

3.1 General

- .1 Do concrete work to CSA A23.1 and as herein specified.
- .2 If on-site mixing is approved, equipment to be capable of accurately proportioning ingredients to produce required concrete.
- .3 Do not change concrete mix without prior approval of the Engineer. Changes in material supply will require submission of a new mix design for review.

3.2 Formwork and Falsework

- .1 Construct falsework and formwork to CSA A23.1 and CSA S269.1.
- .2 Construct formwork to produce finished concrete to required shape, dimensions and levels indicated within tolerances required by CSA A23.1. Provide close fitting joints to prevent leakage of mortar and form ties and bracing sufficient to withstand pressure of plastic concrete without deflection.
- .3 When falsework is required, engage the services of a professional engineer licensed to practice in the Province of Nova Scotia, to provide design and erection details and inspect its installation in accordance with CSA S269.1. Provide drawings signed and sealed by a professional engineer responsible for their preparation.
- .4 Use a form release agent as per CSA A23.1.
- .5 Remove formwork in accordance with CSA A23.1.
- .6 Remove falsework in accordance with CSA S269.1.
- .7 Fill form tie holes with approved mechanical plug or non-shrink mortar and finish to texture of adjacent concrete or as specified.

3.3 Reinforcement and Embedded Items

- .1 Clean reinforcing of rust build-up, mill scale, or other coatings that prevent or reduce bond.
- .2 Bend bars cold to measurements required.
- .3 Confirm reinforcement and inserts are not disturbed during concrete placement.
- .4 Place and support reinforcing using bar supports and side form spacers to obtain cover, spacing and location indicated.

3.4 Placing

- .1 Place concrete to CSA A23.1, Clause 7.4.
- .2 Place concrete on dampened base.
- .3 Place concrete on unfrozen base. Remove all snow, ice, and frost from area prior to placing concrete. Avoid placing concrete on, or against, any surface that will lower the temperature of the concrete in place below the minimum value shown in CSA A23.1, Table 14.
- .4 Avoid dropping concrete more than 1.5 metres vertically unless it can be shown that the concrete will not segregate. Deposit concrete in final position in forms to avoid lateral movement.
- .5 Place concrete in continuous operation, starting from lowest point in form, in lifts not greater than 500 mm.
- .6 Internally consolidate each layer to obtain dense homogeneous structure free of cold joints, fill planes, voids, and honeycombing. For vertical installation vibrate at least 150 mm into previously placed layers. Concrete to be well bonded to all reinforcing steel, anchors, waterstops, and other embedded parts.

3.5 Joints

- .1 Make joints in accordance with CSA A23.1, Clause 7.3.

3.6 Finishing

- .1 Finish concrete in accordance with CSA A23.1, Clause 7.7.
- .2 Provide a broom finish unless otherwise specified.

3.7 Curing and Protection

- .1 Provide curing and protection to CSA A23.1, Section 7.8. Keep the temperature of the concrete within the limits of Table 14.
- .2 After placing is completed, maintain minimum curing conditions for the concrete in accordance with CSA A23.1, Clause 7.8.

3.8 Waterproofing and Protection Board Installation

- .1 Do waterproofing work in accordance with membrane manufacturers printed application instructions.
- .2 Apply membrane fully adhered to surfaces as indicated.
- .3 Lap membrane joints minimum 65 mm. Roll all seams continuously.
- .4 Lap sheets minimum 100 mm at junction of horizontal and vertical surfaces.
- .5 Install reinforcing strip of membrane waterproofing over all outside corners. Install reinforcing strips prior to field membrane application.
- .6 Centre reinforcing strip of membrane waterproofing over non-working joints and cracks up to a maximum of 5 mm. Width of reinforcing strip as recommended by manufacturer.
- .7 Notify the Engineer of non-working joints over 5 mm and treat as directed.
- .8 Apply liquid mastic to horizontal and vertical terminations.
- .9 Seal daily terminations with mastic.
- .10 Seal penetrations through membrane with liquid membrane and sheet membrane as recommended by manufacturer.
- .11 Protection board:
 - .1 Confirm the membrane is undamaged before application of protection board.
 - .2 Apply protection board over entire surface of waterproofing membrane using compatible adhesive. Follow manufacturer's recommendations.
 - .3 Do not backfill until after protection board is applied.

3.9 Concrete Quality

- .1 Test concrete in accordance with CSA A23.1 using a testing facility certified by the Canadian Council of Independent Laboratories.

3.10 Defective Work

- .1 Remediate all structural defects in concrete such as spalling, low points and delaminating where defect could cause long term deterioration of the structure.
- .2 Remediate all aesthetic defects in exposed concrete. Aesthetic defects include minor honeycombing, blemishes, embedded debris from tie holes and other surface defects.
- .3 Submit method and obtain approval of the Engineer prior to proceeding with remediation of all structural and aesthetic defects.

END OF SECTION