

Town of Three Rivers


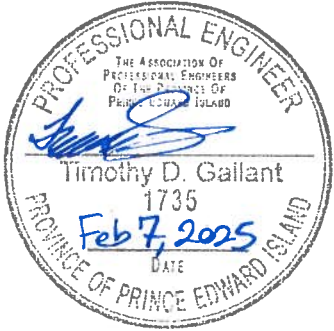
**Queens Road Sidewalk
Upgrades**



Issued for Tender

February 2025
Contract 242652.00

Queens Road Sidewalk Upgrades

Issued for Tender	PSH	February 7, 2025	
<i>Issue or Revision</i>	<i>Reviewed By:</i>	<i>Date</i>	<i>Issued By:</i>
			

Issued for Tender
CBCL No: 242652.00

Section Title

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1. GENERAL

1. The project is located in Montague, PEI. The work generally includes the construction of sidewalks, curb & gutters, and associated stormwater work along Queens Road from 184 Queens Road to Bailey Drive and along Queens Road Extension from Main Street to Campbell Avenue. Work will generally include, but necessarily limited to: project layout, temporary traffic control, utility accommodation, excavation and disposal of existing materials, new concrete sidewalks c/w tactile warning tiles, concrete curb & gutter, storm sewer upgrades, road widening, and reinstatement.

2. LIST OF DRAWINGS

DRAWING	
<u>NO.</u>	<u>TITLE</u>
-	Cover
C01	Queens Road Sta. 0+000 to 0+140
C02	Queens Road Sta. 0+140 to 0+280
C03	Queens Road Extension Sta. 1+000 to 1+287
C04	Details
C05	Details & Sections

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) Addenda received by the Tenderer during the tendering period.
 - c) Tender Security (refer to clause 12 herein).
2. The tender shall be submitted in a sealed envelope marked as follows:

TENDER FOR

Town of Three Rivers
Queens Road Sidewalk Upgrades
Contract No.242652.00

and must be delivered to the following address **up until 2:00:00 p.m., local time, on Thursday, February 27, 2025**, hereinafter referred to as the Tender Closing.

Three Rivers Town Hall
172 Fraser Street
Montague, PE C0A 1R0

3. Tender opening will occur immediately following tender closing. Tender opening will be public.
 4. Before tendering, Tenderers should 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 execution of the Contract 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 43.
 6. Any questions, ambiguities, inconsistencies, or uncertainties in the Contract Documents which may become apparent to Tenderers when tendering shall be advised IN WRITING to Rachel McIntosh: rmcintosh@cbcl.ca not less than three (3) 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).
 7. The Tenderer shall fill in the Completion Time and is notified that the start and completion date will be evaluated in conjunction with the tender price.
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8. All tenders shall be valid for acceptance for sixty (60) calendar days from the Closing Date.
 9. The Agreement is included in the Contract Documents at the time of tendering only for information and shall not be completed at the time of tendering.
 10. 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 renders such tender liable to disqualification.
 11. Contract Price to exclude HST. Harmonized sales tax shall be indicated as a separate amount and included in the Total Amount Payable.
 12. 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. This 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 latest edition of CCDC Form 220.
 13. The "Province of Prince Edward Island", "Town of Three Rivers", "Montague Sewer and Water Corporation", "CBCL Limited" is to be added to all insurance policies as an "Additional Insured".
 14. 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 is the sooner.
 15. 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.
 16. Within seven (7) days of written acceptance of a tender that tender shall provide Contract Security in the amount and form as specified in GC 11.2 and as supplemented in Section 00 73 00, and Insurance as specified in GC 11.1.
 17. Complete the Tender Form in ink and have corrections initialled by the individual signing the tender.
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18. Where manufactured articles are described or specified in the Contract Documents by name, catalogue number of a manufacturer or supplier, Tenderers shall tender on the basis of using only such articles. Procedure concerning substitution of a specified article with another shall be in accordance with equivalents and alternates in Section 01 00 00.
19. 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.
20. The Owner reserves the right to accept or to reject any or all tenders received, or to select a tender which is deemed by the Owner to be in its best interests.
21. Tenders, which in the opinion of the Owner are considered to be informal or unbalanced, may be rejected.
22. The project budget is sensitive and following the close of tenders and prior to award, it may be necessary to adjust the scope to match available dollars.
23. Tenders may be amended or withdrawn by letter, or facsimile, 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 "Queens Road Sidewalk Upgrades, Contract 242652.00". Signed and seal as required for tender and submit at the address given for receipt of tenders. All submissions must be received prior to Tender Closing.

1. SALUTATION:

- .1 To: Town of Three Rivers
172 Fraser Street, PO Box 546
Montague, PE C0A 1R0
- .2 For: Queens Road Sidewalk Upgrades
Contract No. 242652.00
- .3 From: _____

2. TENDERER DECLARES:

- .1 That this tender was made without collusion or fraud.
- .2 That the proposed work was carefully examined.
- .3 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.
- .4 That Contract Documents and Addenda No. ___ to ___ inclusive were carefully examined.
- .5 That all the above were taken into consideration in preparation of this Tender.

3. TENDERER AGREES:

- .1 To enter into a contract to supply all labour, material and equipment and to do all work necessary to construct the Work as described and specified herein for the unit prices stated in Subsection 4 hereunder, Schedule of Quantities and Unit Prices.
- .2 That the estimated Contract Price shall be the sum of the products of the tendered unit prices multiplied by the estimated quantities in Subsection 4 hereunder.
- .3 That this Tender is valid for acceptance for sixty (60) days from the time of Tender Closing.
- .4 That measurement and payment for items listed in Subsection 4 hereunder shall be in accordance with corresponding items in Section 01 29 00 Project Particulars and Measurement.

- .5 Upon request to provide evidence of ability and experience within 7 days of request, including experience in similar work, work currently under contract, senior supervisory staff available for the project, equipment available for use on the Work, and financial resources.
 - .6 To execute in triplicate the Agreement and forward same together with the specified contract security and insurance documents to the Owner within fourteen (14) days of written notice of award.
 - .7 That failure to enter into a formal contract and give specified insurance documents and contract security within time required will constitute grounds for forfeiture of certified cheque or enforcement of bid bond.
 - .8 That if certified cheque is forfeited, Owner will retain difference in money between amount of Tender and amount for which Owner legally contracts with another party to perform the Work and will refund balance, if any, to Tenderer.
 - .9 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.
 - .10 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.
 - .11 Agrees that the Warranty Period defined in the Contract Documents shall be for a period of one (1) year from the date of Substantial Performance of the Work.
 - .12 Understands that Substantial Performance of the Work will be established in accordance with General Conditions of the Contract and applicable lien legislation.
 - .13 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
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- .14 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.
- .15 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.
- .16 Agrees that time shall be construed as being of the essence of the Contract.
- .17 That the Contract Documents include:
- .1 Description of work and list of drawings
 - .2 Instruction to Tenderers
 - .3 Tender Form - Unit Price
 - .4 Form of Agreement
 - .5 General Conditions of the Civil Work Contract
 - .6 Supplementary General Conditions
 - .7 Drawings

<u>Dwg. No.</u>	<u>Title</u>
-	Cover
C01	Queens Road Sta. 0+000 to 0+140
C02	Queens Road Sta. 0+140 to 0+280
C03	Queens Road Extension Sta. 1+000 to 1+287
C04	Details
C05	Details & Sections
 - .8 Addenda as issued and as confirmed in subsection 2.4 of this section.

4. SCHEDULE OF QUANTITIES AND UNIT PRICES

Item Description	Unit	Qty.	Unit Price	Amount
1. Sidewalk Construction				
.01 1.5m Concrete Sidewalk	M	550	_____	_____
.02 Tactile Warning Devices	No.	11	_____	_____
2. Concrete Curb & Gutter	M	550	_____	_____
3. Storm Sewer				
.01 300mm Storm Pipe	M	35	_____	_____
.02 450mm Storm Pipe	M	220	_____	_____
.03 600mm Storm Pipe	M	10	_____	_____
4. Precast Structures				
.01 450mm Catch Pit	No.	7	_____	_____
.02 1050mm Catch Basin	No.	7	_____	_____
.03 1200mm Catch Basin	No.	1	_____	_____
.04 1500mm Catch Basin	No.	1	_____	_____
5. Environmental Protection				
.01 Straw Check Dams	No.	9	_____	_____
.02 Sediment Control into Storm Structure	No.	18	_____	_____
.03 Sediment Control Fence	M	50	_____	_____
6. Reinstatement				
.01 Topsoil and Hydroseed	M2	1500	_____	_____
.02 Granular Surface	M2	125	_____	_____
.03 Asphalt Surface	M2	950	_____	_____
7. Remove and Replace Unsuitable Material (Provisional)	C.M.	500	_____	_____
Subtotal			\$ _____	

TENDER SUMMARY

Estimated Contract Price (Excluding HST) \$ _____

Add HST (15% of the Estimated Contract Price) \$ _____

TOTAL AMOUNT PAYABLE \$ _____

TENDERER'S HST REGISTRATION NO. _____

5. COMPLETION TIME

The tenderer agrees to commence work _____ weeks after award and to achieve substantial performance of the work by _____, 2025.

Town of Three Rivers
Queens Road Sidewalk
Upgrades
Contract No. 242652.00

TENDER FORM -
UNIT RATE

Section 00 41 43
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6. SIGNATURE *

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

General

Agreement: CCDC18-2001, Civil Works Contract, as amended below form the basis of this Agreement between the Owner and Contractor, including definitions of specific words and terms.

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

BY AND BETWEEN

Town of Three Rivers

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

Queens Road Sidewalk Upgrades, Contract: 242652.00

located at Montague, PEI

for which the Agreement has been signed by the parties, and for which CBCL Limited

(Insert above the name of the Consultant)

is acting as and is hereinafter called the "Consultant"

and

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

.3 commence the Work by the ____ day of _____ in the year _____ and attain Substantial Performance as certified by the Consultant by the ____ day of _____ in the year _____.

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 Tender Form
- .2 Supplementary Tender Information
- .3 Agreement Between Owner and Contractor
- .4 Definitions
- .5 The General Conditions of the Contract
- .6 Supplementary General Conditions
- .7 Schedule of Quantities and Unit Prices
- .8 Specifications (as included in Specification Section 00 01 11, List of Contents)
- .9 Drawings (as listed in Specification Section 00 21 10, Description of Work and List of Drawings)
- .10 Addenda ___ through ___

ARTICLE A4 - CONTRACT PRICE

- .1 *Unit Prices* form the basis for payment of the *Contract Price*. Quantities in the *Schedule of Quantities and Unit Prices* are estimated. The estimated *Contract Price*, which is the total extended amount indicated in the *Schedule of Quantities and Unit Prices*, is:

- .2 All amounts are in Canadian funds. Unit Prices **exclude** HST and Contract Price **includes** HST.
- .3 These amounts shall be subject to adjustments as provided in the *Contract Documents*.
- .4 The *Contract Price* will be the sum of the products of the actual final quantities that are incorporated in, or made necessary by the *Work*, as confirmed by count and measurement, multiplied by the appropriate *Unit Prices* from the Tender Form together with any adjustments that are made in accordance with the provisions of the *Contract Documents* plus the amount of GST.

ARTICLE A5 - PAYMENT

- .1 Subject to the provisions of the *Contract Documents*, the *Owner* shall make monthly payments on account to the *Contractor* for the work performed, as certified by the *Consultant*, subject to a fifteen percent (15%) holdback, the *Owner* shall in Canadian funds:
- .1 make progress payments to the *Contractor* on account of the *Contract Price* when due in the amount certified by the *Consultant* together with such *Value Added Taxes* as may be applicable to such payment, and
- .2 The *Owner* shall release to the *Contractor* the holdback within two weeks of the date on which all of the following requirements have been met:
- (a) 60 days have elapsed from the Date of Substantial Performance of the Works as certified by the *Consultant*.
- (b) 7 days have elapsed from the date on which the *Consultant* issued the Certificate of Substantial Performance of the Works.
- (c) The *Contractor* has signed the Final Measure.
- (d) The *Contractor* has provided the *Consultant* with the following documents.
- (1) a statutory declaration to the effect that all expenses incurred in carrying out the Contract have been paid and releasing the Authority from any and all further claims relating to the Contract.
- (2) a certificate from a Barrister stating that there are no Mechanics' Liens filed relating to the contract works.
- (3) a clearance certificate from the Worker's Compensation Board, and
- .3 upon the issuance of the final certificate for payment, pay to the *Contractor* the unpaid balance of the *Contract Price* when due together with such *Value Added Taxes* as may be applicable to such payment.
- .2 In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payments shall be made to the *Contractor* in accordance with the provisions of GC11.1 - INSURANCE.
- .3 Interest:
- .1 Should either party fail to make payments as they become due under the terms of the Contract or in an award by arbitration or court, interest at two percent (2%) per annum above the prime rate on such unpaid amounts shall also become due and payable until payment. Such interest shall be compounded on a monthly basis. The bank rate shall be the rate established by the Bank of Canada as the minimum rate at which the Bank of Canada makes short term advances to the chartered banks.
- .2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.3.1 of this Article on the settlement amount of any claim in dispute that is resolved either pursuant to Part 8 of the General Conditions - DISPUTE RESOLUTION or otherwise,

from the date the amount would have been due and payable under the *Contract*, had it not been in dispute, until it is paid.

ARTICLE A6 - RECEIPT OF AND ADDRESSES FOR NOTICES

.1 Notices in writing between the parties or between them and the *Consultant* shall be considered to have been received by the addressee on the date of delivery if delivered to the individual, or to a member of the firm, or to an officer of the corporation for whom they are intended by hand or by registered post; or if sent by regular post, to have been delivered within 5 *Working Days* of the date of mailing when addressed as follows:

.1 The Owner at 172 Fraser Street, PO Box 546

Montague, PE C0A 1R0

(Address of Owner)

.2 The Contractor at _____

(Address of Contractor)

.3 The Consultant at 135 St. Peters Road, P.O. Box 1659

Charlottetown, PE C1A 7N4

(Address of Consultant)

ARTICLE A7 - QUANTITIES AND MEASUREMENT

- .1 The quantities shown in Section 00 41 43 Tender Form - Schedule of Quantities and Unit Prices are estimated.
- .2 Measurement for the actual quantities used to determine payments and Contract Price shall be in accordance with Section 01 29 00 - Project Particulars and Measurement.

ARTICLE A8 - SUCCESSION

The aforesaid *Contract Documents* 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 enure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors and assigns.

ARTICLE A9 - RIGHTS AND REMEDIES

No action or failure to act by the *Owner*, *Consultant*, 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 A10 - TIME

Time shall be construed as being of the essence of the *Contract*. The *Works* will be completed by the date indicated in Article A1 herein and shall be referred to as the *Date of Completion*.

ARTICLE A11- LIQUIDATED DAMAGES

Should the *Contractor* fail to complete the works by the *Date of Completion*, the period of time from the *Date of Completion* to the time until all required *Work* is performed completely as determined by the *Consultant*, shall be termed the Period of Delay.

In the event of there being a Period of Delay, the *Contractor* will be liable for and will 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* by reason of there being such Period of Delay for each and every calendar day that the work or works shall remain unfinished after the time so specified. The said sum or sums in view of the difficulty of ascertaining the losses which the *Owner* may suffer by reason of delay in the performance of the said *Works*, is hereby agreed upon, fixed and determined by the parties hereto as liquidated damages that the *Owner* will suffer by reason of said delay and default and not as penalty. The *Contractor* agrees to pay the *Owner* liquidated damages for each payment following the event until the project reaches Substantial Performance as certified by the *Consultant*.

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 Three Rivers

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.

Town of Three Rivers
Queens Road Sidewalk
Upgrades
Contract No. 242652.00

Definitions
(CCDC 18-2001)

Section 00 71 00
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DEFINITIONS

DEFINITIONS

The following definitions shall apply to all *Contract Documents*.

1. **Change Directive**
A *Change Directive* is a written instruction prepared by the *Consultant* and signed by the *Owner* directing the *Contractor* to proceed with a change in the *Work* within the general scope of the *Contract Documents* prior to the *Owner* and the *Contractor* agreeing upon an adjustment in *Contract Price* and *Contract Time*.
2. **Change Order**
A *Change Order* is a written amendment to the *Contract* prepared by the *Consultant* and signed by the *Owner* and the *Contractor* stating their agreement upon:
 - a change in the *Work*;
 - the method of adjustment or the amount of the adjustment in the *Contract Price*, if any; and
 - the extent of the adjustment in the *Contract Time*, if any.
3. **Construction Equipment**
Construction Equipment means all machinery and equipment, either operated or not operated, that is required for preparing, fabricating, conveying, erecting, or otherwise performing the *Work* but is not incorporated into the *Work*.
4. **Consultant**
The *Consultant* is the person or entity identified as such in the Agreement. The *Consultant* is the Engineer or other entity licensed to practise in the province or territory of the *Place of the Work*. The term *Consultant* means the *Consultant* or the *Consultant's* authorized representative.
5. **Contract**
The *Contract* is the undertaking by the parties to perform their respective duties, responsibilities, and obligations as prescribed in the *Contract Documents* and represents the entire agreement between the parties.
6. **Contract Documents**
The *Contract Documents* consist of those documents listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS and amendments agreed upon between the parties.
7. **Contract Price**
When *Unit Prices* form the basis of payment, the *Contract Price* is the sum of the product of each *Unit Price* stated in the *Schedule of Prices* multiplied by the appropriate actual quantity of each item that is incorporated in or made necessary by the *Work*, plus lump sums, if any, and allowances, if any, stated in the *Schedule of Prices*. When a lump sum stipulated price forms the basis of payment, the *Contract Price* is the amount stipulated in Article A-4 of the Agreement - CONTRACT PRICE.
8. **Contract Time**
The *Contract Time* is the time stipulated in paragraph 1.3 of Article A-1 of the Agreement - THE WORK from commencement of the *Work* to *Substantial Performance of the Work*.
9. **Contractor**
The *Contractor* is the person or entity identified as such in the Agreement. The term *Contractor* means the *Contractor* or the *Contractor's* authorized representative as designated to the *Owner* in writing.
10. **Drawings**
The *Drawings* are the graphic and pictorial portions of the *Contract Documents*, wherever located and whenever issued, showing the design, location, and dimensions of the *Work*, generally including plans, elevations, sections, details, schedules, and diagrams.
11. **Owner**
The *Owner* is the person or entity identified as such in the Agreement. The term *Owner* means the *Owner* or the *Owner's* authorized agent or representative as designated to the *Contractor* in writing, but does not include the *Consultant*.
12. **Place of the Work**
The *Place of the Work* is the designated site or location of the *Work* identified in the *Contract Documents*.

- 13. Product**
Product or Products means material, machinery, equipment, and fixtures forming the *Work*, but does not include *Construction Equipment*.
- 14. Project**
The *Project* means the total construction contemplated of which the *Work* may be the whole or a part.
- 15. Provide**
Provide means to supply and install.
- 16. Schedule of Prices**
The *Schedule of Prices* is the schedule listed in Article A-3 - CONTRACT DOCUMENTS identifying items of work, estimated quantities, units of measure, and *Unit Prices*.
- 17. Shop Drawings**
Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures, *Product* data, and other data which the *Contractor* provides to illustrate details of portions of the *Work*.
- 18. Specifications**
The *Specifications* are that portion of the *Contract Documents*, wherever located and whenever issued, consisting of the written requirements and standards for *Products*, systems, workmanship, and the services necessary for the performance of the *Work*.
- 19. Subcontractor**
A *Subcontractor* is a person or entity having a direct contract with the *Contractor* to perform a part or parts of the *Work*, or to supply *Products* worked to a special design for the *Work*.
- 20. Substantial Performance of the Work**
Substantial Performance of the Work is as defined in the lien legislation applicable to the *Place of the Work*. If such legislation is not in force or does not contain such definition, or if the *Work* is governed by the Civil Code of Quebec, *Substantial Performance of the Work* shall have been reached when the *Work* is ready for use or is being used for the purpose intended and is so certified by the *Consultant*.
- 21. Supplemental Instruction**
A *Supplemental Instruction* is an instruction, not involving adjustment in the *Contract Price* or *Contract Time*, in the form of *Specifications*, *Drawings*, schedules, samples, models, or written instructions, consistent with the intent of the *Contract Documents*. It is to be issued by the *Consultant* to supplement the *Contract Documents* as required for the performance of the *Work*.
- 22. Supplier**
A *Supplier* is a person or entity having a direct contract with the *Contractor* to supply *Products* not worked to a special design for the *Work*.
- 23. Temporary Work**
Temporary Work means temporary supports, structures, facilities, services, and other temporary things, excluding *Construction Equipment*, required for the execution of the *Work* but not incorporated into the *Work*.
- 24. Unit Price**
A *Unit Price* is the amount payable for a single unit of work as stated in the *Schedule of Prices*.
- 25. Value Added Taxes**
Value Added Taxes means such sum as shall be levied upon the *Contract Price* by the Federal or any Provincial or Territorial Government and is computed as a percentage of the *Contract Price* and includes the Goods and Services Tax, the Quebec Sales Tax, the Harmonized Sales Tax, and any similar tax, the collection and payment of which is by the *Contractor* as imposed by the tax legislation.
- 26. Work**
The *Work* means the total construction and related services required by the *Contract Documents*.
- 27. Working Day**
Working Day means a day other than a Saturday, Sunday, statutory holiday or statutory vacation day that is observed by the construction industry in the area of the *Place of the Work*.

Town of Three Rivers
Queens Road Sidewalk
Upgrades
Contract No. 242652.00

General Conditions of the
Civil Works Contract
(CCDC 18-2001)

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GENERAL CONDITIONS

GENERAL CONDITIONS OF THE CIVIL WORKS CONTRACT

PART 1 GENERAL PROVISIONS

GC 1.1 CONTRACT DOCUMENTS

- 1.1.1 The intent of the *Contract Documents* is to include the labour, *Products*, and services necessary for the performance of the *Work* by the *Contractor* in accordance with these documents. It is not intended, however, that the *Contractor* shall supply products or perform work not consistent with, not covered by, or not properly inferable from the *Contract Documents*.
- 1.1.2 Except for the provisions of article 12.3.6, nothing contained in the *Contract Documents* shall create any contractual relationship between:
- .1 the *Owner* and a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any of the *Work*.
 - .2 the *Consultant* and the *Contractor*, a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any of the *Work*.
- 1.1.3 The *Contract Documents* are complementary, and what is required by any one shall be as binding as if required by all.
- 1.1.4 Words and abbreviations which have well known technical or trade meanings are used in the *Contract Documents* in accordance with such recognized meanings.
- 1.1.5 References in the *Contract Documents* to the singular shall be considered to include the plural as the context requires.
- 1.1.6 Neither the organization of the *Specifications* nor the arrangement of *Drawings* shall control the *Contractor* in dividing the work among *Subcontractors* and *Suppliers*.
- 1.1.7 If there is a conflict within the *Contract Documents*:
- .1 the order of priority of documents, from highest to lowest, shall be
 - the Agreement between the *Owner* and the *Contractor*,
 - the Definitions,
 - Supplementary Conditions,
 - the General Conditions,
 - the *Specifications*,
 - material and finishing schedules,
 - the *Drawings*.
 - .2 *Drawings* of larger scale shall govern over those of smaller scale of the same date.
 - .3 dimensions shown on *Drawings* shall govern over dimensions scaled from *Drawings*.
 - .4 later dated documents shall govern over earlier documents of the same type.
- 1.1.8 The *Owner* shall provide the *Contractor*, without charge, sufficient copies of the *Contract Documents* to perform the *Work*.
- 1.1.9 *Specifications*, *Drawings*, models, and copies thereof furnished by the *Consultant* are and shall remain the *Consultant's* property, with the exception of the signed *Contract* sets, which shall belong to each party to the *Contract*. All *Specifications*, *Drawings*, and models furnished by the *Consultant* are to be used only with respect to the *Work* and are not to be used on other work. These *Specifications*, *Drawings*, and models are not to be copied or altered in any manner without the written authorization of the *Consultant*.
- 1.1.10 Models furnished by the *Contractor* at the *Owner's* expense are the property of the *Owner*.

GC 1.2 LAW OF THE CONTRACT

- 1.2.1 The law of the *Place of the Work* shall govern the interpretation of the *Contract*.

GC 1.3 RIGHTS AND REMEDIES

- 1.3.1 Except as expressly provided in the *Contract Documents*, the duties and obligations imposed by the *Contract Documents* and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.
- 1.3.2 No action or failure to act by the *Owner*, *Consultant*, 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.

GC 1.4 ASSIGNMENT

- 1.4.1 Neither party to the *Contract* shall assign the *Contract* or a portion thereof without the written consent of the other, which consent shall not be unreasonably withheld.

PART 2 ADMINISTRATION OF THE CONTRACT

GC 2.1 AUTHORITY OF THE CONSULTANT

- 2.1.1 The *Consultant* will have authority to act on behalf of the *Owner* only to the extent provided in the *Contract Documents*, unless otherwise modified by written agreement as provided in paragraph 2.1.2.
- 2.1.2 The duties, responsibilities, and limitations of authority of the *Consultant* as set forth in the *Contract Documents* shall be modified or extended only with the written consent of the *Owner*, the *Contractor*, and the *Consultant*.
- 2.1.3 If the *Consultant's* employment is terminated, the *Owner* shall immediately appoint or reappoint a *Consultant* against whom the *Contractor* makes no reasonable objection and whose status under the *Contract Documents* shall be that of the former *Consultant*.

GC 2.2 ROLE OF THE CONSULTANT

- 2.2.1 The *Consultant* will provide administration of the *Contract* as described in the *Contract Documents* during construction until issuance of the final certificate for payment, and subject to GC 2.1 - AUTHORITY OF THE CONSULTANT and with the *Owner's* concurrence, from time to time until the completion of any correction of defects as provided in paragraph 12.3.3 of GC 12.3 - WARRANTY.
- 2.2.2 The *Consultant* may provide at the *Place of the Work*, one or more project representatives to assist in carrying out the *Consultant's* responsibilities. The duties, responsibilities, and limitations of authority of such project representatives shall be as set forth in writing to the *Contractor*.
- 2.2.3 The *Consultant* will review the *Work* at intervals appropriate to the progress of construction to:
 - .1 become familiar with the progress and quality of the *Work*,
 - .2 determine if the *Work* is proceeding in general conformity with the *Contract Documents*, and
 - .3 verify quantities of *Work* performed under a *Schedule of Prices*.
- 2.2.4 Based on the *Consultant's* observations and evaluation of the *Contractor's* applications for payment, the *Consultant* will determine the amounts owing to the *Contractor* under the *Contract* and will issue certificates for payment as provided in Article A-5 of the Agreement - PAYMENT, GC 5.3 - PROGRESS PAYMENT, and GC 5.7 - FINAL PAYMENT.
- 2.2.5 The *Consultant* will not be responsible for and will not have control, charge, or supervision of construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs required in connection with the *Work* in accordance with the applicable construction safety legislation, other regulations, or general construction practice. The *Consultant* will not be responsible for the *Contractor's* failure to carry out the *Work* in accordance with the *Contract Documents*. The *Consultant* will not have control over, charge of, or be responsible for the acts or omissions of the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or any other persons performing portions of the *Work*.

- 2.2.6 The *Consultant* will be, in the first instance, the interpreter of the requirements of the *Contract Documents* and shall make findings as to the performance thereunder by both parties to the *Contract*, except with respect to GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER. Interpretations and findings of the *Consultant* shall be consistent with the intent of the *Contract Documents*. When making such interpretations and findings the *Consultant* will not show partiality to either the *Owner* or the *Contractor*.
- 2.2.7 Matters in question relating to the performance of the Work or the interpretation of the *Contract Documents*, except for GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER, shall be referred initially to the *Consultant* by notice in writing given to the *Consultant* and to the other party for the *Consultant's* interpretation and finding which will be given by notice in writing to the parties within a reasonable time. With respect to claims, the *Consultant* will make findings as set out in GC 6.6 - CLAIMS, paragraph 6.6.5.
- 2.2.8 The *Consultant* will have authority to reject work which in the *Consultant's* opinion does not conform to the requirements of the *Contract Documents*. Whenever the *Consultant* considers it necessary or advisable, the *Consultant* will have authority to require inspection or testing of work, whether or not such work is fabricated, installed, or completed. However, neither the authority of the *Consultant* to act nor any decision either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the *Consultant* to the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or other persons performing any of the *Work*.
- 2.2.9 During the progress of the *Work* the *Consultant* will furnish *Supplemental Instructions* to the *Contractor* with reasonable promptness or in accordance with a schedule for such instructions agreed to by the *Consultant* and the *Contractor*.
- 2.2.10 The *Consultant* will review and take appropriate action upon such *Contractor's* submittals as *Shop Drawings*, *Product data*, and samples, as provided in the *Contract Documents*.
- 2.2.11 The *Consultant* will prepare *Change Orders* and *Change Directives* as provided in GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.
- 2.2.12 The *Consultant* will conduct reviews of the *Work* to determine the date of *Substantial Performance of the Work* as provided in GC 5.4 - SUBSTANTIAL PERFORMANCE OF THE WORK.
- 2.2.13 All certificates issued by the *Consultant* will be to the best of the *Consultant's* knowledge, information, and belief. By issuing any certificate, the *Consultant* does not guarantee the *Work* is correct or complete.
- 2.2.14 The *Consultant* will receive and review written warranties and related documents required by the *Contract* and provided by the *Contractor* and will forward such warranties and documents to the *Owner* for the *Owner's* acceptance.

GC 2.3 REVIEW AND INSPECTION OF THE WORK

- 2.3.1 The *Owner* and the *Consultant* shall have access to the *Work* at all times. The *Contractor* shall provide sufficient, safe, and proper facilities at all times for the review of the *Work* by the *Consultant* and the inspection of the *Work* by authorized agencies. If parts of the *Work* are in preparation at locations other than the *Place of the Work*, the *Owner* and the *Consultant* shall be given access to such work whenever it is in progress.
- 2.3.2 If work is designated for tests, inspections, or approvals in the *Contract Documents*, or by the *Consultant's* instructions, or the laws or ordinances of the *Place of the Work*, the *Contractor* shall give the *Consultant* reasonable notice of when the work will be ready for review and inspection. The *Contractor* shall arrange for and shall give the *Consultant* reasonable notice of the date and time of inspections by other authorities.
- 2.3.3 The *Contractor* shall furnish promptly to the *Consultant* two copies of certificates and inspection reports relating to the *Work*.
- 2.3.4 If the *Contractor* covers, or permits to be covered, work that has been designated for special tests, inspections, or approvals before such special tests, inspections, or approvals are made, given or completed, the *Contractor* shall, if so directed, uncover such work, have the inspections or tests satisfactorily completed, and make good covering work at the *Contractor's* expense.

- 2.3.5 The *Consultant* may order any portion or portions of the *Work* to be examined to confirm that such work is in accordance with the requirements of the *Contract Documents*. If the work is not in accordance with the requirements of the *Contract Documents*, the *Contractor* shall correct the work and pay the cost of examination and correction. If the work is in accordance with the requirements of the *Contract Documents*, the *Owner* shall pay the cost of examination and restoration.
- 2.3.6 The *Contractor* shall pay the cost of making any test or inspection, including the cost of samples required for such test or inspection, if such test or inspection is designated in the *Contract Documents* to be performed by the *Contractor* or is designated by the laws or ordinances of the *Place of the Work*.
- 2.3.7 The *Contractor* shall pay the cost of samples required for any test or inspection to be performed by the *Consultant* or the *Owner* if such test or inspection is designated in the *Contract Documents*.

GC 2.4 DEFECTIVE WORK

- 2.4.1 The *Contractor* shall promptly remove from the *Place of the Work* and replace or re-execute defective work that has been rejected by the *Consultant* as failing to conform to the *Contract Documents* whether or not the defective work has been incorporated in the *Work* and whether or not the defect is the result of poor workmanship, use of defective products, or damage through carelessness or other act or omission of the *Contractor*.
- 2.4.2 The *Contractor* shall make good promptly other contractors' work destroyed or damaged by such removals or replacements at the *Contractor's* expense.
- 2.4.3 If in the opinion of the *Consultant* it is not expedient to correct defective work or work not performed as provided in the *Contract Documents*, the *Owner* may deduct from the amount otherwise due to the *Contractor* the difference in value between the work as performed and that called for by the *Contract Documents*. If the *Owner* and the *Contractor* do not agree on the difference in value, they shall refer the matter to the *Consultant* for a determination.

PART 3 EXECUTION OF THE WORK

GC 3.1 CONTROL OF THE WORK

- 3.1.1 The *Contractor* shall have total control of the *Work* and shall effectively direct and supervise the *Work* so as to ensure conformity with the *Contract Documents*.
- 3.1.2 The *Contractor* shall be solely responsible for construction means, methods, techniques, sequences, and procedures and for co-ordinating the various parts of the *Work* under the *Contract*.

GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

- 3.2.1 The *Owner* reserves the right to award separate contracts in connection with other parts of the *Project* to other contractors and to perform work with own forces.
- 3.2.2 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Owner* shall:
- .1 provide for the co-ordination of the activities and work of other contractors and *Owner's* own forces with the *Work* of the *Contract*;
 - .2 assume overall responsibility for compliance with the applicable health and construction safety legislation at the *Place of the Work*;
 - .3 enter into separate contracts with other contractors under conditions of contract which are compatible with the conditions of the *Contract*;
 - .4 ensure that insurance coverage is provided to the same requirements as are called for in GC 11.1 - INSURANCE and co-ordinate such insurance with the insurance coverage of the *Contractor* as it affects the *Work*; and
 - .5 take all reasonable precautions to avoid labour disputes or other disputes on the *Project* arising from the work of other contractors or the *Owner's* own forces.

- 3.2.3 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Contractor* shall:
- .1 afford the *Owner* and other contractors reasonable opportunity to introduce and store products and use the *Owner's* or other contractor's construction equipment to execute their work;
 - .2 cooperate with other contractors and the *Owner* in reviewing their construction schedules; and
 - .3 where part of the *Work* is affected by or depends upon for its proper execution the work of other contractors or *Owner's* own forces, promptly report to the *Consultant* in writing and prior to proceeding with that part of the *Work*, any apparent deficiencies in such work
- 3.2.4 Where the *Contract Documents* identify the work to be performed by other contractors or the *Owner's* own forces, the *Contractor* shall coordinate and schedule the *Work* with the work of other contractors and the *Owner's* own forces and interface as specified in the *Contract Documents*.
- 3.2.5 Where a change in the *Work* is required as a result of the co-ordination and interface of the work of other contractors or *Owner's* own forces with the *Work*, the changes shall be authorized and valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 3.2.6 Disputes, and other matters in question between the *Contractor* and other contractors shall be dealt with as provided in Part 8 of the General Conditions - DISPUTE RESOLUTION provided the other contractors have reciprocal obligations. The *Contractor* shall be deemed to have consented to arbitration of any dispute with any other contractor whose contract with the *Owner* contains a similar agreement to arbitrate.

GC 3.3 TEMPORARY WORK

- 3.3.1 The *Contractor* shall have the sole responsibility for the design, erection, operation, maintenance, and removal of *Temporary Work*.
- 3.3.2 The *Contractor* shall engage and pay for registered professional engineering personnel skilled in the appropriate disciplines to perform those functions referred to in paragraph 3.3.1 where required by law or by the *Contract Documents* and in all cases where such *Temporary Work* is of such a nature that professional engineering skill is required to produce safe and satisfactory results.
- 3.3.3 Notwithstanding the provisions of GC 3.1 -CONTROL OF THE WORK, paragraph 3.3.1, and paragraph 3.3.2 or provisions to the contrary elsewhere in the *Contract Documents* where such *Contract Documents* include designs for *Temporary Work* or specify a method of construction in whole or in part, such designs or methods of construction shall be considered to be part of the design of the *Work* and the *Contractor* shall not be held responsible for that part of the design or the specified method of construction. The *Contractor* shall, however, be responsible for the execution of such design or specified method of construction in the same manner as for the execution of the *Work*.

GC 3.4 DOCUMENT REVIEW

- 3.4.1 The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Consultant* any error, inconsistency, or omission the *Contractor* may discover. Such review by the *Contractor* shall be to the best of the *Contractor's* knowledge, information, and belief and in making such review the *Contractor* does not assume any responsibility to the *Owner* or the *Consultant* for the accuracy of the review. The *Contractor* shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the *Contract Documents*, which the *Contractor* did not discover. If the *Contractor* does discover any error, inconsistency, or omission in the *Contract Documents*, the *Contractor* shall not proceed with the work affected until the *Contractor* has received corrected or missing information from the *Consultant*.

GC 3.5 CONSTRUCTION SCHEDULE

- 3.5.1 The *Contractor* shall:
- .1 prepare and submit to the *Owner* and the *Consultant* prior to the first application for payment, a construction schedule that indicates the timing of the major activities of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate the *Work* will be performed in conformity with the *Contract Time*;

- .2 monitor the progress of the *Work* relative to the construction schedule and update the schedule on a monthly basis or as stipulated by the *Contract Documents*; and
- .3 advise the *Consultant* of any revisions required to the schedule as the result of extensions of the *Contract Time* as provided in Part 6 of the General Conditions - CHANGES IN THE WORK.

GC 3.6 SUPERVISION

- 3.6.1 The *Contractor* shall provide all necessary supervision and appoint a competent representative who shall be in attendance at the *Place of the Work* while the *Work* is being performed. The appointed representative shall not be changed except for valid reason.
- 3.6.2 The appointed representative shall represent the *Contractor* at the *Place of the Work* and notices and instructions given to the appointed representative by the *Consultant* shall be held to have been received by the *Contractor*.

GC 3.7 LAYOUT OF THE WORK

- 3.7.1 The *Owner* shall, in consultation with the *Contractor*, establish reference points for construction which are necessary for the *Contractor* to proceed with the *Work*.
- 3.7.2 The *Contractor* shall be responsible for laying out the *Work*, shall preserve and protect the established reference points, and shall not change or relocate the established reference points without the approval of the *Consultant*.
- 3.7.3 The *Contractor* shall advise the *Consultant* whenever any established reference point is lost, destroyed, damaged, or requires relocation as a result of the *Contractor's* operations. The cost to reestablish any reference point that is lost, destroyed, damaged, or requires relocation as a result of the *Contractor's* operations, shall be at the *Contractor's* expense.

GC 3.8 SUBCONTRACTORS AND SUPPLIERS

- 3.8.1 The *Contractor* shall preserve and protect the rights of the parties under the *Contract* with respect to work to be performed under subcontract, and shall:
 - .1 enter into contracts or written agreements with *Subcontractors* and *Suppliers* to require them to perform their work as provided in the *Contract Documents*;
 - .2 incorporate the terms and conditions of the *Contract Documents* into all contracts or written agreements with *Subcontractors* and *Suppliers*; and
 - .3 be as fully responsible to the *Owner* for acts and omissions of *Subcontractors*, *Suppliers*, and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the *Contractor*.
- 3.8.2 The *Contractor* shall indicate in writing, at the request of the *Owner*, those *Subcontractors* or *Suppliers* whose bids have been received by the *Contractor* which the *Contractor* would be prepared to accept for the performance of a portion of the *Work*. Should the *Owner* not object before signing the *Contract*, the *Contractor* shall employ those *Subcontractors* or *Suppliers* so identified by the *Contractor* in writing for the performance of that portion of the *Work* to which their bid applies.
- 3.8.3 The *Owner* may, for reasonable cause, at any time before the *Owner* has signed the *Contract*, object to the use of a proposed *Subcontractor* or *Supplier* and require the *Contractor* to employ one of the other subcontract bidders.
- 3.8.4 If the *Owner* requires the *Contractor* to change a proposed *Subcontractor* or *Supplier*, the *Contract Price* and *Contract Time* shall be adjusted by the differences occasioned by such required change.
- 3.8.5 The *Contractor* shall not be required to employ as a *Subcontractor* or *Supplier*, a person or firm to which the *Contractor* may reasonably object.
- 3.8.6 The *Owner*, through the *Consultant*, may provide to a *Subcontractor* or *Supplier* information as to the percentage of the *Subcontractor's* or *Supplier's* work which has been certified for payment.

GC 3.9 LABOUR AND PRODUCTS

- 3.9.1 The *Contractor* shall provide and pay for labour, *Products*, tools, *Construction Equipment*, water, heat, light, power, transportation, and other facilities and services necessary for the performance of the *Work* in accordance with the *Contract*.
- 3.9.2 *Products* provided shall be new. *Products* which are not specified shall be of a quality consistent with those specified and their use acceptable to the *Consultant*.
- 3.9.3 The *Contractor* shall maintain good order and discipline among the *Contractor's* employees engaged on the *Work* and shall not employ on the *Work* anyone not skilled in the tasks assigned.

GC 3.10 DOCUMENTS AT THE SITE

- 3.10.1 The *Contractor* shall keep one copy of current *Contract Documents*, submittals, reports, and records of meetings at the *Place of the Work*, in good order and available to the *Owner* and the *Consultant*.

GC 3.11 SHOP DRAWINGS

- 3.11.1 The *Contractor* shall provide *Shop Drawings* as required in the *Contract Documents*.
- 3.11.2 The *Contractor* shall review all *Shop Drawings* prior to submission to the *Consultant*. The *Contractor* represents by this review that:
- .1 the *Contractor* has determined and verified all field measurements, field construction conditions, materials, *Product* requirements, catalogue numbers, and similar data or will do so; and
 - .2 the *Contractor* has checked and co-ordinated each *Shop Drawing* with the requirements of the *Contract Documents*.
- 3.11.3 The *Contractor* shall confirm the review of each shop drawing by stamp, date, and signature of the person responsible for the review. At the time of submission the *Contractor* shall notify the *Consultant* in writing of any deviations in the *Shop Drawings* from the requirements of the *Contract Documents*.
- 3.11.4 The *Contractor* shall submit *Shop Drawings* to the *Consultant* to review in orderly sequence and sufficiently in advance so as to cause no delay in the *Work* or in the work of other contractors. Upon request of the *Contractor* or the *Consultant*, they jointly shall prepare a schedule of the dates for submission and return of *Shop Drawings*. *Shop Drawings* which require approval of any legally constituted authority having jurisdiction shall be submitted to such authority by the *Contractor* for approval.
- 3.11.5 The *Contractor* shall submit *Shop Drawings* in the form specified or as the *Consultant* may direct. The *Consultant* will review and return *Shop Drawings* in accordance with the schedule agreed upon, or otherwise with reasonable promptness so as to cause no delay. The *Consultant's* review is for conformity to the design concept and for general arrangement only. The *Consultant's* review shall not relieve the *Contractor* of responsibility for errors or omissions in the *Shop Drawings* or for meeting all requirements of the *Contract Documents* unless the *Consultant* expressly notes the acceptance of a deviation on the *Shop Drawings*.
- 3.11.6 Upon the *Consultant's* request, the *Contractor* shall revise and resubmit *Shop Drawings* which the *Consultant* rejects as inconsistent with the *Contract Documents* unless otherwise directed by the *Consultant*. The *Contractor* shall notify the *Consultant* in writing of any revisions to the resubmission other than those requested by the *Consultant*.

GC 3.12 USE OF THE WORK

- 3.12.1 The *Contractor* shall confine *Construction Equipment*, *Temporary Work*, storage of *Products*, waste products and debris, and operations of employees to limits indicated by laws, ordinances, permits, or the *Contract Documents* and shall not unreasonably encumber the *Place of Work* with *Products*.
- 3.12.2 The *Contractor* shall not load or permit to be loaded any part of the *Work* with a weight or force that will endanger the safety of the *Work*.

GC 3.13 CUTTING AND REMEDIAL WORK

- 3.13.1 The *Contractor* shall do the cutting and remedial work required to make the several parts of the *Work* come together properly.
- 3.13.2 The *Contractor* shall co-ordinate the *Work* to ensure that this requirement is kept to a minimum.
- 3.13.3 Should the *Owner*, the *Consultant*, other contractors or anyone employed by them be responsible for ill-timed work necessitating cutting or remedial work to be performed, the cost of such cutting or remedial work shall be valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 3.13.4 Cutting and remedial work shall be performed by specialists familiar with the *Products* affected and shall be performed in a manner to neither damage nor endanger the *Work*.

GC 3.14 CLEANUP

- 3.14.1 The *Contractor* shall maintain the *Work* in a safe and tidy condition and free from the accumulation of waste products and debris, other than that caused by the *Owner*, other contractors or their employees.
- 3.14.2 Before applying for *Substantial Performance of the Work* as provided in GC 5.7 - SUBSTANTIAL PERFORMANCE OF THE WORK, the *Contractor* shall remove waste products and debris, other than that resulting from the work of the *Owner*, other contractors or their employees, and shall leave the *Work* clean and suitable for use or occupancy by the *Owner*. The *Contractor* shall remove products, tools, *Construction Equipment* and *Temporary Work* not required for the performance of the remaining work.
- 3.14.3 Prior to application for the final certificate for payment, the *Contractor* shall remove any remaining products, tools, *Construction Equipment*, *Temporary Work*, and waste products and debris, other than those resulting from the work of the *Owner*, other contractors or their employees.

PART 4 ALLOWANCES

GC 4.1 CASH ALLOWANCES

- 4.1.1 The *Contract Price* includes the cash allowances, if any, stated in the *Contract Documents*. The scope of work or costs included in such cash allowances shall be as described in the *Contract Documents*.
- 4.1.2 The *Contract Price*, and not the cash allowances, includes the *Contractor's* overhead and profit in connection with such cash allowances.
- 4.1.3 Expenditures under cash allowances shall be authorized by the *Owner* through the *Consultant*.
- 4.1.4 Where costs under any cash allowance exceed the amount of the allowance, the *Contractor* shall be compensated for the excess incurred and substantiated plus an amount for overhead and profit on the excess as set out in the *Contract Documents*. Where costs under any cash allowance are less than the amount of the allowance, the *Owner* shall be credited for the unexpended portion of the cash allowance, but not for the *Contractor's* overhead and profit on such amount. Multiple cash allowances shall not be combined for the purpose of calculating the foregoing.
- 4.1.5 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the actual cost and each cash allowance.
- 4.1.6 The value of the work performed under a cash allowance is eligible to be included in progress payments.
- 4.1.7 The *Contractor* and the *Consultant* shall jointly prepare a schedule 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*.

GC 4.2 CONTINGENCY ALLOWANCE

- 4.2.1 The *Contract Price* includes the contingency allowance, if any, stated in the *Contract Documents*.
- 4.2.2 Expenditures under the contingency allowance shall be authorized and valued as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.

- 4.2.3 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the expenditures authorized under paragraph 4.2.2 and the contingency allowance.

PART 5 PAYMENT

GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

- 5.1.1 The *Owner* shall, at the request of the *Contractor*, before signing the *Contract*, and promptly from time to time thereafter, furnish to the *Contractor* reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*.
- 5.1.2 The *Owner* shall notify the *Contractor* in writing of any material change in the *Owner's* financial arrangements during performance of the *Contract*.

GC 5.2 BASIS OF PAYMENT FOR UNIT PRICE WORK

- 5.2.1 Payment for *Unit Price* work shall be based on the *Unit Prices* in the *Contract*.
- 5.2.2 The *Contractor* shall measure the *Work* and the *Consultant* will verify such measurements to determine payment to the *Contractor* in accordance with the measurement provisions of the *Contract Documents*.

GC 5.3 BASIS OF PAYMENT FOR LUMP SUM WORK

- 5.3.1 Payment for lump sum work shall be based on the stipulated price(s) in the *Contract*.

GC 5.4 BASIS OF PAYMENT FOR COST PLUS WORK

- 5.4.1 Payment for cost plus work shall be based on the cost of such work, as provided in paragraph 5.4.2, plus a fee calculated as a percentage of the cost of such work, for the *Contractor's* overhead and profit. The percentage amount shall be as provided in the *Contract Documents* but shall not be applied to the cost of *Construction Equipment* when such cost is based on rates which already include the *Contractor's* overhead and profit.
- 5.4.2 The cost of cost plus work shall be at rates prevailing in the locality of the *Place of the Work* and shall include the following cost elements as applicable to such work:
- .1 wages and benefits paid for labour in the direct employ of the *Contractor* under applicable collective bargaining agreements, or under a salary or wage schedule agreed upon by the *Owner* and *Contractor*;
 - .2 salaries, wages, and benefits of the *Contractor's* personnel, when stationed at the field office, in whatever capacity employed; or personnel at shops or on the road, engaged in expediting the production or transportation of materials or equipment;
 - .3 contributions, assessments, or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada or Quebec Pension Plan, insofar as such cost is based on wages, salaries, or other remuneration paid to employees of the *Contractor* and included in the cost of the *Work* as provided in paragraphs 5.4.2.1 and 5.4.2.2;
 - .4 travel and subsistence expenses of the *Contractor's* personnel described in paragraphs 5.4.2.1 and 5.4.2.2;
 - .5 the cost of all *Products* including cost of transportation thereof;
 - .6 the cost of materials, supplies, *Construction Equipment*, *Temporary Work*, and hand tools not owned by the workers, including transportation, and maintenance thereof, which are consumed in the performance of the *Work*; and cost less salvage value on such items used but not consumed, which remain the property of the *Contractor*;
 - .7 the cost of all tools and *Construction Equipment*, exclusive of hand tools used in the performance of the *Work*, whether rented from or provided by the *Contractor* or others, including installation, minor repairs and replacements, dismantling, removal, transportation and delivery cost thereof;
 - .8 deposits lost;
 - .9 the amounts of all subcontracts;
 - .10 the cost of quality assurance such as independent inspection and testing services;
 - .11 charges levied by authorities having jurisdiction at the *Place of the Work*;

- .12 royalties, patent license fees, and damages for infringement of patents and cost of defending suits therefor subject always to the *Contractor's* obligations to indemnify the *Owner* as provided in paragraph 10.3.1 of GC 10.3 - PATENT FEES;
 - .13 any adjustment in premiums for all bonds and insurance which the *Contractor* is required, by the *Contract Documents*, to purchase and maintain;
 - .14 any adjustment in taxes and duties for which the *Contractor* is liable;
 - .15 charges for long distance telephone and facsimile communications, courier services, expressage, and petty items incurred in relation to the performance of the *Work*;
 - .16 the cost of removal and disposal of waste products and debris; and
 - .17 cost incurred due to emergencies affecting the safety of persons or property.
- 5.4.3 The *Contractor* shall obtain the *Owner's* approval prior to subcontracting or entering into other agreements for cost plus work.
- 5.4.4 The *Consultant* may refuse to certify payment for all or part of the cost of any item under any cost element, where the item in question was unsuitable, unnecessary or the cost was otherwise improperly incurred in the performance of the *Work*.
- 5.4.5 The *Contractor* shall keep full and detailed accounts and records necessary for the documentation of the cost of cost plus work and shall provide the *Consultant* with copies thereof when requested.
- 5.4.6 The *Owner* shall be afforded reasonable access to all of the *Contractor's* books, records, correspondence, instructions, drawings, receipts, vouchers, and memoranda related to the cost of cost plus work, and for this purpose the *Contractor* shall preserve such records for a period of one year from the date of *Substantial Performance of the Work*.

GC 5.5 APPLICATIONS FOR PROGRESS PAYMENT

- 5.5.1 Applications for payment on account as provided in Article A-5 of the Agreement - PAYMENT may be made monthly as the *Work* progresses.
- 5.5.2 Applications for payment shall be dated the last day of the agreed monthly payment period and the amount claimed shall be for the value, proportionate to the amount of the *Contract*, of work performed and *Products* delivered to the *Place of the Work* at that date.
- 5.5.3 Where the basis of payment of the *Contract Price* is *Unit Prices*, applications for payment shall include quantity measurements and any other data requested by the *Consultant* to assist the *Consultant* in evaluating the application and verifying quantity measurements.
- 5.5.4 Where the basis of payment of the *Contract Price* is a lump sum stipulated price:
- .1 the *Contractor* shall submit to the *Consultant*, at least 10 *Working Days* before the first application for payment, a schedule of values for the parts of the *Work*, aggregating the total amount of the *Contract Price*, so as to facilitate evaluation of applications for payment;
 - .2 the schedule of values shall be made out in such form and supported by such evidence as the *Consultant* may reasonably direct and when accepted by the *Consultant*, shall be used as the basis for applications for payment, unless it is found to be in error; and
 - .3 the *Contractor* shall include a statement based on the schedule of values with each application for payment.
- 5.5.5 Where the basis of payment for a portion of the *Work* is cost plus, applications for payment shall be based on the cost of the work performed plus the amount of the fee earned, in accordance with GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK.
- 5.5.6 Applications for payment for *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall be supported by such evidence as the *Consultant* may reasonably require to establish the value and delivery of the *Products*.

GC 5.6 PROGRESS PAYMENT

- 5.6.1 The *Consultant* will issue to the *Owner*, no later than 5 *Working Days* after the receipt of an application for payment from the *Contractor* submitted in accordance with GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT, a certificate for payment in the amount applied for or in such other amount as the *Consultant* determines to be properly due. If the *Consultant* amends the application, the *Consultant* will promptly notify the *Contractor* in writing giving reasons for the amendment.
- 5.6.2 The *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement - PAYMENT no later than 5 *Working Days* after the date of a certificate for payment issued by the *Consultant*.
- 5.6.3 Where the basis of payment of the *Contract Price* is *Unit Prices*, quantities for progress payments shall be considered approximate until final verification of quantities by the *Consultant*. A certificate for progress payment shall not be construed as the *Consultant's* final verification of quantities. Final verification of quantities will be made after all work of an item is completed.

GC 5.7 SUBSTANTIAL PERFORMANCE OF THE WORK

- 5.7.1 When the *Contractor* considers that the *Work* is substantially performed, or if permitted by the lien legislation applicable to the *Place of the Work* a designated portion thereof which the *Owner* agrees to accept separately is substantially performed, the *Contractor* shall prepare and submit to the *Consultant* a comprehensive list of items to be completed or corrected and apply for a review by the *Consultant* to establish *Substantial Performance of the Work* or substantial performance of the designated portion of the *Work*. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.
- 5.7.2 No later than 15 *Working Days* after the receipt of the *Contractor's* list and application, the *Consultant* will review the *Work* to verify the validity of the application and notify the *Contractor* whether the *Work* or the designated portion of the *Work* is substantially performed.
- 5.7.3 The *Consultant* will state the date of *Substantial Performance of the Work* or designated portion of the *Work* in a certificate.
- 5.7.4 Immediately following the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor*, in consultation with the *Consultant*, shall establish a reasonable date for finishing the *Work*.

GC 5.8 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

- 5.8.1 After the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor* shall:
- .1 submit an application for payment of the holdback amount,
 - .2 submit a sworn or affirmed statement that all accounts for labour, subcontracts, *Products*, *Construction Equipment*, and other indebtedness which may have been incurred by the *Contractor* in the *Substantial Performance of the Work* and for which the *Owner* might in any way be held responsible have been paid in full, except for amounts properly retained as a holdback or as an identified amount in dispute.
- 5.8.2 After the receipt of an application for payment from the *Contractor* and the sworn or affirmed statement as provided in paragraph 5.8.1, the *Consultant* will issue a certificate for payment of the holdback amount.
- 5.8.3 Where the holdback amount required by the applicable lien legislation has not been placed in a separate holdback account, the *Owner* shall, 5 *Working Days* prior to the expiry of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*, place the holdback amount in a bank account in the joint names of the *Owner* and the *Contractor*.
- 5.8.4 In the common law jurisdictions, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable on the day following the expiration of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*. Where lien legislation does not exist or apply, the holdback amount shall be due and payable in accordance with other legislation, industry practice, or provisions which may be agreed to between the parties. The *Owner* may retain out of the holdback amount any sums required by law to satisfy any liens against the *Work* or, if permitted by the lien legislation applicable to the *Place of the Work*, other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

- 5.8.5 In the Province of Quebec, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable no later than 30 days after the issuance of the certificate. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the *Work* or other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

GC 5.9 PROGRESSIVE RELEASE OF HOLDBACK

- 5.9.1 In the common law jurisdictions, where legislation permits and where, upon application by the *Contractor*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, on the first *Working Day* following the expiration of the holdback period for such work stipulated in the lien legislation applicable to the *Place of the Work*.
- 5.9.2 In the Province of Quebec, where, upon application by the *Contractor*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, no later than 30 days after such certification by the *Consultant*. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the *Work* or other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.
- 5.9.2 Notwithstanding the provisions of the preceding paragraph, and notwithstanding the wording of such certificates, the *Contractor* shall ensure that such subcontract work or *Products* is protected pending the issuance of a final certificate for payment and be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when such certificates were issued.

GC 5.10 FINAL PAYMENT

- 5.10.1 When the *Contractor* considers that the *Work* is completed, the *Contractor* shall submit an application for final payment.
- 5.10.2 The *Consultant* will, no later than 15 *Working Days* after the receipt of an application from the *Contractor* for final payment, review the *Work* to verify the validity of the application and notify the *Contractor* that the application is valid or give reasons why it is not valid.
- 5.10.3 When the *Consultant* finds the *Contractor's* application for final payment valid, the *Consultant* will promptly issue a final certificate for payment.
- 5.10.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the *Place of the Work*, the *Owner* shall, no later than 5 *Working Days* after the issuance of a final certificate for payment, pay the *Contractor* as provided in Article A-5 of the Agreement - PAYMENT.

GC 5.11 WITHHOLDING OF PAYMENT

- 5.11.1 If because of climatic or other conditions reasonably beyond the control of the *Contractor*, there are items of work that cannot be performed, payment in full for that portion of the *Work* which has been performed as certified by the *Consultant* shall not be withheld or delayed by the *Owner* on account thereof, but the *Owner* may withhold, until the remaining portion of the *Work* is finished, only such an amount that the *Consultant* determines is sufficient and reasonable to cover the cost of performing such remaining work.

GC 5.12 NON-CONFORMING WORK

- 5.12.1 No payment by the *Owner* under the *Contract* nor partial or entire use or occupancy of the *Work* by the *Owner* shall constitute an acceptance of any portion of the *Work* or *Products* which are not in accordance with the requirements of the *Contract Documents*.

PART 6 CHANGES

GC 6.1 CHANGES

- 6.1.1 The *Owner*, through the *Consultant*, without invalidating the *Contract*, may make:
- .1 changes in the *Work* consisting of additions, deletions, or other revisions to the *Work* by *Change Order* or *Change Directive*, and
 - .2 changes to the *Contract Time* for the *Work*, or any part thereof, by *Change Order*.
- 6.1.2 The *Contractor* shall not perform a change in the *Work* without a *Change Order* or a *Change Directive*.

GC 6.2 CHANGE ORDER

- 6.2.1 When a change in the *Work* or the *Contract Time* is proposed or required, the *Consultant* will provide notice in writing to the *Contractor* describing the proposed change. The *Contractor* shall present, in a form acceptable to the *Consultant*, a method of adjustment or an amount of adjustment of the *Contract Price*, if any, and the adjustment in the *Contract Time*, if any, for the proposed change.
- 6.2.2 The method of adjustment of the *Contract Price* presented by the *Contractor* may be:
- .1 *Unit Prices* listed in the *Schedule of Prices* that are applicable to the change in the *Work* or, if *Unit Prices* listed in the *Schedule of Prices* are not directly applicable, by unit prices deduced or extrapolated from such *Unit Prices*,
 - .2 a lump sum or unit price quotation, or
 - .3 the cost plus method as provided in GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK.
- 6.2.3 When the *Owner* and *Contractor* agree to the adjustments in the *Contract Price* and *Contract Time* or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a *Change Order*, signed by *Owner* and *Contractor*. The value of the work performed as the result of a *Change Order* shall be included in applications for progress payment.

GC 6.3 CHANGE DIRECTIVE

- 6.3.1 If the *Owner* requires the *Contractor* to proceed with a change in the *Work* prior to the *Owner* and the *Contractor* agreeing upon the adjustment in *Contract Price* and *Contract Time*, the *Owner*, through the *Consultant*, shall issue a *Change Directive*.
- 6.3.2 A *Change Directive* shall only be used by the *Owner* to direct a change in the *Work* that is within the general scope of the *Contract Documents*.
- 6.3.3 Upon receipt of a *Change Directive*, the *Contractor* shall proceed promptly with the change in the *Work*.
- 6.3.4 The adjustment in the *Contract Price* for a change in the *Work* carried out by way of a *Change Directive* shall be on the basis of the *Contractor's* actual expenditures and savings attributable to the change. If a change in the *Work* results in expenditures only, the change in the *Work* shall be valued as cost plus work in accordance with GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK.
- 6.3.5 If a change in the *Work* results in savings only, the amount of the credit shall be the actual cost savings to the *Contractor*, without deduction for overhead or profit.
- 6.3.6 If a change in the *Work* results in both expenditures and savings, the change in the *Work* shall be valued as specified in GC 6.3.4 and GC 6.3.5, except that overhead and profit on the cost plus work shall be payable only on the net increase, if any, with respect to that change in the *Work*.
- 6.3.7 Pending determination of the final amount of a *Change Directive*, the undisputed value of the work performed as the result of a *Change Directive* is eligible to be included in progress payments.
- 6.3.8 If the *Owner* and *Contractor* do not agree on the proposed adjustment in the *Contract Time* or the method of determining it, the adjustment shall be referred to the *Consultant* for determination.

- 6.3.9 If at any time after the start of the work directed by a *Change Directive*, the *Owner* and the *Contractor* reach agreement on the adjustment to the *Contract Price* and to the *Contract Time*, this agreement shall be recorded in a *Change Order* signed by *Owner* and *Contractor*.

GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

- 6.4.1 If the *Owner* or the *Contractor* discover conditions at the *Place of the Work* which are:
- .1 subsurface or otherwise concealed physical conditions which existed before the commencement of the *Work* which differ materially from those indicated in the *Contract Documents*; or
 - .2 physical conditions, other than conditions due to weather, that are of a nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the *Contract Documents*;
- then the observing party shall notify the other party in writing before conditions are disturbed and in no event later than 5 *Working Days* after first observance of the conditions.
- 6.4.2 The *Consultant* will promptly investigate such conditions and make a finding. If the finding is that the conditions differ materially and this would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Consultant*, with the *Owner's* approval, will issue appropriate instructions for a change in the *Work* as provided in GC 6.2 - CHANGE ORDER or GC 6.3 - CHANGE DIRECTIVE.
- 6.4.3 If the *Consultant* finds that the conditions at the *Place of the Work* are not materially different or that no change in the *Contract Price* or the *Contract Time* is justified, the *Consultant* will report the reasons for this finding to the *Owner* and the *Contractor* in writing.
- 6.4.4 The *Contractor* shall not be entitled to an adjustment in the *Contract Price* or the *Contract Time* if such conditions were reasonably apparent prior to the time of bid closing.

GC 6.5 DELAYS

- 6.5.1 If the *Contractor* is delayed in the performance of the *Work* by an action or omission of the *Owner*, *Consultant*, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the *Contract Documents*, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.
- 6.5.2 If the *Contractor* is delayed in the performance of the *Work* by a stop work order issued by a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or any person employed or engaged by the *Contractor* directly or indirectly, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.
- 6.5.3 If the *Contractor* is delayed in the performance of the *Work* by
- .1 labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractors' association, of which the *Contractor* is a member or to which the *Contractor* is otherwise bound),
 - .2 fire, unusual delay by common carriers or unavoidable casualties,
 - .3 abnormally adverse weather conditions, or
 - .4 any other cause beyond the *Contractor's* control, other than one resulting from a default of or breach of *Contract* by the *Contractor*,
- then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless the *Contractor* agrees to a shorter extension. The *Contractor* shall not be entitled to payment for costs incurred by such delays unless such delays result from actions by the *Owner*.
- 6.5.4 No extension shall be made for delay unless notice in writing of the cause of delay is given to the *Consultant* not later than 10 *Working Days* after the commencement of delay, providing however, that in the case of a continuing cause of delay only one notice shall be necessary.

- 6.5.5 If no schedule is made under paragraph 2.2.9 of GC 2.2 - ROLE OF THE CONSULTANT, then no request for extension shall be made because of failure of the *Consultant* to furnish instructions until 10 *Working Days* after demand for such instructions has been made and not then, unless the request is reasonable.

GC6.6 CLAIMS

- 6.6.1 If the *Contractor* intends to make a claim for additional payment, or if the *Owner* intends to make a claim for a credit to the *Contract Price* or for damages of any kind, the party that intends to make the claim shall give notice in writing of intent to claim to the other party and to the *Consultant* as soon as practicable, but no later than 10 *Working Days* after commencement of the event or series of events giving rise to the claim. Failure to provide such notification shall invalidate the claim.
- 6.6.2 Upon commencement of the event or series of events giving rise to the claim, the party intending to make a claim shall:
- .1 take all reasonable measures to mitigate any loss or damage which may be incurred as a result of such event or series of events, and
 - .2 keep such records as may be necessary to support the claim.
- 6.6.3 Within 30 *Working Days* after commencement of the event or series of events giving rise to the claim, or such other reasonable time as may be agreed by the *Consultant*, the party making the claim shall submit to the *Consultant* a detailed account of the amount claimed and the grounds upon which the claim is based.
- 6.6.4 Where the event or series of events giving rise to the claim has a continuing effect, the detailed account submitted under paragraph 6.6.3 shall be considered to be an interim account and the party making the claim shall, at such intervals as the *Consultant* may reasonably require, submit further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. The party making the claim shall submit a final account with 30 *Working Days* after the end of the effects resulting from the event or series of events.
- 6.6.5 The *Consultant's* findings, with respect to a claim made by either party, will be given by notice in writing to the other party within 30 *Working Days* after receipt thereof by the *Consultant*, or such other time period as may be agreed by the parties. If such finding is not acceptable to both parties, the claim shall be settled in accordance with Part 8 of the General Conditions - DISPUTE RESOLUTION.

GC 6.7 QUANTITY VARIATIONS

- 6.7.1 The *Owner* or the *Contractor* may request an adjustment to a *Unit Price* contained in a *Schedule of Prices* included in the *Contract* provided that the actual quantity of the item in the *Schedule of Prices* exceeds or falls short of the estimated quantity by more than 15%.
- 6.7.2 Where the actual quantity exceeds the estimated quantity by more than 15%, a *Unit Price* adjusted pursuant to paragraph 6.7.1 shall apply only to the quantity that exceeds 115% of the estimated quantity.
- 6.7.3 Where the actual quantity falls short of the estimated quantity by more than 15%, a *Unit Price* adjusted pursuant to paragraph 6.7.1 shall not exceed the *Unit Price* that would cause the extended amount to equal the original extended amount derived from the original *Unit Price* and estimated quantity.
- 6.7.4 If either party requests adjustment of a *Unit Price*, both parties shall make all reasonable efforts to agree on a revised *Unit Price*. The agreed revised *Unit Price* shall be recorded in a Change Order.
- 6.7.5 If agreement on a revised *Unit Price* is not reached, the matter shall be subject to final determination in accordance with Part 8 - DISPUTE RESOLUTION. Pending determination of the revised *Unit Price*, payment for the *Work* performed shall be included in progress payments based on the unrevised *Unit Price*.

PART 7 DEFAULT NOTICE

GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, STOP THE WORK, OR TERMINATE THE CONTRACT

- 7.1.1 If the *Contractor* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Contractor's* insolvency, or if a receiver is appointed because of the *Contractor's* insolvency, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, by giving the *Contractor* or receiver or trustee in bankruptcy notice in writing, terminate the *Contract*.
- 7.1.2 If the *Contractor* neglects to prosecute the *Work* properly or otherwise fails to comply with the requirements of the *Contract* to a substantial degree and if the *Consultant* has given a written statement to the *Owner* and *Contractor* that sufficient cause exists to justify such action, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, notify the *Contractor* in writing 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.
- 7.1.3 If the default cannot be corrected in the 5 *Working Days* specified, the *Contractor* shall be in compliance with the *Owner's* instructions if the *Contractor*:
- .1 commences the correction of the default within the specified time, and
 - .2 provides the *Owner* with an acceptable schedule for such correction, and
 - .3 corrects the default in accordance with such schedule.
- 7.1.4 If the *Contractor* fails to correct the default in the time specified or subsequently agreed upon, without prejudice to any other right or remedy the *Owner* may have, the *Owner* may:
- .1 correct such default and deduct the cost thereof from any payment then or thereafter due the *Contractor* provided the *Consultant* has certified such cost to the *Owner* and the *Contractor*, or
 - .2 terminate the *Contractor's* right to continue with the *Work* in whole or in part or terminate the *Contract*.
- 7.1.5 If the *Owner* terminates the *Contractor's* right to continue with the *Work* as provided in paragraphs 7.1.1 and 7.1.4, the *Owner* shall be entitled to:
- .1 take possession of the *Work* and *Products* delivered to the *Place of the Work*, subject to the rights of third parties, and finish the *Work* by whatever method the *Owner* may consider expedient, but without undue delay or expense, and
 - .2 withhold further payment to the *Contractor* until a final certificate for payment is issued, and
 - .3 charge the *Contractor* the amount by which the full cost of finishing the *Work* as certified by the *Consultant*, including compensation to the *Consultant* for the *Consultant's* additional services and a reasonable allowance as determined by the *Consultant* to cover the cost of corrections to work performed by the *Contractor* that may be required under GC 12.3 - WARRANTY, exceeds the unpaid balance of the *Contract Price*; however, if such cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Contractor* the difference, and
 - .4 on expiry of the warranty period, charge the *Contractor* the amount by which the cost of corrections to the *Contractor's* work under GC 12.3 - WARRANTY exceeds the allowance provided for such corrections, or if the cost of such corrections is less than the allowance, pay the *Contractor* the difference.
- 7.1.6 The *Contractor's* obligation under the *Contract* as to quality, correction, and warranty of the work performed by the *Contractor* up to the time of termination shall continue in force after such termination.

GC 7.2 CONTRACTOR'S RIGHT TO STOP THE WORK OR TERMINATE THE CONTRACT

- 7.2.1 If the *Owner* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Owner's* insolvency, or if a receiver is appointed because of the *Owner's* insolvency, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, by giving the *Owner* or receiver or trustee in bankruptcy notice in writing, terminate the *Contract*.
- 7.2.2 If the *Work* is stopped or otherwise delayed for a period of 20 *Working Days* or more under an order of a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or of anyone directly or indirectly employed or engaged by the *Contractor*, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, by giving the *Owner* notice in writing, terminate the *Contract*.

- 7.2.3 The *Contractor* may notify the *Owner* in writing, with a copy to the *Consultant*, that the *Owner* is in default of the *Owner's* contractual obligations if:
- .1 the *Owner* fails to furnish, when so requested by the *Contractor*, reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*, or
 - .2 the *Consultant* fails to issue a certificate as provided in GC 5.3 PROGRESS PAYMENT, or
 - .3 the *Owner* fails to pay the *Contractor* when due the amounts certified by the *Consultant* or awarded by arbitration or court, or
 - .4 the *Owner* violates the requirements of the *Contract* to a substantial degree and the *Consultant*, except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER, confirms by written statement to the *Contractor* that sufficient cause exists.
- 7.2.4 The *Contractor's* notice in writing to the *Owner* provided under paragraph 7.2.3 shall advise that if the default is not corrected within 5 *Working Days* following the receipt of the notice in writing, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, stop the *Work* or terminate the *Contract*.
- 7.2.5 If the *Contractor* terminates the *Contract* under the conditions set out above, the *Contractor* shall be entitled to be paid for all work performed including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the termination of the *Contract*.

PART 8 DISPUTE RESOLUTION

GC 8.1 AUTHORITY OF THE CONSULTANT

- 8.1.1 Differences between the parties to the *Contract* as to the interpretation, application or administration of the *Contract* or any failure to agree where agreement between the parties is called for, herein collectively called disputes, which are not resolved in the first instance by findings of the *Consultant* as provided in GC 2.2 - ROLE OF THE CONSULTANT, shall be settled in accordance with the requirements of Part 8 of the General Conditions - DISPUTE RESOLUTION.
- 8.1.2 If a dispute arises under the *Contract* in respect of a matter in which the *Consultant* has no authority under the *Contract* to make a finding, the procedures set out in paragraph 8.1.3 and paragraphs 8.2.3 to 8.2.8 of GC 8.2 - NEGOTIATION, MEDIATION, AND ARBITRATION, and in GC 8.3 - RETENTION OF RIGHTS apply to that dispute with the necessary changes to detail as may be required.
- 8.1.3 If a dispute is not resolved promptly, the *Consultant* will give such instructions as in the *Consultant's* opinion are necessary for the proper performance of the *Work* and to prevent delays pending settlement of the dispute. The parties shall act immediately according to such instructions, it being understood that by so doing neither party will jeopardize any claim the party may have. If it is subsequently determined that such instructions were in error or at variance with the *Contract Documents*, the *Owner* shall pay the *Contractor* costs incurred by the *Contractor* in carrying out such instructions which the *Contractor* was required to do beyond what the *Contract Documents* correctly understood and interpreted would have required, including costs resulting from interruption of the *Work*.

GC 8.2 NEGOTIATION, MEDIATION, AND ARBITRATION

- 8.2.1 In accordance with the latest edition of the Rules for Mediation of Construction Disputes as provided in CCDC 40, the parties shall appoint a Project Mediator
- .1 within 20 *Working Days* after the *Contract* was awarded, or
 - .2 if the parties neglected to make an appointment within the 20 *Working Day* period, within 10 *Working Days* after either party by notice in writing requests that the Project Mediator be appointed.

- 8.2.2 A party shall be conclusively deemed to have accepted a finding of the *Consultant* under GC 2.2 - ROLE OF THE CONSULTANT and to have expressly waived and released the other party from any claims in respect of the particular matter dealt with in that finding unless, within 15 *Working Days* after receipt of that finding, the party sends a notice in writing of dispute to the other party and to the *Consultant*, which contains the particulars of the matter in dispute and the relevant provisions of the *Contract Documents*. The responding party shall send a notice in writing of reply to the dispute within 10 *Working Days* after receipt of the notice of dispute setting out particulars of this response and any relevant provisions of the *Contract Documents*.
- 8.2.3 The parties shall make all reasonable efforts to resolve their dispute by amicable negotiations and agree to provide, without prejudice, frank, candid and timely disclosure of relevant facts, information, and documents to facilitate these negotiations.
- 8.2.4 After a period of 10 *Working Days* following receipt of a responding party's notice in writing of reply under paragraph 8.2.2, the parties shall request the Project Mediator to assist the parties to reach agreement on any unresolved dispute. The mediated negotiations shall be conducted in accordance with the latest edition of the Rules for Mediation of Construction Disputes as provided in CCDC 40.
- 8.2.5 If the dispute has not been resolved within 10 *Working Days* after the Project Mediator was requested under paragraph 8.2.4 or within such further period agreed by the parties, the Project Mediator shall terminate the mediated negotiations by giving notice in writing to both parties.
- 8.2.6 By giving a notice in writing to the other party, not later than 10 *Working Days* after the date of termination of the mediated negotiations under paragraph 8.2.5, either party may refer the dispute to be finally resolved by arbitration under the latest edition of the Rules for Arbitration of Construction Disputes as provided in CCDC 40. The arbitration shall be conducted in the jurisdiction of the *Place of the Work*.
- 8.2.7 On expiration of the 10 *Working Days*, the arbitration agreement under paragraph 8.2.6 is not binding on the parties and, if a notice is not given under paragraph 8.2.6 within the required time, the parties may refer the unresolved dispute to the courts or to any other form of dispute resolution, including arbitration, which they have agreed to use.
- 8.2.8 If neither party requires by notice in writing given within 10 *Working Days* of the date of notice requesting arbitration in paragraph 8.2.6 that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.2.6 shall be
- .1 held in abeyance until
 - (1) *Substantial Performance of the Work*,
 - (2) the *Contract* has been terminated, or
 - (3) the *Contractor* has abandoned the *Work*,whichever is earlier, and
 - .2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.2.6.

GC 8.3 RETENTION OF RIGHTS

- 8.3.1 It is agreed that no act by either party shall be construed as a renunciation or waiver of any rights or recourses, provided the party has given the notices required under Part 8 of the General Conditions - DISPUTE RESOLUTION and has carried out the instructions as provided in paragraph 8.1.3.
- 8.3.2 Nothing in Part 8 of the General Conditions - DISPUTE RESOLUTION shall be construed in any way to limit a party from asserting any statutory right to a lien under applicable lien legislation of the jurisdiction of the *Place of the Work* and the assertion of such right by initiating judicial proceedings is not to be construed as a waiver of any right that party may have under paragraph 8.2.6 to proceed by way of arbitration to adjudicate the merits of the claim upon which such a lien is based.

PART 9 PROTECTION OF PERSONS AND PROPERTY

GC 9.1 PROTECTION OF WORK AND PROPERTY

- 9.1.1 The *Contractor* shall protect the *Work* and the *Owner's* property and property adjacent to the *Place of the Work* from damage which may arise as the result of the *Contractor's* operations under the *Contract*, and shall be responsible for such damage, except damage which occurs as the result of:
- .1 errors in the *Contract Documents*;
 - .2 acts or omissions by the *Owner*, the *Consultant*, other contractors, their agents and employees.
- 9.1.2 Before commencing any work, the *Contractor* shall determine the location of all known underground utilities and structures indicated in the *Contract Documents* or that are reasonably apparent in an inspection of the *Place of the Work*.
- 9.1.3 Should the *Contractor* in the performance of the *Contract* damage the *Work*, the *Owner's* property, or property adjacent to the *Place of the Work*, the *Contractor* shall be responsible for the making good such damage at the *Contractor's* expense.
- 9.1.4 Should damage occur to the *Work* or *Owner's* property for which the *Contractor* is not responsible, as provided in paragraph 9.1.1, the *Contractor* shall make good such damage to the *Work* and, if the *Owner* so directs, to the *Owner's* property. The *Contract Price* and *Contract Time* shall be adjusted as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.

GC 9.2 DAMAGES AND MUTUAL RESPONSIBILITY

- 9.2.1 If either party to the *Contract* should suffer damage in any manner because of any wrongful act or neglect of the other party or of anyone for whom the other party is responsible in law, then that party shall be reimbursed by the other party for such damage. The reimbursing party shall be subrogated to the rights of the other party in respect of such wrongful act or neglect if it be that of a third party.
- 9.2.2 If the *Contractor* has caused damage to the work of another contractor on the *Project*, the *Contractor* shall upon due notice in writing settle with the other contractor by negotiation or arbitration. If the other contractor makes a claim against the *Owner* on account of damage alleged to have been so sustained, the *Owner* shall notify the *Contractor* in writing and may require the *Contractor* to defend the action at the *Contractor's* expense. The *Contractor* shall satisfy a final order or judgment against the *Owner* and pay the costs incurred by the *Owner* arising from such action.
- 9.2.3 If the *Contractor* becomes liable to pay or satisfy a final order, judgment, or award against the *Owner*, then the *Contractor*, upon undertaking to indemnify the *Owner* against any and all liability for costs, shall have the right to appeal in the name of the *Owner* such final order or judgment to any and all courts of competent jurisdiction.

GC 9.3 TOXIC AND HAZARDOUS SUBSTANCES

- 9.3.1 For the purposes of applicable environmental legislation, the *Owner* shall be deemed to have control and management of the *Place of the Work* with respect to existing conditions.
- 9.3.2 Prior to the *Contractor* commencing the *Work*, the *Owner* shall:
- .1 take all reasonable steps to determine whether any toxic or hazardous substances are present at the *Place of the Work*, and
 - .2 provide the *Consultant* and the *Contractor* with a written list of any such substances that are known to exist and their locations.
- 9.3.3 The *Owner* shall take all reasonable steps to ensure that no person suffers injury, sickness, or death and that no property is damaged or destroyed as a result of exposure to, or the presence of, toxic or hazardous substances which were at the *Place of the Work* prior to the *Contractor* commencing the *Work*.
- 9.3.4 Unless the *Contract* expressly provides otherwise, the *Owner* shall be responsible for taking all necessary steps, in accordance with legal requirements, to dispose of, store or otherwise render harmless toxic or hazardous substances which were present at the *Place of the Work* prior to the *Contractor* commencing the *Work*.

- 9.3.5 If the *Contractor*
- .1 encounters toxic or hazardous substances at the *Place of the Work*, or
 - .2 has reasonable grounds to believe that toxic or hazardous substances are present at the *Place of the Work*, which were not disclosed by the *Owner*, as required under paragraph 9.3.2, or which were disclosed but have not been dealt with as required under paragraph 9.3.4, the *Contractor* shall
 - .3 take all reasonable steps, including stopping the *Work*, to ensure that no person suffers injury, sickness, or death and that no property is damaged or destroyed as a result of exposure to or the presence of the substances, and
 - .4 immediately report the circumstances to the *Consultant* and the *Owner* in writing.
- 9.3.6 If the *Contractor* is delayed in performing the *Work* or incurs additional costs as a result of taking steps required under paragraph 9.3.5.3, the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the *Contractor* shall be reimbursed for reasonable costs incurred as a result of the delay and as a result of taking those steps.
- 9.3.7 Notwithstanding paragraphs 2.2.6 and 2.2.7 of GC 2.2 - ROLE OF THE CONSULTANT, or paragraph 8.1.1 of GC 8.1 - AUTHORITY OF THE CONSULTANT, the *Consultant* may select and rely upon the advice of an independent expert in a dispute under paragraph 9.3.6 and, in that case, the expert shall be deemed to have been jointly retained by the *Owner* and the *Contractor* and shall be jointly paid by them.
- 9.3.8 The *Owner* shall indemnify and hold harmless the *Contractor*, the *Consultant*, their agents and employees, from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of or resulting from exposure to, or the presence of, toxic or hazardous substances which were at the *Place of the Work* prior to the *Contractor* commencing the *Work*. This obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity set out in GC 12.1 - INDEMNIFICATION or which otherwise exist respecting a person or party described in this paragraph.
- 9.3.9 GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES shall govern over the provisions of paragraph 1.3.1 of GC 1.3 RIGHTS AND REMEDIES or GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

GC 9.4 ARTIFACTS AND FOSSILS

- 9.4.1 Fossils, coins, articles of value or antiquity, structures, and other remains or things of scientific or historic interest discovered at the *Place or Work* shall, as between the *Owner* and the *Contractor*, be deemed to be the absolute property of the *Owner*.
- 9.4.2 The *Contractor* shall take all reasonable precautions to prevent removal or damage to discoveries as identified in paragraph 9.4.1, and shall notify the *Consultant* immediately upon discovery of such items.
- 9.4.3 The *Consultant* will investigate the impact on the *Work* of the discoveries identified in paragraph 9.4.1. If conditions are found that would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Consultant*, with the *Owner's* approval, shall issue appropriate instructions for a change in the *Work* as provided in GC 6.2 - CHANGE ORDER or GC 6.3 - CHANGE DIRECTIVE.

GC 9.5 CONSTRUCTION SAFETY

- 9.5.1 Subject to paragraph 3.2.2.2 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, the *Contractor* shall be solely responsible for construction safety at the *Place or the Work* and for compliance with the rules, regulations, and practices required by the applicable construction health and safety legislation and shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the *Work*.

PART 10 GOVERNING REGULATIONS

GC 10.1 TAXES AND DUTIES

- 10.1.1 The *Contract Price* shall include all taxes and customs duties in effect at the time of the bid closing except for *Value Added Taxes* payable by the *Owner* to the *Contractor* as stipulated in Article A-4 of the Agreement - CONTRACT PRICE.

- 10.1.2 Any increase or decrease in costs to the *Contractor* due to changes in such included taxes and duties after the time of bid closing shall increase or decrease the *Contract Price* accordingly.

GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

- 10.2.1 The laws of the *Place of the Work* shall govern the *Work*.
- 10.2.2 Except for the permits and fees, including those required under paragraph 10.2.3, which the *Contract Documents* specify as the responsibility of the *Contractor*, the *Owner* shall obtain and pay for all necessary approvals, permits, permanent easements, and rights of servitude.
- 10.2.3 The *Contractor* shall obtain and pay for permits, licenses, inspections and certificates necessary for performance of the *Work* and customarily obtained after signing of the *Contract*.
- 10.2.4 The *Contractor* shall give the required notices and comply with the laws, ordinances, rules, regulations, or codes which are or become in force during the performance of the *Work* and which relate to the *Work*, to the preservation of the public health, and to construction safety.
- 10.2.5 The *Contractor* shall not be responsible for verifying that the *Contract Documents* are in compliance with the applicable laws, ordinances, rules, regulations, or codes relating to the *Work*. If the *Contract Documents* are at variance therewith, or if, subsequent to the time of bid closing, changes are made to the applicable laws, ordinances, rules, regulations, or codes which require modification to the *Contract Documents*, the *Contractor* shall notify the *Consultant* in writing requesting direction immediately upon such variance or change becoming known. The *Consultant* will make the changes required to the *Contract Documents* as provided in GC 6.1 - CHANGES, GC 6.2 - CHANGE ORDER, and GC 6.3 - CHANGE DIRECTIVE.
- 10.2.6 If the *Contractor* fails to notify the *Consultant* in writing; and fails to obtain direction as required in paragraph 10.2.5; and performs work knowing it to be contrary to any laws, ordinances, rules, regulations, or codes; the *Contractor* shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses, and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations, or codes.
- 10.2.7 If, subsequent to the time of bid closing, changes are made to applicable laws, ordinances, rules, regulations, or codes of authorities having jurisdiction which affect the cost of the *Work*, either party may submit a claim in accordance with the requirements of GC 6.6 - CLAIMS.

GC 10.3 PATENT FEES

- 10.3.1 The *Contractor* shall pay the royalties and patent licence fees required for the performance of the *Contract*. The *Contractor* shall hold the *Owner* harmless from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention by the *Contractor* or anyone for whose acts the *Contractor* may be liable.
- 10.3.2 The *Owner* shall hold the *Contractor* harmless against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention in executing anything for the purpose of the *Contract*, the model, plan, or design of which was supplied to the *Contractor* as part of the *Contract Documents*.

GC 10.4 WORKERS' COMPENSATION

- 10.4.1 Prior to commencing the *Work*, *Substantial Performance of the Work*, and the issuance of the final certificate for payment, the *Contractor* shall provide evidence of compliance with workers' compensation legislation at the *Place of the Work*, including payments due thereunder.
- 10.4.2 At any time during the term of the *Contract*, when requested by the *Owner*, the *Contractor* shall provide such evidence of compliance by the *Contractor* and *Subcontractors*.

PART 11 INSURANCE AND CONTRACT SECURITY

GC 11.1 INSURANCE

11.1.1 Without restricting the generality of GC 12.1 - INDEMNIFICATION, the *Contractor* shall provide, maintain, and pay for the insurance coverages specified in GC 11.1 - INSURANCE. Unless otherwise stipulated, the duration of each insurance policy shall be from the date of commencement of the *Work* until the date of the final certificate for payment. Prior to commencement of the *Work* and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the *Contractor* shall promptly provide the *Owner* with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements.

.1 General Liability Insurance:

General liability insurance shall be in the joint names of the *Contractor*, the *Owner*, and the *Consultant*, with limits of not less than \$2,000,000 per occurrence and with a property damage deductible not exceeding \$2,500. The insurance coverage shall not be less than the insurance required by IBC Form 2100, or its equivalent replacement, provided that IBC Form 2100 shall contain the latest edition of the relevant CCDC endorsement form. To achieve the desired limit, umbrella, or excess liability insurance may be used. All liability coverage shall be maintained for completed operations hazards from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, on an ongoing basis for a period of 6 years following *Substantial Performance of the Work*. Where the *Contractor* maintains a single, blanket policy, the addition of the *Owner* and the *Consultant* is limited to liability arising out of the *Work* and all operations necessary or incidental thereto. The policy shall be endorsed to provide the *Owner* with not less than 30 days notice in writing in advance of any cancellation, and of change or amendment restricting coverage.

.2 Automobile Liability Insurance:

Automobile liability insurance in respect of licensed vehicles shall have limits of not less than \$2,000,000 inclusive per occurrence for bodily injury, death, and damage to property, covering all licensed vehicles owned or leased by the *Contractor*, and endorsed to provide the *Owner* with not less than 15 days notice in writing in advance of any cancellation, change or amendment restricting coverage. Where the policy has been issued pursuant to a government-operated automobile insurance system, the *Contractor* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Contractor*.

.3 Aircraft and Watercraft Liability Insurance:

Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft if used directly or indirectly in the performance of the *Work*, including use of additional premises, shall be subject to limits of not less than \$2,000,000 inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof and limits of not less than \$2,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*. The policies shall be endorsed to provide the *Owner* with not less than 15 days notice in writing in advance of cancellation, change, or amendment restricting coverage.

.4 Property and Boiler and Machinery Insurance:

(1) "All risks" property insurance shall be in the joint names of the *Contractor*, the *Owner*, the *Consultant*, and all *Subcontractors*, insuring not less than the sum of the amount of the *Contract Price* and the full value, as stated in the Supplementary Conditions, of *Products* that are specified to be provided by the *Owner* for incorporation into the *Work*, with a deductible not exceeding \$2,500. The insurance coverage shall not be less than the insurance required by IBC Form 4042 or its equivalent replacement, provided that IBC Form 4042 shall contain the latest edition of the relevant CCDC endorsement form. The coverage shall be maintained continuously until 5 *Working Days* after the date of the final certificate for payment.

(2) Boiler and machinery insurance shall be in the joint names of the *Contractor*, the *Owner*, and the *Consultant* for not less than the replacement value of the boilers, pressure vessels, and other insurable objects forming part of the *Work*. The insurance provided shall not be less than the insurance provided by the "Comprehensive Boiler and Machinery Form" and shall be maintained continuously from commencement of use or operation of the property insured and until 5 *Working Days* after the date of the final certificate for payment.

- (3) The policies shall allow for partial or total use or occupancy of the *Work*. If because of such use or occupancy the *Contractor* is unable to provide coverage, the *Contractor* shall notify the *Owner* in writing. Prior to such use or occupancy the *Owner* shall provide, maintain, and pay for all risk property and boiler insurance insuring the full value of the *Work*, as in sub-paragraphs (1) and (2), including coverage for such use or occupancy and shall provide the *Contractor* with proof of such insurance. The *Contractor* shall refund to the *Owner* the unearned premiums applicable to the *Contractor's* policies upon termination of coverage.
- (4) The policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. The *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except that the *Contractor* shall be entitled to such reasonable extension of *Contract Time* relative to the extent of the loss or damage as the *Consultant* may recommend in consultation with the *Contractor*.
- (5) The *Contractor* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount at which the *Owner's* interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds and as provided in GC 5.5 - APPLICATIONS FOR PROGRESS PAYMENT and GC 5.6 - PROGRESS PAYMENT. In addition the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor's* interest in the restoration of the *Work*.
- (6) In the case of loss or damage to the *Work* arising from the work of another contractor, or *Owner's* own forces, the *Owner*, in accordance with the *Owner's* obligations under paragraph 3.2.2.4 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, shall pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as provided in GC 5.5 - APPLICATIONS FOR PROGRESS PAYMENT and GC 5.6 - PROGRESS PAYMENT.

.5 Contractors' Equipment Insurance:

"All risks" contractors' equipment insurance covering *Construction Equipment* used by the *Contractor* for the performance of the *Work*, including boiler insurance on temporary boilers and pressure vessels, shall be in a form acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. The policies shall be endorsed to provide the *Owner* with not less than 15 days notice in writing in advance of cancellation, change, or amendment restricting coverage. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance, the *Owner* agrees to waive the equipment insurance requirement.

- 11.1.2 The *Contractor* shall be responsible for deductible amounts under the policies except where such amounts may be excluded from the *Contractor's* responsibility by the terms of GC 9.1 - PROTECTION OF WORK AND PROPERTY and GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.
- 11.1.3 Where the full insurable value of the *Work* is substantially less than the *Contract Price*, the *Owner* may reduce the amount of insurance required or waive the course of construction insurance requirement.
- 11.1.4 If the *Contractor* fails to provide or maintain insurance as required by the *Contract Documents*, then the *Owner* shall have the right to provide and maintain such insurance and give evidence to the *Contractor* and the *Consultant*. The *Contractor* shall pay the cost thereof to the *Owner* on demand or the *Owner* may deduct the amount which is due or may become due to the *Contractor*.
- 11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the *Place of the Work*.

GC 11.2 CONTRACT SECURITY

- 11.2.1 The *Contractor* shall, prior to commencement of the *Work* or within the specified time, provide to the *Owner* any contract security specified in the *Contract Documents*.
- 11.2.2 If the *Contract Documents* require surety bonds to be provided, 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 fulfillment of the *Contract*. The form of such bonds shall be in accordance with the latest edition of the CCDC approved bond forms.

PART 12 INDEMNIFICATION — WAIVER — WARRANTY

GC 12.1 INDEMNIFICATION

- 12.1.1 The *Contractor* shall indemnify and hold harmless the *Owner* and the *Consultant*, their agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings (hereinafter called "claims"), by third parties that arise out of, or are attributable to, the *Contractor's* performance of the *Contract* provided such claims are:
- .1 attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property, and
 - .2 caused by negligent acts or omissions of the *Contractor* or anyone for whose acts the *Contractor* may be liable, and
 - .3 made in writing within a period of 6 years from the date of *Substantial Performance of the Work* as set out in the certificate of *Substantial Performance of the Work*, or within such shorter period as may be prescribed by any limitation statute of the province or territory of the *Place of the Work*.
- The *Owner* expressly waives the right to indemnity for claims other than those stated above.
- 12.1.2 The obligation of the *Contractor* to indemnify hereunder shall be limited to \$2,000,000 per occurrence from the commencement of the *Work* until *Substantial Performance of the Work* and thereafter to an aggregate limit of \$2,000,000.
- 12.1.3 The *Owner* shall indemnify and hold harmless the *Contractor*, the *Contractor's* agents and employees from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to a lack of or defect in title or an alleged lack of or defect in title to the *Place of the Work*.
- 12.1.4 GC 12.1 - INDEMNIFICATION shall govern over the provisions of paragraph 1.3.1 of GC 1.3 -RIGHTS AND REMEDIES or GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

GC 12.2 WAIVER OF CLAIMS

- 12.2.1 Waiver of Claims by *Owner*
- As of the date of the final certificate for payment, the *Owner* expressly waives and releases the *Contractor* from all claims against the *Contractor* including without limitation those that might arise from the negligence or breach of contract by the *Contractor* except one or more of the following:
- .1 those made in writing prior to the date of the final certificate for payment and still unsettled;
 - .2 those arising from the provisions of GC 12.1 - INDEMNIFICATION or GC 12.3 - WARRANTY;
 - .3 those arising from the provisions of paragraph 9.3.5 of GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS and arising from the *Contractor* bringing or introducing any toxic or hazardous substances and materials to the *Place of the Work* after the *Contractor* commences the *Work*.
- In the Common Law provinces GC 12.2.1.4 shall read as follows:
- .4 those made in writing within a period of 6 years from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, or within such shorter period as may be prescribed by any limitation statute of the province or territory of the *Place of the Work* and arising from any liability of the *Contractor* for damages resulting from the *Contractor's* performance of the *Contract* with respect to substantial defects or deficiencies in the *Work* for which the *Contractor* is proven responsible. As used herein "substantial defects or deficiencies" means those defects or deficiencies in the *Work* which affect the *Work* to such an extent or in such a manner that a significant part or the whole of the *Work* is unfit for the purpose intended by the *Contract Documents*.
- In the Province of Quebec GC 12.2.1.4 shall read as follows:
- .4 those arising under the provisions of Article 2118 of the Civil Code of Quebec.
- 12.2.2 Waiver of Claims by *Contractor*
- As of the date of the final certificate for payment, the *Contractor* expressly waives and releases the *Owner* from all claims against the *Owner* including without limitation those that might arise from the negligence or breach of contract by the *Owner* except:
- .1 those made in writing prior to the *Contractor's* application for final payment and still unsettled; and

.2 those arising from the provisions of GC 9.3 - TOXIC AND HAZARDOUS SUBSTANCES or GC 10.3 - PATENT FEES.

12.2.3 GC 12.2 - WAIVER OF CLAIMS shall govern over the provisions of paragraph 1.3.1 of GC 1.3 - RIGHTS AND REMEDIES, GC 6.6 - CLAIMS, and GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

GC 12.3 WARRANTY

12.3.1 Except for extended warranties as described in paragraph 12.3.6, the warranty period under the *Contract* is one year from the date of *Substantial Performance of the Work*.

12.3.2 The *Contractor* shall be responsible for the proper performance of the *Work* to the extent that the design and *Contract Documents* permit such performance.

12.3.3 Subject to paragraph 12.3.2, the *Contractor* shall correct promptly, at the *Contractor's* expense, defects or deficiencies in the *Work* which appear prior to and during the warranty periods specified in the *Contract Documents*.

12.3.4 The *Owner*, through the *Consultant*, shall promptly give the *Contractor* notice in writing of observed defects and deficiencies which occur during the one-year warranty period.

12.3.5 The *Contractor* shall correct or pay for damage resulting from corrections made under the requirements of paragraph 12.3.3.

12.3.6 Any extended warranties required beyond the one-year warranty period, as described in paragraph 12.3.1, shall be as specified in the *Contract Documents*. Extended warranties shall be issued by the warrantor to the benefit of the *Owner*. The *Contractor's* responsibility with respect to extended warranties shall be limited to obtaining any such extended warranties from the warrantor. The obligations under such extended warranties are solely the responsibility of the warrantor.

Town of Three Rivers
Queens Road Sidewalk
Upgrades
Contract 242652.00

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INSURANCE REQUIREMENTS

CCDC 41 CCDC INSURANCE REQUIREMENTS

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1. General liability insurance shall be with limits of not less than \$10,000,000 per occurrence, an aggregate limit of not less than \$10,000,000 within any policy year with respect to completed operations, and a deductible not exceeding \$10,000. The insurance coverage shall not be less than the insurance provided by IBC Form 2100 (including an extension for a standard provincial and territorial form of non-owned automobile liability policy) and IBC Form 2320. To achieve the desired limit, umbrella or excess liability insurance may be used. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.
2. Automobile liability insurance in respect of vehicles that are required by law to be insured under a contract by a Motor Vehicle Liability Policy, shall have limits of not less than \$10,000,000 inclusive per occurrence for bodily injury, death and damage to property, covering all vehicles owned or leased by the *Contractor*. Where the policy has been issued pursuant to a government-operated automobile insurance system, the *Contractor* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Contractor*.
3. Manned Aircraft and watercraft liability insurance with respect to owned or non-owned aircraft and watercraft (if used directly or indirectly in the performance of the *Work*), including use of additional premises, shall have limits of not less than \$10,000,000 inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof and limits of not less than \$10,000,000 for aircraft passenger hazard. Such insurance shall be in a form acceptable to the *Owner*.
4. Unmanned aerial vehicle liability insurance with respect to owned or non-owned aircraft (if used directly or indirectly in the performance of the *Work*), shall have limits of not less than \$5,000,000 per occurrence or accident for bodily injury, death and damage to property or such amounts as required by any applicable law or regulation.
5. "Broad form" property insurance shall have limits of not less than the sum of 1.1 times *Contract Price* and the full value, as stated in the *Contract*, of *Products* and design services that are specified to be provided by the *Owner* for incorporation into the *Work*, with a deductible not exceeding \$10,000. The insurance coverage shall not be less than the insurance provided by IBC Forms 4042 and 4047 or their equivalent replacement. Subject to satisfactory proof of financial capability by the *Contractor*, the *Owner* may agree to increase the deductible amounts.
6. Boiler and machinery insurance shall have limits of not less than the replacement value of the permanent or temporary boilers and pressure vessels, and other insurable objects forming part of the *Work*. The insurance coverage shall not be less than the insurance provided by a comprehensive boiler and machinery policy including hot testing and commissioning.
7. Contractors' equipment insurance coverage written on an "all risks" basis covering *Construction Equipment* used by the *Contractor* for the performance of the *Work*, shall be in a form acceptable to the *Owner* and shall not allow subrogation claims by the insurer against the *Owner*. Subject to satisfactory proof of financial capability by the *Contractor* for self-insurance, the *Owner* may agree to waive the equipment insurance requirement.
8. Contractors' Pollution liability insurance shall have limits of not less than \$5,000,000 per occurrence for bodily injury, death and damage to property.

Association of
Canadian
Engineering
Companies

Canadian
Construction
Association

Construction
Specifications Canada

The Royal Architectural
Institute of Canada

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Queens Road Sidewalk	General Conditions	Page 1
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Contract No. 242652.00	to CCDC 18-2001	February 2025

THESE SUPPLEMENTARY GENERAL CONDITIONS AMEND THE DEFINITIONS AND GENERAL CONDITIONS

DEFINITIONS

1. Page 6, delete Definition 7 and replace with the following new definition:
 7. The Contract Price shall be the sum of the products of the actual final quantities that are incorporated in, or made necessary by the Work, as confirmed by count and measurement, multiplied by the appropriate Unit Prices from the Tender Form together with any adjustments that are made in accordance with the provisions of the Contract Documents plus the amount of Government Sales Tax. When a Lump Sum Stipulated Price form the basis of payment, the Contract Price is as stated in the Form of Agreement, Article A-4, plus the amount of Government Sales Tax.

SEE ATTACHED GENERAL CONDITIONS OF CONTRACT

1. GC 2.4 - DEFECTIVE WORK

Page 11, clause 2.4.3, add the following sentence at the end of the clause:

"If the Consultant 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."

2. GC 3.7 - LAYOUT OF THE WORK

Page 13, delete clause 3.7.1 in its entirety and replace with the following:

3.7.1 Before the work of the Contract begins, the Consultant will, once only, provide the data for sufficient reference points to identify the Works on the ground. 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.

3. GC 3.11 - SHOP DRAWINGS

Page 14, clause 3.11.4, delete second sentence and replace to read: "Contractor shall prepare and jointly review with Consultant a schedule of dates for submission of shop drawings."

4. GC 5.4 - BASIS OF PAYMENT FOR COST PLUS WORK

Page 16, after clause 5.4.2, add the following:

5.4.3 The percentage fee as stated in clause 5.4.1 shall be two percent (2%) of the cost plus work but shall not be applied to

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the cost of construction equipment when such cost is based on rates which already include overhead and profit.

5. GC 5.6 - PROGRESS PAYMENT

Page 18, in clause 5.6.1, line 1, change "5 working days" to read "10 calendar days" and in line 2, change "GC5.2" to read "GC 5.5".

Page 18, delete clause 5.6.2 in its entirety and replace with the following:

- 5.6.2 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 18, after clause 5.6.3, add the following additional clause:

- 5.6.4 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.

6. GC 5.7 - SUBSTANTIAL PERFORMANCE OF THE WORK

Page 18, after clause 5.7.4, add the following additional clause:

- 5.7.5 Fifteen (15) days before the Contractor submits the application for Substantial Performance of the Work, all Operations and Maintenance Manual materials shall be submitted to the Consultant in accordance with the Contract Documents. The Certificate of Substantial Performance will not be issued until the Consultant received the required documents.

7. GC 5.8 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

Page 18, after clause 5.8.1.2, add the following:

- 5.8.1.3 Submit a certificate by deed search to the Owner by a solicitor qualified to practice law in the Province of Prince of Prince Edward Island that no lien associated with the Work exists against the Owner's property or work.
- 5.8.1.4 Submit a clearance letter from the Workers' Compensation Board.
- 5.8.1.5 All such documents shall be dated not earlier than the expiry of the lien period.
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Page 19, delete clause 5.8.3 in its entirety, renumber subsequent clause.
Page 19, add new clause 5.8.4 as follows:

5.8.4 If, within 60 days after the issue by the Consultant of the Certificate of Substantial Performance, the Contractor has not corrected all the deficiencies, the Owner shall retain sufficient money to cover the cost of completing said deficiencies, as determined by the Consultant, in addition to holding monies retained in accordance with the provisions of this Contract and subject to the provisions of the Mechanics' Lien legislation of P.E.I.

8. GC 5.10 - FINAL PAYMENT

Page 19, delete clause 5.10.1 in its entirety and replace with the following:

5.10.1 When the Contractor considers that the Work is completed, the Contractor shall submit an application for final payment. The Contractor's application for final payment is considered to be valid when:

- .1 Work has been completed in compliance with the Contract Documents and the Consultant is satisfied 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 Consultant.
- .4 Certificates required by utility companies, manufacturer's representative and inspectors have been submitted.
- .5 Spare parts, maintenance materials, warranties and bonds have been provided.

5.10.2 If Work is deemed incomplete by the Consultant, complete outstanding items and request re-inspection.

5.10.3 If, in the opinion of the Consultant, 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 Consultant.

Page 19, renumber existing clauses 5.10.2, 5.10.3 and 5.10.4 to 5.10.4, 5.10.5, and 5.10.6 respectively. In renumbered clause 5.10.6, change "5 working days" to read "20 calendar days".

9. GC 6.2 - CHANGE ORDER

Page 20, add new clause 6.2.4 as follows:

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- 6.2.4 If the method of adjustment of the Contract Price presented by the Contractor is a lump sum or a unit price quotation as indicated in 6.2.2.2, the mark-up on changes shall be as follow:
- .1 Work performed by Contractor's own forces: cost plus ten percent (10%) overhead plus ten percent (10%) fee.
 - .2 Work performed by Subcontractor's forces: cost plus ten percent (10%) overhead plus five percent (5%) fee.

10. GC 6.3 - CHANGE DIRECTIVE

Page 20, in clause 6.3.8, 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."

11. GC 6.5 - DELAYS

Page 21, 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."

12. GC 9.5 - CONSTRUCTION SAFETY

Page 27, after GC 9.5.1, add the following:

- 9.5.2 W.H.M.I.S. - Workplace Hazardous Materials Information Systems & Hazardous Products Act - Government of Canada

Regulations under the Hazardous Products Act and the regulation regarding the handling and storage of hazardous materials must be complied with (reference: Regulation 88-221). These regulations stipulate that employees must be trained in the proper handling of workplace hazardous material.

13. GC 10.1 - TAXES AND DUTIES

Page 28, after clause 10.1.2, add the following:

- 10.1.3 The Contractor shall indicate on each application for payment, as a separate amount, the appropriate Government Sales Tax that 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.

14. GC 10.2 - LAWS, NOTICES, PERMITS AND FEES

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Page 28, in paragraph 10.2.3, add new sentences to end of paragraph as follows:

"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."

15. GC 11.1 - INSURANCE

Insurance requirements shall meet CCDC 41 Insurance Requirements.

Page 29, GC 11, 11.1.1, add the following sentence:

"Such insurance shall have Province of Prince Edward Island, Town of Three Rivers, Montague Sewer and Water Corporation, and CBCL Limited as additional insureds and shall contain cross liability coverage and preclude subrogation by the insured against the Owner".

16. GC 11.2 - CONTRACT SECURITY

Page 30, delete GC 11.2.1 in its entirety and replace with the following:

11.2.1 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 Estimated Amount Due. Should it become apparent that the final cost of the project will exceed the Estimated Amount Due by more than 10%, the Contractor shall arrange to have his bonds reissued, based on the projected final cost.

Page 30, add new clause GC 11.2.2 as follows:

11.2.2 As an alternate to Performance and Labour and Material Payment Bonds, the contractor may provide security in the form of certified cheque in the amount of 10% of the tender price.

Page 31, add new clause GC 11.2.3 as follows:

11.2.3 The Contract Security will be retained until the expiration of the Period of Maintenance.

17. GC 12.3 - WARRANTY

Page 32, add new clause GC 12.3.7 as follows:

12.3.7 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.

18. GC 13.1 TIME FOR COMPLETION

13.1.1 The Works shall be completed by the date indicated in the Article A-1 of the Agreement Between Owner and Contractor. The Date for Completion shall be the time to complete the Work given in the Tender Form.

19. GC 14.1 LIQUIDATED DAMAGES

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

14.1.2 Should the Contractor fail to complete the works by the Date for Completion, the period of time from the Date for Completion to the Date of Substantial Performance of the Works as determined by the Consultant, shall be termed the Period of Delay.

14.1.3 In the event of there being 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 by reason of there being such period of delay for each and every day that the work or works shall remain unfinished after the time so specified. The said sum or sums in view of the difficulty of ascertaining the losses which the Owner may suffer by reason of delay in the performance of the said Works, is hereby agreed upon, fixed and determined by the parties hereto as liquidated damages that the Owner will suffer by reason of said delay and default and not as penalty. The Owner may deduct the amount of such liquidated damages from each progress payment following the event until the project reaches Substantial Performance as certified by the Consultant.

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- 1.1 DESCRIPTION OF WORK .1 The work to be done and list of contract drawings are set forth in 00 21 10 - Description of Work and List of Drawings.
- 1.2 FAMILIARIZATION WITH SITE .1 Before submitting a bid, it is recommended that bidders visit the site to review and verify the form, nature and extent of the work, materials needed, the means of access and the temporary facilities required to perform the Work.
- 1.3 CODES AND STANDARDS .1 Perform work in accordance with the latest edition of the National Building Code (NBC), National Fire Code (NFC), National Plumbing Code (NPC) and any other code of provincial or local application, including all amendments up to bid closing date, provided that in any case of conflict or discrepancy, the more stringent requirement shall apply.
- .2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.
- 1.4 INTERPRETATION OF DOCUMENTS .1 Supplementary to the Order of Precedence article of the General Conditions of the Contract, the Division 01 sections take precedence over the technical specification sections in other Divisions of the Specification Manual.
- 1.5 TERM ENGINEER OR OWNER'S REPRESENTATIVE .1 Unless specifically stated otherwise, the term Engineer or Owner's Representative where used in the Specifications and on the Drawings shall mean the Consultant as defined in the General Conditions of the Contract.
- 1.6 SETTING OUT WORK .1 The Contractor will set stakes to define location, alignment and elevations of work, and measurement of the work.
- .2 Supply such devices as straight edges and templates required to facilitate Owner's

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- Representatives inspection of work.
- .3 Supply stakes and other survey markers required for laying out work.
- 1.7 MEASUREMENT FOR PAYMENT .1 Notify Owner's Representative sufficiently in advance of operations to permit required measurements for payment.
- 1.8 MAINTENANCE OF WORK DURING CONSTRUCTION .1 Maintain work during construction. Undertake continuous and effective maintenance work day by day, with adequate equipment and forces so that the roadway or structures are continuously kept in a condition satisfactory to Owner's Representative.
- 1.9 CODES .1 Perform work in accordance with Code of Practice of the Department of Labour as it pertains to the Temporary Workplace Traffic Control Manual (Department of Transportation and Infrastructure and any other code of federal, provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .2 Materials and workmanship must conform to or exceed applicable standards of Canadian General Standards Board (CGSB), Canadian Standards Association (CSA), American Society for Testing and Materials (ASTM) and other standards organizations.
- .3 Conform to latest revision of any referenced standard as re-affirmed or revised to date of specification. Standards or codes not dated shall be deemed editions in force on date of tender advertisement.
- 1.10 DOCUMENTS REQUIRED .1 Maintain at job site, one copy each of following:
- .1 Contract drawings.
.2 Specifications.
.3 Addenda.
.4 Reviewed drawings.
.5 Change orders.

- .6 Other modifications to Contract.
- .7 Copy of approved work schedule.

- 1.11 SITE CONDITIONS .1 The Contractor will be responsible to visit the site and review existing site conditions.
- 1.12 CONSULTANT .1 Consultant can be contacted at:
- CBCL Limited
135 St. Peters Road, Suite 201
Charlottetown, PEI C1A 5P3
Telephone: (902)892-0303
Facsimile: (902)368-3444
- 1.13 WORK SCHEDULE .1 Provide to the Owner's Representative in writing and within 5 working days after Contract award, a detailed construction schedule and traffic control plan. The schedule shall show proposed work to be undertaken and anticipated completion dates for each category of work in the Unit Price Table.
- .2 After receiving the Contractor's plan and prior to start of construction, a pre-construction meeting involving Contractor and Owner's Representative will be held at a place and time to be determined by the Owner's Representative. This meeting will review implications of the contract, design, schedule of work, methods of construction, environment protection methods and traffic control.
- .3 Interim reviews of work progress based on work schedule will be conducted as decided by Owner's Representative and schedule updated by Contractor in conjunction with and to approval of Owner's Representative.
- .4 No work will begin until the pre-construction meeting is held.
- .5 Following the pre-construction meeting and approval of the schedule and traffic control plan, the work will be so scheduled to meet the time restraints and have the project

completed on time.

- 1.14 SANITARY SERVICES .1 The Contractor shall provide and maintain sanitary facilities for the use of workers at locations specified by the Owner's Representative. Provision of sanitary facilities shall meet requirements of provincial government and municipal statutes and authorities.
- 1.15 CONTRACTOR'S USE OF SITE .1 Use of site: for execution of work within roadway right of way and those areas specified by the Owner's Representative.
- 1.16 PROJECT MEETINGS .1 Consultant will arrange project meetings and assume responsibility for setting times and recording and distributing minutes.
- 1.17 EXISTING SERVICES .1 Carry out work at times directed by authorities having jurisdiction, with minimum of disturbance to pedestrian and vehicular traffic.
- .2 Before commencing work, establish location and extent of service lines in area of work and notify Owner's Representative of findings.
- .3 Submit schedule to and obtain approval from Owner's Representative for any shut down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .4 Where unknown services are encountered, immediately advise Owner's Representative and confirm findings in writing.
- .5 Record locations of maintained, re routed and abandoned service lines.
- .6 At least one lane of traffic shall be maintained at construction sites at all times.

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- .7 Ensure pedestrian and other traffic is not unduly impeded, interrupted, or endangered by execution or existence of work or plant.
- .8 Maintain existing signs at all times. When it is necessary to temporarily remove a sign, it shall be dismantled and re-established on a temporary post or stand set back from construction area. The work is considered to be incidental and no separate payment will be made for maintaining or moving signs.
- .9 Verify locations of any underground utilities.
- 1.18 ADDITIONAL DRAWINGS
- .1 Owner's Representative may furnish additional drawings for clarification. These additional drawings have same meaning and intent as if they were included with plans referred to in Contract documents.
- 1.19 RELICS, ANTIQUES AND WILDLIFE HABITAT
- .1 Protect relics, antiquities, wildlife habitat, items of historical or scientific interest such as cornerstones and contents, animal nesting sites, commemorative plaques, inscribed tablets, and similar objects found during course of work.
- .2 Give immediate notice to Owner's Representative and await Owner's Representative's written instructions before proceeding with work in this area.
- .3 Relics, antiquities and items of historical or scientific interest remain her Majesty's property.
- 1.20 MEASUREMENT OF QUANTITIES
- .1 Linear: Items which are measured by metre (m) or kilometre (km), such as pipes will be measured along centreline of installation unless otherwise shown on plans.
- .2 Area:
.1 Longitudinal and transverse measurements for areas to be measured horizontally in metres (m).

.2 Longitudinal and transverse measurements for such items as topsoil and hydroseeding to be made on actual flat or sloped surface seeded or sodded.

.3 Volume:

.1 In computing volumes of excavation, average end area method will be used unless otherwise directed by Owner's Representative in writing.

.2 Term: cubic metres or C.M.

.3 All volume measurements refer to in place measure unless specified elsewhere in specification.

.4 Mass:

.1 Term "tonne" shall mean 1000 kg.

.2 Materials which are specified for measurement by mass shall be weighed on scales approved by and at locations designated by Owner's Representative. Units used to haul material being paid for by mass shall bear legible identification numbers plainly visible to scale person as it approaches and leaves scale-house.

.5 Time:

.1 Unless otherwise provided for elsewhere or by written authority of Owner's Representative, hourly rental of equipment will be measured in actual working time and necessary travelling time of equipment within limits of project at an all-inclusive rate. Equip each unit of mobile equipment with an approved device to register hours of operation. Devices which only measure hours of running of motor will not be accepted. Cost for operator of equipment will be included in the hourly rate.

1.21 PERMITS/
AUTHORITIES

.1 The Contractor shall obtain, and pay for, permits from authorities as required for all operations and construction. The Contractor shall also comply with all pertinent regulations of all authorities having jurisdiction over the work. The Contractor shall provide copies of all permits to the Owner prior to starting the work. The Contractor shall be responsible for obtaining

all applicable permits, inspections and approvals required and shall pay all charges in connection therewith.

1.22 EQUIPMENT RENTAL RATES .1

Upon written request, the Contractor will supply the Owner's Representative with a list of the rental equipment to be used on work beyond the scope of bid items. Equipment rental rates will be in accordance with current rates published by the PEI Department of Transportation, Infrastructure and Energy.

PART 1 - GENERAL

1.1 Pay Items

- .1 Sidewalk Construction:
- .1 Unit of Measurement: LINEAL METER (m), NUMBER (No.).
 - .2 Method of Measurement: The measurement will be the length of sidewalk constructed measured along the centerline of the finished surface and the number of tactile warning devices installed.
 - .3 This item includes: locating and accommodating all existing infrastructure, for all costs to liaise with all utilities (Maritime Electric, Bell Aliant, Eastlink, Montague Sewer & Water Corporation) to locate the existing system(s), protect, and accommodate them during construction and maintain service to customers. Excavation of all materials including topsoil, gravels, and existing fill, to the depth(s) and location(s) shown on the drawings. The price shall include cutting, filling, placing, compacting and grading, proof rolling, geotechnical testing of base materials, shaping/grading, supply and placement of: select borrow, Class A gravel, and fine grading to achieve the cross slopes specified. The price shall also include reinforced concrete, shoulder material, ditch and swale construction, concrete testing and reporting, equipment, tools, labour, surveying and incidentals necessary to complete the work. The price includes all labour, equipment, materials, and payment of all fees required to complete the work.
- .2 Concrete Curb & Gutter:
- .1 Unit of Measurement: LINEAR METRE (m).
 - .2 Method of Measurement: Length of curb & gutter installed measured horizontally along the gutter line of the curb.
 - .3 This item includes: all costs involved to layout, supply and place concrete to form curbs including slip form curbing machine, fabrication of new molds as required, finishing, concrete testing, and backfilling as specified.

- .3 Storm Sewer:
 - .1 Unit of Measurement: LINEAL METER (m).
 - .2 Method of Measurement: The measurement will be the horizontal length of completed pipeline in place measured along centreline of pipe through structures.
 - .3 This item includes: connecting to existing infrastructure, including repair of any existing infrastructure, excavating, trucking, sheeting and shoring, trench box, pumping and draining, backfilling, compacting, maintenance of surface level, disposal of surplus and unsuitable material, lowering into the trench; bringing the pipe into alignment; jointing, supply and installation of bar screens, and all other work and materials necessary for a complete installation. The price also includes the removal and off-site disposal of all abandoned storm infrastructure, and any other items deemed necessary to complete the work. The price includes all labour, equipment, materials, and payment of all fees required to complete the work.

- .4 Precast Structures:
 - .1 Unit of Measurement: EACH (No.).
 - .2 This item includes: excavating, trucking, sheeting and shoring, trench box, pumping and draining, backfilling, compaction, maintenance of surface level, disposal of surplus and unsuitable material, fittings, catch basins including precast concrete, grade rings, watertight seals, gaskets, frames and covers, unshrinkable fill, and grouting, supplying and placing of bedding material, lowering into the trench; bringing the pipe into alignment; jointing, and all other work and materials necessary for a complete installation.

- .5 Environmental Protection:
 - .1 Unit of Measurement: EACH (No.) and LINEAR METRE (m).
 - .2 This item includes: construct and maintain sediment control barriers, check dams and silt fence in locations determined by the contractor and as agreed to or

directed by the consultant. The costs shall also include for the mulching of all disturbed areas, removal and disposal of silt build up from environmental controls and their removal when grass has been re-established.

- .6 Reinstatement:
 - .1 Unit of Measurement: SQUARE METRE (M²).
 - .2 Method of Measurement: the in-place area of finished surface.
 - .3 This item includes: select borrow, granular base course material, preparing edges of existing pavement/curbing, overlapping of asphalt joints including milling, place, spread and roll asphalt to the compacted thickness indicated on the Drawings. The price shall also include reinstatement of all grass, granular, asphalt and any other disturbed areas to a condition equal to or better than that which existed before construction.

- .7 Remove and Replace Unsuitable Material (Provisional):
 - .1 Unit of Measurement: CUBIC METRE (C.M.).
 - .2 Method of Measurement: Average end area method of volume of unsuitable material and the exposure of suitable material as confirmed by a topographic survey.
 - .3 This item includes: excavation and off-site disposal of unsuitable material and supply and placement of select borrow material as directed by the Engineer. No payment unless approved by the Engineer prior to excavation.

PART 2 - PRODUCTS

2.1 PRODUCTS .1 Not Applicable

PART 3 - EXECUTION

3.1 EXECUTION .1 Not Applicable

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- 1.1 RELATED SECTIONS .1 Section 01 78 00 - Closeout Submittals.
- 1.2 SUBMITTAL .1 Submit to Owner's Representative for review requested submittals specified in various sections of the specifications, including shop drawings, samples, permits, compliance certificates, test reports, work management plans and other data required as part of the work.
- .2 Submit with reasonable promptness and in orderly sequence so as to allow for Owner's Representative's review and not cause delay in Work. Failure to submit in ample time will not be considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .3 Do not proceed with work until relevant submissions have been reviewed.
- .4 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .5 Where items or information is not produced in SI Metric units, provide soft converted values.
- .6 Review submittals prior to submission. Ensure that necessary requirements have been determined and verified and that each submittal has been checked and coordinated with requirements of Work and Contract Documents.
.1 Submittals not stamped, signed, dated and identified as to specific project will be returned unexamined by Owner's Representative and considered rejected.
- .7 Verify field measurements and affected adjacent Work are coordinated.
- .8 Notify Owner's Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

- .9 Contractor's responsibility for errors, omissions or deviations in submission from requirements of Contract Documents is not relieved by Owner's Representative's review.
 - .10 Submittal format: paper originals, or alternatively clear and fully legible photocopies of originals. Facsimiles are not acceptable, except in special circumstances pre-approved by Owner's Representative. Poorly printed non-legible photocopies or facsimiles will not be accepted and will be returned for resubmission.
 - .11 Make changes or revision to submissions which Owner's Representative may require, consistent with Contract Documents and resubmit as directed by Owner's Representative. When resubmitting, identify in writing of any revisions other than those requested.
 - .12 Keep one reviewed copy of each submittal document on site for duration of Work.
- 1.3 SHOP DRAWINGS AND PRODUCT DATA
- .1 The term "shop drawings" means fabrication drawings, erection drawings, diagrams, illustrations, schedules, performance charts, technical product data, brochures, specifications, test reports installation instructions and other data which are to be provided by Contractor to illustrate compliance with specified materials and details of a portion of work.

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- 1.1 SUBMITTALS .1 Submit to Owner's Representative copies of the following documents, including updates:
- .1 Site Specific Health and Safety Plan.
 - .2 Name and qualifications of person to be retained full time as H&S Co-Ordinator.
- 1.2 COMPLIANCE REQUIREMENTS .1 Comply with the Occupational Health and Safety Act for the Province of Prince Edward Island, and the Occupational Health and Safety Act Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code Part II, and the Canada Occupational Safety and Health Regulations made under Part II of the Canada Labour Code.
- .3 Observe and enforce construction safety measures required by:
- .1 National Building Code of Canada;
 - .2 Provincial Worker's Compensation Board;
 - .3 Municipal statutes and ordinances.
- .4 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Owner's Representative will advise on the course of action to be followed.
- .5 Maintain Workers Compensation Coverage for duration of Contract. Submit Letter of Good Standing to Owner's Representative upon request.
- 1.3 RESPONSIBILITY .1 Be responsible for health and safety of persons on site, of property and for protection of persons and public circulating adjacent to work operations to extent that they may be affected by conduct of the Work.
- .2 Enforce compliance by all workers, sub-contractors and other persons granted access to work site with safety requirements of Contract Documents, applicable Federal,

Provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.4 SITE CONTROL AND ACCESS

- .1 Control work site and entry points to construction areas.
 - .1 Delineate and isolate construction areas from other areas of site by use of appropriate means.
 - .2 Post notices and signage at entry points and at other strategic locations identifying entrance onto site to be restricted to authorized persons only.
 - .3 Signage must be professionally made, bilingual in both official languages or display internationally understood graphic symbols.
- .2 Approve and grant access to site only to workers and authorized persons.
 - .1 Immediately stop non-authorized persons from circulating in construction areas and remove from site.
 - .2 Provide site safety orientation to all persons before granting access. Advise of site conditions, hazards and mandatory safety rules to be observed on site.
- .3 Secure site at nighttime to extent required to protect against unauthorized entry.
- .4 Ensure persons granted access to site wear appropriate personal protective equipment (PPE) suitable to work and site conditions.
 - .1 Provide such PPE to authorized persons who require access to perform inspections or other approved purposes.

1.5 PROTECTION

- .1 Carry out work placing emphasis on health and safety of the Public, Facility personnel, construction workers and protection of the environment.
- .2 Erect safety barricades, lights and signage on site to effectively delineate work areas, protect pedestrian and vehicular traffic around and adjacent to work and to create a safe working environment.

-
- .3 Should unforeseen or peculiar safety related hazard or condition become evident during performance of work, immediately take measures to rectify the situation and prevent damage or harm. Advise Owner's Representative verbally and in writing.
-
- 1.6 FILING OF NOTICE .1 File Notice of Project and other Notices with Provincial authorities prior to commencement of Work.
-
- 1.7 PERMITS .1 Post on site permits, licenses, compliance certificates specified in section 01 10 10.
- .2 Where particular permit or compliance certificate cannot be obtained at the required stage of work, notify Owner's Representative in writing and obtain his/her approval to proceed before carrying out that portion of work.
-
- 1.8 HAZARD ASSESSMENTS .1 Conduct site specific health and safety hazard assessment before commencing project and during course of the work. Identify risks and hazards resulting from site conditions, weather conditions and work operations.
- .1 Also, conduct assessment when the scope of work has been changed by Change Order and when potential hazard or weakness in current health and safety practices are identified by Owner's Representative or by an authorized safety Representative.
- .2 Record results in writing and address in Health and Safety Plan.
- .3 Keep copy of all assessments on site.
-
- 1.9 PROJECT/SITE CONDITION .1 The following are known or potential project related health, environmental and safety hazards at site which must be properly managed if encountered during course of work:
- .1 Existing hazardous products are:
 - .1 Petroleum products and fuels for equipment.

- .2 Above list shall not be construed as being complete and inclusive of potential health, and safety hazards encountered during work. Include above items into hazard assessment process.

1.10 HEALTH AND
SAFETY MEETINGS

- .1 Conduct a pre-construction health and safety meeting. Have following persons in attendance:
 - .1 Site Superintendent.
 - .2 Health & Safety Site Coordinator.
 - .3 Owner's Representative.

1.11 SAFETY
SUPERVISION AND
INSPECTIONS

- .1 Designate one person to be present on site at all times, responsible for supervising health and safety of the Work.
 - .1 Person to be competent in Occupational Health and Construction Safety as defined in the Provincial Occupational Health and Safety Act.
- .2 Assign responsibility, obligation and authority to such designated person to stop work as deemed necessary for reasons of health and safety.
- .3 Conduct regularly scheduled informal safety inspections of work site on a minimum bi-weekly basis.
 - .1 Note deficiencies and remedial action taken in a log book or diary.
- .4 Keep inspection reports on site.

1.12 TRAINING

- .1 Ensure that all workers and other persons granted access to site are competently trained and knowledgeable on:
 - .1 Safe use of tools and equipment.
 - .2 How to wear and use personal protective equipment (PPE).
 - .3 Safe work practices and procedures to be followed in carrying out work.
 - .4 Site conditions and minimum safety rules to be observed on site, as given at site

orientation session.

1.13 MINIMUM SITE
SAFETY RULES

- .1 Notwithstanding the requirement to abide by federal and provincial health and safety regulations, the following safety rules shall be considered minimum requirements to be obeyed by all persons granted site access:
 - .1 Wear personnel protective equipment (PPE) appropriate to function and task on site; the minimum requirements being hard hat, safety footwear and eye protection.
 - .2 Immediately report unsafe activity or condition at site, near-miss accident, injury and damage.
 - .3 Maintain site in tidy condition.
 - .4 Obey warning signs and safety tags.
- .2 Brief workers on site safety rules.

1.14 ACCIDENT
REPORTING

- .1 Investigate and report the following incidents and accidents:
 - .1 Those as required by Provincial Occupational Safety and Health Act and Regulations.
 - .2 Injury requiring medical aid as defined in the Canadian Dictionary of Safety Terms-1987, published by the Canadian Society of Safety Engineers (C.S.S.E) as follows:
 - .1 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.
 - .2 Those which require notification to Workers Compensation Board or other regulatory agencies as stipulated by applicable law or regulations.
- .2 Send written report to Owner's Representative for all above cases.

1.15 TOOLS AND
EQUIPMENT SAFETY

- .1 Routinely check and maintain tools, equipment and machinery for safe operation.
- .2 Conduct checks as part of site safety inspections. When requested, submit proof that checks and maintenance have been carried

out.

- .3 Tag and immediately remove from site items found faulty or defective.

1.16 HAZARDOUS
PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).
- .2 Keep MSDS data sheets for all products delivered to site. Post on site. Submit copy to Owner's Representative upon receipt.

1.17 CONFINED SPACES

- .1 Carry out work in confined spaces in compliance with:
 - .1 Provincial Occupational Safety and Health Regulations and;
 - .2 Canada Occupational Safety and Health Regulations (COSH) made under the Canada Labour Code - Part II.
- .2 Conduct hazard assessment and address in Safety Plan before entering confined space.

1.18 POSTING OF
DOCUMENTS

- .1 Post on site safety documentation as stipulated by Authorities having jurisdiction and as specified herein. Place in a common visible location.

1.19 SITE RECORDS

- .1 Maintain on site a copy of all health and safety documentation and reports specified to be produced as part of the work and received from authorities having jurisdiction.
- .2 Upon request, make available to Owner's Representative and to other authorized safety representative for review. Provide copy when directed by Owner's Representative.

1.20 NON-COMPLIANCE
AND DISCIPLINARY
MEASURES

- .1 Immediately address and correct health and safety violations and non-compliance issues.

1.1 REFERENCES

- .1 WHMIS: Workplace Hazardous Materials Information System, Health Canada.
- .2 Transportation of Dangerous Goods Act. Transport Canada, updated 2008-02-21.
- .3 MBCA: Migratory Birds Convention Act, Environment Canada, 1994.
- .4 Canadian Coast Guard Regulations, Department of Fisheries and Oceans Canada.
- .5 Canadian Shipping Act, Transport Canada, 2001.
- .6 AWPA: American Wood Preserver Association

1.2 DEFINITIONS

- .1 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .2 Wetlands: land where the water table is at, near or above the surface or which is saturated for a long enough period to promote such features as wet-altered soils and water tolerant vegetation. Wetlands include organic wetlands or "peatlands," and mineral wetlands or mineral soil areas that are influenced by excess water but produce little or no peat
- .3 Watercourse: refers to the bed and shore of a river, stream, lake, creek, pond, marsh, estuary or salt-water body that contains water for at least part of each year.
- .4 Alien species: refers to a species or subspecies introduced outside its normal distribution whose establishment and spread threaten ecosystems, habitats, or species with economic or environmental harm.
- .5 Buffer zone: a vegetated land that protects watercourses from adjacent land uses. It refers to the land adjacent to watercourses,

such as streams, rivers, lakes, ponds, oceans, and wetlands, including the floodplain and the transitional lands between the watercourse and the drier upland areas.

1.3 TRANSPORTATION

- .1 Transport hazardous materials and hazardous waste in compliance with Federal Transportation of Dangerous Goods Act.
- .2 Do not overload trucks when hauling material. Secure contents against spillage.
- .3 Maintain trucks clean and free of mud, dirt and other foreign matter.
- .4 Avoid potential release of contents and of any foreign matter onto highways, roads and access routes used for the Work. Take extra care when hauling dredged material and other hazardous materials. Immediately clean any spillage and soils.

1.4 HAZARDOUS
MATERIAL HANDLING

- .1 Handle and store hazardous materials on site in accordance with WHMIS procedures and requirements.
- .2 Store all hazardous liquids in location and manner to prevent their spillage into the environment.
- .3 Maintain written inventory of all hazardous materials kept on site. List product name, quantity and storage date.
- .4 Keep MSDS data sheets on site for all items.

1.5 PETROLEUM, OIL
AND LUBRICANTS

- .1 Comply with Federal and Provincial laws, regulations, codes and guidelines for the storage of fuel and petroleum products on site.
- .2 No fuel or petroleum products shall be stored on site. Do not fuel or lubricate equipment within this 30 metre buffer zone. Obtain approval from Owner's Representative of acceptable location on site for fuel storage and equipment service.

- .3 Do not dump petroleum products or any other deleterious substances on ground or in the water.
- .4 Be diligent and take all necessary precautions to avoid spills and contaminate the soil and water (both surface and subsurface) when handling petroleum products on site and during fueling and servicing of vehicles and equipment.
- .5 Maintain on site appropriate emergency spill response equipment consisting of at least one 250-litre (55 gallon) overpack spill kit for containment and cleanup of spills.
- .6 Maintain vehicles and equipment in good working order to prevent leaks on site.
- .7 In the event of a petroleum spill, immediately notify the Owner's Representative and the PEI Department of Environment. Perform clean-up in accordance with all regulations and procedures stipulated by authority having jurisdiction.

1.6 DISPOSAL OF
WASTES

- .1 Do not bury rubbish, demolition debris and waste materials on site.
- .2 Dispose and recycle demolition debris and waste materials.
- .3 Do not dispose of hazardous waste, volatile materials (such as mineral spirits, paints, thinners etc.) and petroleum products into waterways, storm or sanitary sewers or in waste landfill sites.
- .4 Dispose of hazardous waste in accordance with applicable federal and provincial laws, regulations, codes and guidelines.
- .5 Any construction, contaminated soil or demolition debris will be disposed of in a Provincially approved manner (Either a permit or receipts for tippage must be submitted to the Owner's representative to verify that the material was disposed of in a provincially

approved manner).

1.7 VEGETATION

- .1 Work should be scheduled to avoid periods of heavy precipitation. Short-term erosion and sediment control measures (i.e. silt fence, straw bales, temporary matting, geotextile filter fabric) must be installed to prevent runoff from entering any adjacent waterway. These structures will remain in place until natural vegetation has been established.
- .2 Fill material used in construction must be clean and non-toxic (free from fuel, oil, grease and/or contaminates).
- .3 Any exposed soil area must be minimized by limiting the area that is exposed at one time and by limiting the time that any one area is exposed. All stockpiled material must be covered and/or dyked to prevent erosion or silty runoff from leaving the site. Exposed soil should be replanted or sodded to ensure soil stabilization.
- .4 Avoid disturbance of vegetation and natural features where possible. All work is to be confined to the site limits delineated and/or directed by the Owner's Representative.
- .5 Restore disturbed areas as close as possible to natural conditions. Backfill excavate, grade and contour soil, replace topsoil, fertilize and reseed with approved seed mixture.
- .6 No staging of materials/equipment will take place on any environmentally sensitive area. All staging area sites, if required, will be determined by the Owner's Representative.
- .7 If materials of potential historical or cultural interest are encountered, work will cease at that location and the Owner's Representative will be notified.

1.8 SOCIOECONOMIC
RESTRICTIONS

- .1 Abide by municipal and provincial regulations for any restrictions on work performed during the night time and on flood lighting of the site. Obtain applicable permits.

- .2 Place flood lights in opposite direction of adjacent residential and business areas.
- .3 Equip equipment and machinery with purposely designed mufflers to reduce noise on site to lowest possible level. Maintain mufflers in good operating condition at all times.
- .4 Adequate signage and safety measures must be supplied during transportation of materials and equipment to the harbour.

1.9 WATER QUALITY

- .1 Maintenance of equipment must be carried out on a regular basis.
- .2 The construction material must be clean and non-toxic (free of fuel, oil, grease, and/or any contaminants).
- .3 Remove any accidental release of concrete on site prior to solidification.
- .4 Ensure concrete trucks are clean and will not release any material during transport to the site.
- .5 Do not discharge residual or rejected concrete on site. Do not wash and clean concrete vehicles on site. Carryout all dumping and cleaning operations at the concrete plant according to all provincially approved practices/regulations.
- .6 Follow any sediment and erosion control plan and an emergency response plan provided by the Owner's Representative.

1.10 BIRD AND BIRD
HABITAT

- .1 Abide by the Migratory Birds Convention Act (MBCA) in regards to the protection of migratory birds, their eggs, nests and their young encountered on site and in the vicinity.
- .2 Minimize disturbance to all birds on site and adjacent areas during the entire course of

the Work.

- .3 During night time work, position flood lights in opposite direction of nearby bird nesting habitat.
- .4 Do not use natural previously undisturbed areas of the site to conduct work.
- .5 Ensure that food scraps and garbage are not left at the work site.

1.11 AIR QUALITY

- .1 Keep airborne dust and dirt resulting from the work on site to an absolute minimum.
- .2 Apply dust control measures to roads, parking lots and work areas.
- .3 Spray surfaces with water or other environmentally approved product. Use purposely suited equipment or machinery and apply in sufficient quantity and frequency to provide effective result and continued dust control during the entire course of the work.
- .4 Do not use oil or any other petroleum products for dust control.
- .5 All construction equipment must be fitted with standard and well-maintained noise suppression devices. Construction activities must respect appropriate time restriction and use smaller, less disturbing equipment where possible.

1.12 FIRES

- .1 Fires and burning of rubbish on site is not permitted.

-
- 1.1 RELATED SECTIONS .1 Section 01 33 00 Submittal Procedures
- 1.2 INSPECTION .1 Give timely notice requesting inspection of Work designated for special tests, inspections or approvals by Owner's Representative or by inspection authorities having jurisdiction.
- .2 In accordance with the General Conditions, Owner's Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents.
- .3 If Contractor covers or permits to be covered Work designated for special tests, inspections or approvals before such is made, uncover Work until particular inspections or tests have been fully and satisfactorily completed and until such time as Owner's Representative gives permission to proceed.
- .4 Pay costs to uncover and make good work disturbed by inspections and tests.
- 1.3 TESTING .1 The Contractor shall retain a Geotechnical Engineer to carry out the required testing as outlined in the specification.
- .2 Tests on materials, as specified in various sections of the Specifications is the responsibility of the Contractor except where stipulated otherwise.
- .1 Provide all necessary instruments, equipment and qualified personnel to perform tests.
- .3 At completion of tests, turn over 2 sets of fully documented tests reports to the Owner's Representative. Submit in accordance with Section 01 33 00.
- .1 Obtain additional copies for inclusion of a complete set in each of the maintenance manuals specified in Section 01 78 00.
- .4 Unspecified tests may also be made by Owner's Representative, at the discretion of the Owner's Representative. The costs of these

tests will be paid for by the Owner's Representative.

- .5 Where tests or inspections reveal work not in accordance with contract requirements, Contractor shall pay costs for additional tests and inspections incurred by Owner's Representative as required to verify acceptability of corrected work.

1.4 INDEPENDENT
INSPECTION AGENCIES

- .1 When specified or directed, submit Representative samples of materials, in required quantities, to Testing Agency for testing purposes. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .2 Provide labour and facilities to obtain, handle and deliver samples.
- .3 Provide sufficient space on site for Testing Agency's exclusive use to store equipment and cure test samples.

1.5 ACCESS TO WORK

- .1 Facilitate Owner's Representative's access to Work. If part of Work is being fabricated at locations other than construction site, make preparations to allow access to such Work whenever it is in progress.
- .2 Furnish labour and facility to provide access to the work being inspected and tested.
- .3 Co-operate to facilitate such inspections and tests.

1.6 REJECTED WORK

- .1 Remove and replace defective Work, whether result of poor workmanship, use of defective or damaged products and whether incorporated in Work or not, which has been identified by Owner's Representative as failing to conform to Contract Documents.
- .2 Make good damages to new construction and finishes resulting from removal or replacement of defective work.

PART 1 - GENERAL

- 1.1 DESCRIPTION .1 This section is to provide traffic control pursuant to Section 6 of the Provincial Roads Act as stipulated in the PEI Temporary Workplace Traffic Control Manual (TWTCM).
- 1.2 RELATED WORK .1 General Instructions - Section 01 10 10
.2 Health and Safety Requirements - Section 01 35 28
- 1.3 REFERENCE STANDARD .1 Regulate traffic in accordance with the Roads Act (Prince Edward Island) as stipulated in the TWTCM distributed by the Prince Edward Island Department of Transportation and Infrastructure.
.2 The Owner's Representative reserves the right to direct the contractor to reduce either the number or length of traffic control work areas during peak traffic volumes or when cumulative delays exceed the specified maximum.
- 1.4 PROTECTION OF PUBLIC TRAFFIC .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out work or haul materials or equipment.
.2 When working on travelled way:
.1 Place equipment in position to present minimum of interference and hazard to travelling public.
.2 Keep equipment units as close together as working conditions will permit and preferably on same side of travelled way.
.3 Do not leave equipment on travelled way overnight.
.3 Do not close any lanes of roadway without approval of Owner's Representative. Before

rerouting traffic, erect suitable signs and devices in accordance with instructions contained in the TWTCM. Provide sufficient crushed gravel to ensure a smooth riding surface during work.

- .4 Keep travelled way well graded, free of pot holes and of sufficient width that required number of lanes of traffic may pass.
- .5 Limit construction to maintain at least one lane of traffic at all times.
- .6 When directed by Owner's Representative, provide well graded, detours or temporary roads to facilitate passage of traffic around restricted construction area. Provide and maintain signs and lights and maintain roadway.
- .7 Provide and maintain reasonable road access and egress to property fronting along or in vicinity of work under Contract unless approved otherwise by Owner's Representative.
- .8 Contractor must make provisions to transport cyclists and their bicycles thru activity work zones while pilot vehicle operations are in place.

1.5 INFORMATIONAL &
WARNING DEVICES

- .1 Provide and maintain signs and other devices required to indicate construction activities or other temporary and unusual conditions resulting from project work which may require road user response.
- .2 All traffic signs are to be bilingual or symbolic and shall be Level 1 reflectivity.
- .3 Supply and erect signs, declinators, barricades and miscellaneous warning devices as specified in TWTCM.
- .4 Place signs and other devices in locations recommended in the TWTCM.
- .5 The contractor shall provide an Accredited Sign Supervisor, who has successfully completed the Temporary Workplace Traffic

Control Training Course, to be on site at all times when active construction is taking place. The Accredited Traffic Control Sign Supervisor will be responsible to supervise the placement and dismantling of all temporary condition signs and devices that indicate to the road user that highway construction activity exist and also to ensure that proper traffic control procedures are carried out in accordance with the TWTCM. The Accredited Sign Supervisor is considered part of the contractors supervision and administration staff and compensation the provision this individual is considered incidental to the work.

- .6 A traffic control plan must be approved by the engineer prior to commencing any work.
- .7 Continually maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Removing or covering signs which do not apply to conditions existing from day to day.

1.6 CONTROL OF PUBLIC TRAFFIC

- .1 Provide traffic control personnel who have a valid provincial license and trained in accordance with and properly equipped as specified in the TWTCM, in following situations:
 - .1 When public traffic is required to pass working vehicles or equipment which may block all or part of travelled roadway.
 - .2 When it is necessary to institute one way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
 - .3 When workers or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.

- .5 For emergency protection when other traffic control devices are not readily available.
- .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
- .2 All Traffic Control Personnel shall be equipped with portable radios of sufficient range to ensure continuous communication within the traffic control zone.
- .3 All construction vehicles shall operate in accordance with and are subject to traffic control restrictions and operations in place on the project.
- 1.7 TRAFFIC MANAGEMENT PLAN REQUIREMENT
 - .1 Contractor to provide a detailed traffic management plan, prior to construction.
 - .2 Traffic control measures are summarized as follows:
 - .1 Single lane traffic will be maintained at all times and will be a contract obligation.
 - .2 Complete road closures will not be permitted, unless some exceptional circumstances arise.
 - .3 Radio communications and one-way traffic controls will be used.
 - .3 The required traffic measures will be included in the construction contract. A detailed construction sequencing and Traffic Management Plan will be required prior to construction. On-going information and communications will be maintained throughout the construction period.

PART 1 - GENERAL

- 1.1 SECTION INCLUDES .1 Administrative procedures preceding inspection and acceptance of Work by Owner's Representative.
- 1.2 RELATED SECTIONS .1 Closeout Submittals: Section 01 78 00
- 1.3 INSPECTION AND DECLARATION .1 Contractor's Inspection: Coordinate and perform, in concert with subcontractors, an inspection and check of all Work. Identify and correct deficiencies, defects, repairs and perform outstanding items as required to complete work in conformance with Contract Documents.
.1 Notify Owner's Representative in writing when deficiencies from Contractor's inspection have been rectified and that Work is deemed to be complete and ready for Owner's Representative's inspection of the completed work.
.2 Owner's Representative's Inspection: Accompany Owner's Representative during all substantial and final inspections of the Work.
.1 Address defects, faults and outstanding items of work identified by such inspections.
.2 Advise Owner's Representative when all deficiencies identified have been rectified.
.3 Note that Owner's Representative will not issue a Certificate of Substantial Performance of the work until such time that Contractor performs following work and turns over the specified documents:
.1 Compliance certificates from applicable authorities;
.2 Reports resulting from designated tests;
.4 Correct all discrepancies before Owner's Representative will issue the Certificate of Completion.

PART 1 - GENERAL

1.1 RELATED
REQUIREMENTS

.1 Section 01 33 00 - Submittal Procedures.

1.2 ACTION AND
INFORMATIONAL
SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Two weeks prior to Substantial Performance of the Work, submit to the Consultant, five final copies of operating and maintenance manuals in English.

.3 Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.

.4 Provide evidence, if requested, for type, source and quality of products supplied.

1.3 FORMAT

.1 Organize data as instructional manual.

.2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.

.3 When multiple binders are used correlate data into related consistent groupings.
.1 Identify contents of each binder on spine.

.4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.

.5 Arrange content by systems, under Section numbers and sequence of Table of Contents.

.6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

- .7 Text: manufacturer's printed data, or typewritten data.
 - .8 Drawings: provide with reinforced punched binder tab.
 - .1 Bind in with text; fold larger drawings to size of text pages.
- 1.4 CONTENTS -
PROJECT RECORD
DOCUMENTS
-
- .1 Table of Contents for Each Volume: provide title of project;
 - .1 Date of submission; names.
 - .2 Addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.
 - .3 Schedule of products and systems, indexed to content of volume.
 - .2 For each product or system:
 - .1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
 - .3 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.
 - .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
 - .5 Typewritten Text: as required to supplement product data.
 - .1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- 1.5 EQUIPMENT AND
SYSTEMS
-
- .1 For each item of equipment and each system include description of unit or system, and component parts.
 - .1 Give function, normal operation characteristics and limiting conditions.
 - .2 Include performance curves, with

- engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
 - .3 Include installed colour coded wiring diagrams.
 - .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.
 - .1 Include regulation, control, stopping, shut-down, and emergency instructions.
 - .2 Include summer, winter, and any special operating instructions.
 - .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - .6 Provide servicing and lubrication schedule, and list of lubricants required.
 - .7 Include manufacturer's printed operation and maintenance instructions.
 - .8 Include sequence of operation by controls manufacturer.
 - .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - .10 Provide installed control diagrams by controls manufacturer.
 - .11 Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.
 - .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
 - .13 Provide list of original manufacturer's spare parts, current prices, and recommended

quantities to be maintained in storage.

1.6 DELIVERY,
STORAGE AND HANDLING

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense and for review by Consultant.

1.7 WARRANTIES AND
BONDS

- .1 Develop warranty management plan to contain information relevant to Warranties.
- .2 Submit warranty management plan, 30 days before planned pre-warranty conference, to Consultant approval.
- .3 Warranty management plan to include required actions and documents to assure that Departmental Representative DCC Representative Consultant receives warranties to which it is entitled.
- .4 Provide plan in narrative form and contain sufficient detail to make it suitable for use by future maintenance and repair personnel.
- .5 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:
 - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
 - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after

- completion of applicable item of work.
- .4 Verify that documents are in proper form, contain full information, and are notarized.
 - .5 Co-execute submittals when required.
 - .6 Retain warranties and bonds until time specified for submittal.
- .6 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.
- .7 Conduct joint 9 month warranty inspection, measured from time of acceptance, by Consultant.
- .8 Include information contained in warranty management plan as follows:
- .1 Roles and responsibilities of personnel associated with warranty process, including points of contact and telephone numbers within the organizations of Contractors, subcontractors, manufacturers or suppliers involved.
 - .2 Listing and status of delivery of Certificates of Warranty for extended warranty items, to include pumps, motors, transformers, and commissioned systems.
 - .3 Provide list for each warranted equipment, item, feature of construction or system indicating:
 - .1 Name of item.
 - .2 Model and serial numbers.
 - .3 Location where installed.
 - .4 Name and phone numbers of manufacturers or suppliers.
 - .5 Names, addresses and telephone numbers of sources of spare parts.
 - .6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.
 - .7 Cross-reference to warranty certificates as applicable.
 - .8 Starting point and duration of warranty period.
 - .9 Summary of maintenance procedures required to continue warranty in force.

- .10 Cross-Reference to specific pertinent Operation and Maintenance manuals.
- .11 Organization, names and phone numbers of persons to call for warranty service.
- .12 Typical response time and repair time expected for various warranted equipment.
- .4 Contractor's plans for attendance at 9 month post-construction warranty inspections.
- .5 Procedure and status of tagging of equipment covered by extended warranties.
- .6 Post copies of instructions near selected pieces of equipment where operation is critical for warranty and/or safety reasons.
- .9 Respond in timely manner to oral or written notification of required construction warranty repair work.
- .10 Written verification to follow oral instructions.
 - .1 Failure to respond will be cause for the Departmental Representative DCC Representative Consultant to proceed with action against Contractor.
- .1 Tag, at time of installation, each warranted item. Provide durable, oil and water resistant tag approved by Consultant.
- .2 Attach tags with copper wire and spray with waterproof silicone coating.
- .3 Leave date of acceptance until project is accepted for occupancy.
- .4 Indicate following information on tag:
 - .1 Type of product/material.
 - .2 Model number.
 - .3 Serial number.
 - .4 Contract number.
 - .5 Warranty period.
 - .6 Inspector's signature.
 - .7 Construction Contractor.

1.8 WARRANTY TAGS

Town of Three Rivers
Queens Road Sidewalk
Upgrades
Contract No. 242652.00

CLOSEOUT SUBMITTALS

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PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

- 1.1 WORK INCLUDED .1 This section specifies the requirements for furnishing all materials, labour, tools and equipment and performing all operations necessary to complete the removals, relocations and modifications. The work generally includes, but is not limited to removal of:
- .1 Concrete sidewalks, asphalt and concrete curbs, trees, and other existing items/materials required to complete the work as described on the drawings and as specified.
 - .2 Gravel and asphalt as indicated on the drawings and as required to complete the work.
 - .3 Concrete slabs and foundations as indicated on the drawings and as required to complete the work.
 - .4 Grass, topsoil, and other materials as indicated on the drawings and as required to complete the work.
 - .5 The existing businesses will remain in operation throughout construction. Design and implement plan to prevent construction from negatively impacting business operation. Coordinate with the Consultant/Owner as required.
- 1.2 RELATED WORK .1 Earthwork: Division 31
- .2 Exterior Improvements: Division 32
- 1.3 REFERENCES .1 Canadian Standards Association (CSA).
- .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
 - .2 National Building Code of Canada-2015, Division B, Part 8.
- 1.4 EXISTING CONDITIONS .1 Items to be demolished or removed are to be based on their existing conditions.

1.5 PROTECTION

- .1 Prevent movement, settlement or damage of adjacent structures and services. Provide bracing and shoring as required. Repair damage caused by demolition as directed by Consultant.
- .2 Support affected structures and, if safety of structure being demolished or adjacent structures or services appears to be endangered, cease operations and notify Consultant.
- .3 Protect existing items designated to remain and items designated for salvage. In event of damage to such items, immediately replace or make repairs to approval of the Consultant and at no cost to Owner.
- .4 Keep noise, dust and inconvenience to occupants and neighbours to a minimum.
- .5 Provide temporary dust screens, covers and other protection as required. Refer to Division 01.
- .6 Prevent debris from blocking surface drainage, process, mechanical and electrical systems which must remain in operation.
- .7 Do not allow demolition work to adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution. If demolition affects above areas in the opinion of the Consultant the Contractor is to remediate affected areas at no cost to the Contract.
- .8 Fires and burning of waste or materials is not permitted on site.
- .9 Do not bury waste or materials on site.
- .10 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures during demolition work.
- .11 Cover or wet down dry materials and waste to prevent blowing dust and debris.
- .12 Protect trees, plants and foliage on site and adjacent properties.

1.6 REGULATORY
REQUIREMENTS

- .1 Perform demolition work in compliance with applicable Federal, Provincial and Municipal Regulations.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not applicable.

PART 3 - EXECUTION

- 3.1 PREPARATION
- .1 Inspect site with Consultant and verify extent and location of items designated for removal, disposal, recycling, salvage, relocation and items to remain.
 - .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
 - .3 Maintain wiring to existing equipment designated to remain.
 - .4 Disconnect and remove all existing services which are designated to be removed. Disconnect and remove all redundant wiring back to source.
 - .5 Where partitions or support structures are to be removed, disconnect equipment and electrical services to items on the partition and make wiring safe. Where pipe work, conduit or wiring passes through partitions to be removed, maintain the service to all devices to remain by extending piping and wiring or re-routing as necessary. Relocate equipment and electrical devices found where partitions or support structures are to be removed and the components are designated to remain.
 - .6 Test existing equipment, electrical devices and wiring, which are to be reused for proper operation and advise Consultant of any device malfunction. Repair or replace any device which is damaged in the process of reinstallation at no additional cost to the Contract.
 - .7 Remove any existing equipment from wells prior to decommissioning the well. Fill the well with alternating layers of sand and bentonite or cement to the ground surface. The thickness of bentonite or cement layers shall not be less than 300mm and the sand layers shall not be more than 3000mm. Cut and remove the well casing to 900mm below finish grade.
-

3.1 PREPARATION
(cont'd)

- .8 Decommission on site wastewater disposal system by disconnecting and plugging the septic tank inlet and outlet pipelines outside the tank wall. Reconnect the buildings existing sewer line to the newly constructed sewer service lateral.
- .9 Have a licensed septic hauler pump the septic tank removing all wastewater, sludge and scum. Remove the septic tank and dispose off site or disinfect the bottom and walls of the tank with 4 litres of chlorine bleach, remove the tank top cover and backfill and compact the tanks with select borrow to match existing grade.
- .10 Notify and obtain approval of system owners before starting removals.
- .11 Include any and all charges associated with coordinating the work my Maritime Electric Company Ltd. or any utility affected by the Work in the Contract Price.

3.2 SAFETY CODE

- .1 Observe construction safety measures of Provincial Government, including but not limited to the Occupational Health and Safety Act, provided that in any case of conflict or discrepancy the more stringent requirement will apply.
- .2 Store volatile waste in closed containers and remove from premises daily.
- .3 WHMIS:
 - .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada and Health Canada.
- .4 Exercise pollution and environmental control measures as specified and as required during the Work.
- .5 At the end of each day's work, leave work in safe and stable condition.

-
- 3.3 REMOVAL FROM SITE
- .1 Stockpiling of demolition debris is permitted on a temporary basis as approved by the Consultant.
 - .2 Removal of temporary stockpiled material will be required, if it is deemed by the consultant, to interfere with operations of Owner.
 - .3 Complete demolition in a manner to minimize dust. Keep materials wetted as directed by the Consultant.
- 3.4 SITEWORK ITEMS
- .1 Remove items as indicated. Do not disturb items designated to remain in place.
- 3.5 PROCESS/MECHANICAL ITEMS
- .1 Where applicable, equipment which is to be salvaged and turned over to the Owner is identified on the Drawing.
- 3.6 SALVAGE AND DISPOSAL OF MATERIALS
- .1 Items not designated for reuse or relocation shall be disposed off site at authorized facilities. Confirm with the Owner prior to disposal, in case the Owner wishes to retain said items.
 - .2 Salvage of the asphalt and granular materials becomes the property of the contractor.
 - .3 Pay all costs and fees associated with the removal from site and disposal.
- 3.7 RESTORATION
- .1 Restore areas and existing works outside areas of demolition to match condition of adjacent, undisturbed areas.

PART 1 - GENERAL

- 1.1 WORK INCLUDED .1 This section includes providing all labour, tools, materials, and equipment to perform all cast-in-place concrete work.
- 1.2 RELATED WORK .1 Excavating Trenching and Backfilling: Section 31 23 10
- .2 Sidewalks and Curbs: Section 32 16 15
- .3 Pavement Markings: Section 32 17 26
- .4 Reinstatement: Section 32 98 00
- 1.3 REFERENCES .1 ASTM C260/C260m-10a(2016), Standard Specification for Air-Entraining Admixtures for Concrete.
- .2 ASTM C494/C494M-17, Specification for Chemical Admixtures for Concrete.
- .3 ASTM C309-19, Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
- .4 ASTM C827/C827M-16, Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures.
- .5 ASTM C939/C939M-16a, Standard Test Method for Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method).
- .6 ASTM D1751-18, Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
- .7 CSA-A23.1:19/A23.2:19, Concrete Materials and Methods of Concrete Construction/Test methods and Standard Practices for Concrete.
- .8 CSA-A3000-18, Cementitious Materials

Compendium.

- .9 DIN 1048-5, Testing of Concrete: Testing of Hardened Concrete (Specimens Prepared in Mould).
- .10 CRD C49-92, Standard Test Method For Water Permeability of Concrete.
- .11 ASTM C1585-2013, Standard Test Method for Measurement of Rate of Absorption of Water by Hydraulic Cement Concretes.
- .12 ASTM C39/C39M-18, Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
- .13 ASTM C1202-19, Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration.
- .14 ASTM C157/C157M-17, Standard Test Method for Length Change of Hardened Hydraulic Cement Mortar and Concrete.

1.4 SAMPLES

- .1 At least four (4) weeks prior to commencing work, inform the Consultant of proposed source of aggregates and provide access for sampling.

1.5 CERTIFICATES

- .1 Minimum four (4) weeks prior to starting concrete work submit to the Consultant manufacturer's test data and certification by qualified independent inspection and testing laboratory that the following materials will meet specified requirements:
 - .1 Portland cement.
 - .2 Supplementary cementing materials.
 - .3 Grout.
 - .4 Admixtures.
 - .5 Aggregates.
 - .6 Water.
 - .7 Waterstops.
 - .8 Waterstop joints.
- .2 Provide certification that mix proportions selected will produce concrete of specified quality and yield and that strength will

comply with CSA-A23.1 and that mix design is adjusted to prevent alkali aggregate reactivity problems.

- .3 Provide certification that plant, equipment and materials to be used in concrete comply with requirements of CAN/CSA A23.1.

1.6 WASTE MANAGEMENT
AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with applicable local, provincial and national regulations.
- .2 Use trigger operated spray nozzles for water hoses.
- .3 Designate a cleaning area for tools to limit water use and runoff.
- .4 Carefully coordinate the specified concrete work with weather conditions.
- .5 Seal emptied containers and store safely for disposal away from children.
- .6 Prevent plasticizers, water-reducing agents and air-entraining agents from entering drinking water supplies or streams. Using appropriate safety precautions, collect liquid or solidify liquid with an inert, noncombustible material and remove for disposal. Dispose of all waste in accordance with applicable local, provincial and national regulations.
- .7 Choose least harmful, appropriate cleaning method which will perform adequately.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Portland cement: to CSA A3000.
- .2 Supplementary cementing materials: to CSA A3000.
- .3 Water: to CAN/CSA-A23.1.

- .4 Aggregates: to CAN/CSA-A23.1. Coarse aggregates to be normal density.
- .5 Air entraining admixture: to ASTM C260.
- .6 Chemical admixtures: to ASTM C494. Consultant to approve accelerating or set retarding admixtures during cold and hot weather placing. All admixtures to be approved for use in potable water containing structures.
- .7 Shrinkage compensating grout: premixed compound consisting of non-metallic aggregate, Portland cement, water reducing and plasticizing agents.
 - .1 Compressive strength: 50 MPa at 28 days.
 - .2 Consistency:
 - .1 Fluid: to ASTM C827. Time of efflux through flow cone (ASTM C939), under 30 s.
 - .2 Flowable: to ASTM C827. Flow table, 5 drops in 3 s, (ASTM C109, applicable portion) 125 to 145%.
 - .3 Plastic: to ASTM C827. Flow table, 5 drops in 3 s, (ASTM C109, applicable portions) 100 to 125%.
 - .4 Dry pack to manufacturer's requirements.
- .8 Curing compound: to CAN/CSA-A23.1 and to ASTM C309, Type 1-D with fugitive dye for hidden or exterior use, and Type 1 for exposed concrete. Curing compounds to be approved for use in potable water containing structures.
- .9 Unshrinkable fill: very weak mixture of Portland cement, concrete aggregates and water that resists settlement when placed in utility trenches, and capable of being readily excavated.

2.2 CONCRETE MIXES

- .1 Mix 1: Proportion normal density concrete in accordance with CSA-A23.1, Alternative 1 to give following properties for curbs and walkways.
 - .1 Cement: Type GU.
 - .2 Minimum compressive strength at 28 days: 32 MPa.

- .3 Class of exposure: C-2
- .4 Nominal size of coarse aggregate: 20mm
- .5 Slump at time and point of discharge:
80±30mm
- .6 Air content: 5-8%
- .7 Chemical Admixtures: type as approved
and in accordance with ASTM C494.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Confirm the founding material on which footings and other concrete work are to be placed are free from water. Place concrete only on frost-free ground. Remove previously frozen bearing surfaces.
- .2 Confirm foundations, including mud slabs, bear on bedrock, undisturbed till or structural fill. All structural fill to be placed as directed and under the continuous supervision of the Consultant.
- .3 Foundation bearing surfaces will be subject to inspection and approval by a geotechnical engineer prior to placing concrete. If bearing surfaces are deemed unacceptable because conditions do not meet those anticipated during design, make adjustments as directed.
- .4 Confirm the fill has been placed to meet specified requirements, and that underslab services have been installed, inspected, tested and approved.

3.2 WORKMANSHIP

- .1 Obtain Consultant's approval before placing concrete. Provide 48 hours notice prior to placing of concrete.
- .2 Pumping of concrete is permitted only after approval of equipment and mix.
- .3 Ensure reinforcement and inserts are not disturbed during concrete placement.

- .4 Prior to placing of concrete obtain Consultant's approval of proposed method for protection of concrete during placing and curing in adverse weather.
- .5 Maintain accurate records of poured concrete items to indicate date, location of pour, quality, air temperature and test samples taken.
- .6 In locations where new concrete is dowelled to existing work, drill holes in existing concrete. Place dowels and epoxy grout according to epoxy manufacturer's specifications.
- .7 Do not place load upon new concrete until authorized by the Consultant.
- .8 Concrete protective cover to reinforcement is as indicated on the drawings.
- .9 Bars in suspended slabs and slabs-on-grade are to be accurately supported on plastic coated steel chairs to maintain exact cover requirements.
- .10 Confirm all concrete construction is moist cured using either an approved curing compound or burlap maintained in moist conditions. For walls of water retaining structures, leave forms in place for a minimum of three (3) days after placement of concrete. After three (3) days, forms can be stripped and concrete can be moist cured as described above.
- .11 In cold weather protect concrete Work to CAN/CSA-A23.1 and following:
 - .1 Cold weather is defined as a period when the mean air temperature drops below 5°C for more than three successive days.
 - .2 When air temperature is above 0°C and is forecast to remain so for 48 hours after placing, insulated tarps are acceptable protection provided concrete temperatures are monitored and comply with temperature limits specified in the following paragraph.
 - .3 For all other cold weather conditions protect concrete with a windproof enclosure

of canvas or other material to allow free circulation of inside air around fresh concrete. At no point let walls of enclosure touch formwork and provide sufficient space for removal of formwork and for finishing. Supply approved heating equipment capable of keeping inside air at sufficient curing temperatures:

- .1 For an initial three days, at a temperature of not less than 15°C.
 - .2 Maintain concrete at temperatures of not less than 10°C for a total period of seven days plus the initial three days specified above.
 - .3 At no time shall concrete temperatures exceed 30°C at surfaces.
 - .4 Reduce enclosure air temperature at a rate not exceeding 10°C per day until outside air temperature has been reached.
 - .5 Take temperature readings both of air and of concrete surfaces at several points within area protected at start and at end of working day. Maintain complete records of temperature readings.
 - .4 Protect concrete from damage during curing. When enclosure is provided, avoid rapid drying of the concrete.
- .12 In hot weather protect concrete Work to CAN/CSA-A23.1 and following:
- .1 When air temperature is at or above 25°C, do not use curing compounds and keep concrete surfaces moist continually during protection stage using burlap maintained in a moist condition.
 - .2 Regulate the generation of heat through hydration to control thermal gradients to prevent thermal cracking.

3.3 INSERTS

- .1 Do not pass sleeves, ducts, pipes or other openings through joists, beams, walls, slabs, column capitals or columns, except where indicated or approved by Consultant.
- .2 Where approved by the Consultant, set sleeves, ties, pipe hangers, miscellaneous

metals and other inserts and openings as indicated or specified elsewhere. Sleeves and openings greater than 100mm x 100mm not indicated, must be approved by the Consultant.

- .3 Maximum diameter of core-drilled holes is 200 mm. Proposed core-drilled penetrations must be approved by the Consultant and concrete shall be scanned to locate reinforcing prior to the placement of concrete.
- .4 Do not eliminate or displace reinforcement to accommodate hardware larger than 400 mm. For inserts/ hardware less than 400 mm, displace bars to accommodate. If inserts cannot be located as specified, obtain approval of modifications from Consultant before placing concrete.
- .5 Coordinate locations and sizes of sleeves and openings shown on structural and civil drawings with mechanical and electrical drawings.
- .6 Set special inserts for strength testing as indicated and as required by non-destructive method of testing concrete.
- .7 Larger size openings in walls and slabs have been shown on the structural drawings. Refer to process drawings for all remaining cast-in-place concrete penetrations. All pipe sleeves containing wall flanges will be cast-in-place at time of concrete pour.

3.4 PLACING CONCRETE

- .1 Place concrete as specified in CAN/CSA-A23.1.
- .2 Inform Consultant at least 24 hours before each concrete placing operation.
- .3 Do not place concrete when it is raining or likely to rain. If rain begins after concrete is placed, protect with waterproof covers until set.
- .4 Do not permit vertical free fall of concrete mix to exceed 1.5 metres.

- .5 For exposed concrete, and concrete tanks, take special precautions when placing to prevent segregation of concrete, and to avoid cold joints, honeycombing or voids. Do not allow vibrator to touch formwork.
- .6 Use form vibrators only when sections are too narrow for internal type. Employ a sufficient number of vibrators to ensure complete consolidation of concrete throughout entire volume of each layer. Have available at least one (1) extra vibrator on hand for emergency.
- .7 Do not use vibrators for interior and exterior concrete slabs on fill.
- .8 Use only tools and handling equipment that are clear of rust or other harmful and foreign material to avoid effervescence and staining of slabs or hardened concrete.
- .9 Use concrete pumps to place concrete only with approval of methods, equipment and mix design.
- .10 Provide continuous supervision during placement of concrete including concrete grout to ensure reinforcing steel is maintained in correct position.
- .11 Fill all bug holes with depth greater than 6 mm and/or diameter greater than 10 mm (surface air voids) in wall faces within the new building with non-shrink grout.
- .12 Allow minimum of 48 hours between pours of adjacent wall and foundation slab sections in water retaining structures.

3.5 PLACING GROUT

- .1 Grout where indicated using procedures in accordance with manufacturer's recommendations which result in 100% contact over grouted area.

3.6 SURFACE TOLERANCE

- .1 Concrete tolerance in accordance with CAN/CSA-A23.1, straight edge method.

3.7 FINISHING

- .1 Finish concrete in accordance with CAN/CSA-A23.1.
- .2 Use smooth form finish for all concrete surfaces. Use form facing material that will produce a smooth, hard, uniform texture on the concrete. Do not use material with raised grain, torn surfaces, worn edges, patches, dents or other defects that will impair the texture of the concrete surface. Patch the holes and defects. Patch smooth bug holes exceeding 10 mm in diameter and/or 6 mm in depth. Completely remove all fins in all water holding tankage and water holding conduits.
- .3 Remove tie cones and patch with latex modified concrete finish. Mix to be in strict accordance with manufacturers instructions.
- .4 Use rubbed finish for all interior concrete exposed to view. Remove fins exceeding 3 mm in height.
- .5 Provide steel trowel finish surfaces to floor in accordance with CAN/CSA-A23.1, Classification A.
 - .1 Floor finisher shall inspect grades, lines, inserts and floor drains prior to commencement of work.
 - .2 Correct floor flatness and waviness deficiencies by grinding.
 - .3 Coordinate floor finishing with epoxy floor coating applicator in areas to receive concrete treatments.
- .6 Rub exposed sharp edges of concrete with carborundum to produce 3 mm radius edges unless otherwise indicated.
- .7 Use curing compounds compatible with applied finish on concrete surfaces. Provide written declaration that compounds used are compatible.

3.8 WATERSTOPS

- .1 Install waterstops to provide continuous water seal. Do not distort or pierce waterstop in such a way as to hamper performance. Do not displace reinforcement when installing waterstops. Use equipment to manufacturer's requirements to field splice waterstops. Tie waterstops rigidly in place.
- .2 Use only straight heat sealed butt joints in field. Use factory or field welded corners and intersections unless otherwise approved by Consultant.
- .3 Provide waterstops as required to provide continuous seal and as indicated on the drawings and at all construction joints in water-retaining structures. Note: not all waterstops are indicated on the Drawings.
- .4 Install expansion joint waterstops in accordance with manufacturer's directions.

3.9 FIELD QUALITY CONTROL

- .1 Have inspection and testing of concrete and concrete materials carried out by a Testing Laboratory approved by Owner in accordance with CAN/CSA-A23.1. Pay for the cost of testing.
- .2 A set of four (4) test cylinders to be provided for each class of concrete placed each day (only 3 will typically be tested). Provide one (1) set of test cylinders per each 50 m³.
- .3 Consultant will require additional test cylinders during cold weather concreting. Cure cylinders on job site under same conditions as concrete which they represent.
- .4 Do non-destructive methods for testing concrete in accordance with CAN/CSA-A23.2.
- .5 Inspection or testing by Consultant will not augment or replace Contractor quality control nor relieve him of his contractual responsibility.

PART 1 - GENERAL

- 1.1 WORK INCLUDED .1 This Section specifies requirements for performing all operations necessary to complete ditch and swale construction, general site grading and providing borrow materials required to bring the site to finished elevations shown on Drawings.
- 1.2 RELATED WORK .1 Section 31 23 10 - Excavating, Trenching and Backfilling.
- .2 Section 31 24 13 - Roadway and Trail Construction.
- .3 Section 32 91 21 - Topsoil Placement and Grading.
- .4 Section 32 92 22 - Hydraulic Seeding.
- 1.3 PROTECTION .1 Prevent damage to existing fencing, trees, natural features, bench marks, existing pavement, and surface or underground utility lines which are to remain. Repair damage caused during construction, at no extra cost to the Contract.
- 1.4 SITE CONDITIONS .1 Known underground and surface utility lines and buried objects are indicated on the plans. Locations are to be considered as approximate. Verify in field prior to commencing excavation.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Common borrow is as per Section 31 23 10 Excavating, Trenching and Backfilling.
- .2 Select borrow as per section 31 23 10 Excavating, Trenching and Backfilling.

- .3 Hydroseeding: as per Section 32 92 22 - Hydraulic Seeding.
- .4 Topsoil: as per Section 32 91 21 - Topsoil Placement and Grading.

PART 3 - EXECUTION

3.1 EXCAVATING

- .1 The contractor will be responsible to excavate to the elevations shown on the drawings. All slopes are to match construction drawings and are to be confirmed by the contractor's surveyor.
- .2 Advise Engineer sufficiently in advance of excavation operations for initial cross-sections to be taken.
- .3 Maintain crowns and cross slopes to provide good surface drainage.
- .4 Notify Engineer whenever unsuitable materials are encountered and remove unsuitable materials to depth and extent directed.
- .5 Excavate in all kinds of material encountered on the site and make own computations of amount and nature of excavation required.
- .6 Perform all excavation within \pm 25 mm of the lines, grades and dimensions shown on the Drawings or as established by the Engineer. During the progress of the Work, the Engineer may vary the lines, grades and dimensions of the excavations from those specified in this Section.
- .7 Take necessary precautions to preserve the material below and beyond the lines of all excavation in the soundest possible condition.
- .8 Do not obstruct existing drainage ditches and natural watercourses unless indicated on the Drawings.
- .9 During construction direct surface runoff to sediment control facilities installed and maintained to the requirements of Section 01 35 43 - Environmental Protection.

3.2 EMBANKMENTS

- .1 Do not place material which is frozen or place material on frozen surfaces.
- .2 Maintain a crowned surface during construction to ensure ready run-off of surface water.
- .3 Place and compact selected excavated material to full width in uniform layers not exceeding 200 mm loose thickness. Engineer may authorize thicker lifts if specified compaction can be achieved.
- .4 The footprint below the embankment must first be cleared of vegetation (grubbed) and any loose, soft, or otherwise unsuitable foundation soil removed, exposing the surface of the in-situ material.
- .5 The downstream slopes of the new embankment are to be at 3H: 1V and the upstream slopes are 4H: 1V.
- .6 Embankment fill to be compacted to 98% of the Modified Proctor dry density as determined by ASTM Test Method D1557. The minimum density, the moisture content of the fill must be controlled within $\pm 1\%$ of the optimum moisture content that corresponds to the maximum dry density.

3.3 FINISHING

- .1 Remove soft or other unstable material that will not compact properly and fill resulting depressions with approved material.
- .2 Shape and compact entire subgrade to within 25 mm of design elevations but not uniformly high or low.
- .3 Do scarifying, blading, compacting or other methods of work as necessary to provide a thoroughly compacted site shaped to grades indicated or directed.
- .4 Finish side slopes to a neat condition, true to lines and grades indicated.
 - .1 Remove boulders encountered and fill resulting cavities.

.2 Hand finish slopes that cannot be finished satisfactorily by use of machine.

.5 Dispose of surplus approved embankment material not required for placement in fills and material unsuitable for grading or landscaping.

3.4 COMPACTION TESTING

.1 Contractor to arrange for and pay for independent compaction testing of all materials used in site grading and finishing.

.2 Compaction testing to be performed by an accredited soils testing company to the approval of the Engineer.

3.5 HYDRAULIC SEEDING

.1 Conduct hydraulic seeding in accordance with Section 32 92 22 - Hydraulic Seeding.

3.6 MAINTENANCE

.1 Maintain finished surfaces in a condition conforming to this section until final acceptance.

PART 1 - GENERAL

1.1 DESCRIPTION OF
WORK

- .1 This Section specifies requirements for furnishing all materials, labour, tools and equipment and performing all operations necessary to strip topsoil from areas designated, complete excavation of all types of material encountered, placing of excavated material as backfill in trenches and embankments, disposal of unsuitable material, disposal and /or spreading of suitable surplus material as directed, and furnishing backfill material as specified below, all as shown on the Drawings and as specified.
- .2 The work generally includes, but is not necessarily limited to, the following items:
 - .1 Trench excavation and backfilling for structures, pipelines, conduit and appurtenances.
 - .2 Structure excavation and backfilling for manholes and catch basins.
 - .3 Control of water by dewatering.
 - .4 Providing borrow material when required.
 - .5 Removal and disposal of unsuitable material.
 - .6 Disposal and/or spreading suitable surplus material as directed.
 - .7 Sheet piling, shoring, trench box and bracing to support trench walls, sides of excavations, existing structures or utilities.
 - .8 Stripping, stockpiling and replacing topsoil.

1.2 RELATED SECTIONS

- .1 Storm Sewer: Section 33 42 13
- .2 Roadway Construction: Section 31 24 13
- .3 Site Grading and Finishing: Section 31 22 13
- .4 Clearing and Grubbing: Section 31 11 00

1.3 REFERENCES

- .1 ASTM C117-90. Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
- .2 ASTM C136-84a. Method for Sieve Analysis of

Fine and Coarse Aggregates.

- .3 ASTM D698-91. Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (600 kN-m/m³).

1.4 DEFINITIONS

- .1 Excavation: excavation of materials of whatever nature including dense tills, hardpan, frozen materials, boulders, bedrock, debris and all other materials encountered on the site.
- .2 Selected Backfill: excavated on-site material suitable for grading work.

1.5 PROTECTION OF EXISTING FEATURES

- .1 Existing buried utilities and structures:
 - .1 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed. Carry out test digs as required to locate services, etc.

1.6 SHORING AND BRACING

- .1 Comply with Section 01 35 28 Health and Safety Requirements and applicable local regulations.
- .2 Provide shoring and bracing as required to prevent movement, failure or settlement, to safeguard and maintain integrity of structures, utilities, earth, benchmarks, services and adjacent grades.
- .3 Engage services of qualified Professional Engineer registered in the Province of Prince Edward Island to inspect and approve shoring equipment required for work.

1.7 SAMPLES

- .1 When requested submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 At least 2 weeks prior to commencing work, inform Consultant of proposed source of bedding, backfill or cover materials and provide access for sampling.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Common Borrow: where material additional to that obtained from excavation on site is required to complete trench backfilling the Contractor will provide this material from his own sources as an extra to the Contract. Material shall be as per DTI requirements Division 206.
- .2 Select Backfill Material: approved material from site excavation or borrow pits. Such material shall be free from stumps, trees, roots, sod, muck or other deleterious material, and shall not contain rock, boulders or masonry larger than 150 mm diameter. The material shall be free from frost, and shall not be placed on frozen ground or in water. It must have a moisture content that will allow compaction to the specified densities.
- .3 Gravel Bedding: shall be as per DTI requirements for Class A, Division 401.
- .4 Sand bedding material: hard, granular, sharp material, well graded from coarse to fine, free from impurities, chemicals or organic matter, chloride content to be less than 250 ppm and graded as follows:

<u>Sieve</u> <u>Square Opening</u>	<u>% Passing</u> <u>(by weight)</u>
4.75 mm	100
2.00 mm	90-96
0.85 mm	75-94
0.425 mm	45-82
0.250 mm	18-40
0.150 mm	10-17
0.075 mm	0-5

- .5 Select Borrow: shall be as per DTI requirements Division 206.
- .6 Geotextile fabric: non woven geotextile terrafix 270R or equivalent.

- .7 Rip-Rap: Class 1 as per PEI DTI Specification 213 for R-25 random Rip-Rap.
- .8 Clear stone: Hard durable clear stone 6 mm to 19 mm, crushed and screened, free from clay and organic matter.
- .9 Rigid Insulation: Rigid board insulation extruded polystyrene, type 3, Thickness 50mm.

PART 3 - EXECUTION

3.1 TEMPORARY EROSION
AND SEDIMENTATION
CONTROL

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways in accordance with PEI DTI and Department of Environment.
- .2 Inspect, repair and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.2 SITE PREPARATION

- .1 Remove obstructions from surfaces to be excavated within limits indicated.
- .2 Cut pavement or sidewalk neatly along limits of proposed excavation in order that surface may break evenly and cleanly.

3.3 STOCKPILING

- .1 Stockpile fill materials in areas designated by Owner's Representative. Stockpile granular materials in manner to prevent segregation.
- .2 Protect fill materials from contamination.

3.4 STRIPPING OF
TOPSOIL

- .1 Strip all surficial vegetation, rootmat and topsoil. Do not mix topsoil.

3.5 PREPARATION/
PROTECTION

- .1 Keep excavations clean, free of standing water and loose soil.
- .2 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
- .3 Protect buried services that are required to remain undisturbed.

3.6 SHORING AND
BRACING

- .1 Construct temporary works to depths, heights and locations as indicated or directed by the Professional Engineer responsible for the design of the shoring or bracing.
- .2 During backfill operation:
 - .1 Unless otherwise indicated or as directed by Owner's Representative, remove sheeting and shoring from excavations.
 - .2 Do not remove bracing until backfilling has reached that specified by the Professional Engineer responsible for the design of the shoring or bracing.
 - .3 Pull sheeting in increments that will ensure compacted backfill is maintained at an elevation at least 500 mm above toe of sheeting.
- .3 When sheeting is required to remain in place, cut off tops at elevations as directed by Consultant.
- .4 Upon completion of substructure construction:
 - .1 Remove shoring and bracing.
 - .2 Remove excess materials from site and restore conditions indicated or as directed by Consultant.

3.7 DEWATERING

- .1 Conduct dewatering operations in accordance with Section 01 35 44 - Environmental Protection.
- .2 Keep all excavations and trenches free of water at all times. Control excavations to

prevent surface water running into excavated areas.

- .3 Do all work in connection with dewatering and supply and maintain on the work site, pumps, in number and capacity sufficient to keep bottom of all excavations dry and free from water at all times so placing of pipe and concrete will be done in the dry. Operate all equipment for as long as necessary.
- .4 Dispose of water removed from excavations in a manner that will prevent injuries to public health or private property or to any operation of the work completed or under construction. Pumping of water containing silt or other material in suspension into streams or drainage courses is prohibited.
- .5 Ensure that all sub-drains, sump holes, wells or the like required for dewatering shall not endanger the stability of the Works. On completion of the work completely backfill and consolidate excavations.
- .6 Excavate, remove or thaw out frozen ground as necessary.

3.8 EXCAVATION

- .1 Carry out excavations and removals. Excavate to lines, grades, elevations and dimensions as indicated.
- .2 Remove rubble and other obstructions encountered during excavation.
- .3 For trench excavation, unless otherwise authorized by Consultant in writing, do not excavate more than 30 m of trench in advance of installation operations.
- .4 Dispose of surplus and unsuitable excavated material by spreading on site at an approved thickness and location in accordance with PEI Department of Environment regulations.
- .5 Do not obstruct flow of surface drainage.
- .6 Earth bottoms of excavations to be solid undisturbed soil, level, free from loose, soft or organic matter.

- .7 Notify Consultant when soil at bottom of excavation appears unsuitable and proceed as directed by Owner's Representative.
- .8 Obtain Consultant's approval of completed excavation.
- .9 Remove unsuitable material from trench bottom to extent and depth as directed by Consultant.
- .10 Where required due to unauthorized over excavation, correct as follows:
 - .1 Fill under bearing surfaces and footings with approved structure fill compacted to 100% Standard Proctor Dry Density.
 - .2 Fill under other areas compacted to a minimum of 95% Maximum Dry Density.
- .11 Hand trim, make firm and remove loose material and debris from excavations. Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.
- .12 Obtain excavation permit prior to starting any on-site excavations.

3.9 FILL TYPES AND
COMPACTION

- .1 Use fill of types as indicated or specified below. Compaction densities are percentages of maximum densities obtained from ASTM D698.
- .2 Within trenches:
 - .1 For pipes, cables, ducts, fittings and appurtenances, install bedding as follows: Provide min. 150 mm bedding layer of bedding sand under pipes, cables, ducts, fittings and appurtenances. Compact to 95% of Maximum Dry Density. Side fill to top of utility or service manually with beddings and in uniform lifts not exceeding 150 mm. Hand tamp only.
- .3 Backfill: provide min. 300 mm protective backfill cover over bedding cover, hand-place. Compact to 95% of Maximum Dry Density. For remainder of trench backfill to underside of sub-base course or of surface restoration in lifts not to exceed 200 mm. Compact to 95%

of Maximum Dry Density.

- .4 Notify Consultant four hours prior to backfilling of trenches.

3.10 BACKFILLING

- .1 Do not proceed with backfilling operations until Owner's Representative has inspected and approved installation.
- .2 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
- .3 Do not use backfill material which is frozen or contains ice, snow or debris.
- .4 Backfilling around installations.
 - .1 Place bedding and surround material as specified elsewhere.
 - .2 Do not backfill around or over cast-in-place concrete within 24 hours after placing of concrete.
- .5 Place layers simultaneously on both sides of installed work to equalize loading. Difference not to exceed 225 mm.
- .6 Where earth pressures are liable to develop permit concrete to cure for minimum 28 days to withstand earth and compaction pressures. Do not install earth or backfill until concrete has cured completely.
- .7 Place protective material layer under, around and over minor installations until 600 mm of cover is provided. Dumping material directly on installations will not be permitted.
- .8 Place backfill materials of earth fill around structure in uniform layers not exceeding 200 mm compacted thickness up to finish grade. Compact each layer replacing succeeded layer.
- .9 Where new services cross under existing services, compact bedding for existing service pipe to 150 mm below bottom of pipe and provide a cast-in-place cradle for length of unsupported pipe.

3.11 INSPECTION AND
TESTING

- .1 The Contractor shall submit gradation curves for proposed materials to demonstrate compliance with specifications. Pay all costs for gradation curves.
- .2 Have an independent testing laboratory carry out testing of materials and compaction. Frequency of tests will be determined by Consultant.
- .3 Where tests or inspections by designated testing laboratory reveal work not in accordance with contract requirements, Contractor shall pay costs for additional tests or inspections as Consultant may require to verify acceptability of corrected work.

3.12 RESTORATION

- .1 Upon completion of work, remove surplus materials and debris, trim slopes, and correct defects noted by Consultant.
- .2 Clean and reinstate areas affected by work as directed by Consultant.

PART 1 - GENERAL

- 1.1 DESCRIPTION .1 This section covers asphalt tack coat between layers/lifts of asphalt.
- 1.2 REFERENCES .1 CAN/CGSB-16.2-M89, Emulsified Asphalts, Anionic Type, for Road Purposes.
.2 ASTM D140-88, Practice for Sampling Bituminous Materials.
- 1.3 SAMPLES .1 Upon request, submit samples in accordance with Section 01 33 00 - Submissions/Shop Drawings, Product Data, Samples and Mock-ups.
.2 Submit, in plastic containers to Consultant, two - 4 L samples of asphalt tack coat material proposed for use at least 2 weeks prior to commencing work
- 1.4 ASPHALT MATERIAL CERTIFICATION .1 Upon request by Consultant, submit manufacturer's test data and certification that asphalt tack coat material meets requirements of this section.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Anionic emulsified asphalt: to CAN/CGSB-16.2, grade SS-1.

PART 3 - EXECUTION

- 3.1 EQUIPMENT .1 Pressure distributor to be:
.1 Designed, equipped, maintained, and operated so that asphalt material:

.2 Is maintained at even temperature. May be applied uniformly on variable widths of surface up to 5 m.

.3 May be applied at readily determined and controlled rate of 0.14 L/m² with uniform pressure, and with an allowable variation from any specified rate not exceeding 0.04 L/m²

.2 Capable of distributing asphalt material in uniform spray without atomization at temperature required.

.3 Equipped with meter registering metres of travel per minute, visibly located to enable truck driver to maintain constant speed required for application at specified rate.

.4 Equipped with pump having flow meter graduated in units of 5 L or less per minute passing through nozzles and readily visible to operator. Pump power unit to be independent of truck power unit.

.5 Equipped with an easily read, accurate and sensitive device which registers temperature of liquid in reservoir.

.6 Equipped with accurate volume measuring device or calibrated tank.

.7 Equipped with nozzles of same make and dimensions, adjustable for fan width and orientation.

3.2 APPLICATION

.1 Apply tack coat only on clean and dry surface. Obtain Consultant's approval of surface before applying asphalt tack coat.

.2 Dilute asphalt emulsion with water at 1:1 ratio for application. Mix thoroughly by pumping or other method approved by Consultant.

.3 Apply tack coat evenly to pavement surface at rate as directed by Consultant but do not exceed 0.7 L/m².

.4 Paint contact surfaces of curbs, gutters,

headers, manholes and like structures with thin, uniform coat of asphalt tack coat material.

- .5 Do not apply asphalt tack coat when air temperature is less than 5°C or when rain is forecast within 2 hours of application.
- .6 Apply tack coat only to base coarse surfaces that are expected to be overlaid on same day.
- .7 Evenly distribute localized excessive deposits of tack coat by brooming as directed by Consultant.
- .8 Where traffic is to be maintained, treat no more than one half of width of surface in one application.
- .9 Keep traffic off tacked areas until tack coat has set as directed by Consultant.
- .10 Re-tack contaminated or disturbed areas as directed by Consultant.
- .11 Permit tack coat to set before placing asphalt paving.

PART 1 - GENERAL

1.1 REFERENCES .1 Current PEI DTI Standard Specification, Division 600.

1.2 SAMPLES .1 Submit to the Consultant, samples of material for sieve analysis at least two (2) weeks before beginning Work.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Prime coat, tack coat and asphalt cement shall be as per PEI DTI Specifications, Division 500. Grade of asphalt cement to be as recommended by an approved materials testing authority and accepted by PEI DTI.
- .2 Asphaltic material: hot-mixed, hot-laid combination of mineral aggregates, uniformly coated and mixed with an asphaltic binder in a suitable mixing plant. Asphaltic materials and aggregates must meet the requirements of Section 603 of the Prince Edward Island Department of Transportation and Infrastructure Specification.
- .3 Composition of mixture: to grading and asphalt content requirements in Table 4, Section 603 of the Prince Edward Island Department of Transportation and Infrastructure Specification. Base course asphalt to be Mix Type A, thickness shown on the Drawings. Seal course asphalt to be Mix Type B, thickness shown on Drawings.

PART 3 - EXECUTION

3.1 FOUNDATIONS .1 Compaction: compact each lift of granular material to 100% maximum density to ASTM D 698. Maximum lift thickness: 150 mm.

- 3.2 GENERAL .1 Coordinate, pay costs for and have Department of Transportation and Infrastructure construction control testing requirements performed and ensure compliance with the General Provisions and Contract Specifications for Highway Construction.
- 3.3 EQUIPMENT .1 Pressure distributor:
.1 Distributor to be designed, maintained, equipped and operated that asphalt material at even temperature may be applied in a uniform manner on width up to 4.5 metres at readily determined and controlled rates.
.2 Equip with easily read, accurate and sensitive device which registers temperature of liquid in reservoir.
- .2 Cold Planer: Self propelled with automatic longitudinal and transverse grade and slope controls. Equip with a loading conveyor to facilitate removal of milled asphalt by truck.
- 3.4 ASPHALT PAVING .1 Prior to laying mix, clean surface of loose and foreign material.
- .2 Place asphalt concrete to thicknesses, grades and lines indicated unless otherwise directed by Consultant. Carryout interface with existing asphalt as per PEI DTI Specification 705.
- .3 Placing conditions:
.1 Place asphalt only when air temperature is above 5°C for base course, and 10°C for surface course.
.2 When temperature of surface on which material is to be placed falls below 10°C, provide extra rollers as necessary to obtain required compaction before cooling.
.3 Do not place asphalt concrete when pools of standing water exist on surface to be paved, during rain, or when surface is damp.
- .4 Place, roll, and compact asphalt concrete to Section 603, Province of Prince Edward Island, Department of Transportation and Infrastructure Standard Specification.

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ASPHALT PAVING

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3.5 THICKNESS AND

DTI FINISH TOLERANCES .1 Thickness and finish tolerances to be as per PEI
specifications 603.11.

PART 1 - GENERAL

- 1.1 REFERENCES .1 CGSB 15-GP-1M-80, Calcium Chloride.
- 1.2 MEASUREMENT FOR PAYMENT .1 Supply and application of water for dust control is incidental to the work, to be included in overall tendered price.
- 1.3 DELIVERY, STORAGE AND HANDLING .1 Supply water in quantities and at times as directed by Owner's Representative.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Water: potable to Owner's Representative's approval.

PART 3 - EXECUTION

- 3.1 APPLICATION .1 Apply water with equipment approved by Owner's Representative at rate of 0.5 to 5.0 l/m² as appropriate when directed by Owner's Representative.
- .2 Apply water with distributors equipped with spray system to ensure uniform application and with means of shut-off.

PART 1 - GENERAL

- 1.1 WORK INCLUDED .1 This section specifies requirements for supplying and installing select borrow, granular material, concrete curbs, concrete sidewalks and asphalt curbs, to the lines, grades, dimensions and typical details as indicated or directed.
- 1.2 RELATED WORK .1 Cast in Place Concrete: Section 03 30 00
.2 Excavating, Trenching and Backfilling: Section 31 23 10
.3 Roadway Construction: Section 31 24 13
.4 Cast in Place Replaceable Tactile/Detectable Warning Surface Tiles: Section 32 17 26
.5 Asphalt Paving: Section 32 12 16
- 1.3 REFERENCE STANDARDS .1 Do cast-in-place concrete work in accordance with Section 03 30 00.
.2 Asphalt curbs shall be as per PEI DTI Specifications Division 600.
- 1.4 PROTECTION .1 Protect existing adjacent surfaces designated to remain. In event of damage, immediately replace or make repairs at no extra cost and to the approval of the Consultant. Prior to the start of construction carry out a condition survey with the consultant and confirm the work to be carried out.
- 1.5 SUBMITTALS .1 Inform the Consultant of proposed source of materials and provide access for sampling at least 4 weeks prior to commencing work.

PART 2 - PRODUCTS

- 2.1 GRANULAR BEDDING .1 Granular bedding: Class A Granular as specified in Section 31 23 10.
-

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- 2.2 SUB BASE .1 Sub Base: Select Borrow as indicated on the drawings and in Section 31 23 10.
- 2.3 FORMWORK .1 Formwork to Section 03 30 00.
- 2.4 REINFORCING .1 Reinforcing to Section 03 30 00.
- 2.5 CONCRETE MIX .1 Proportion normal density concrete in accordance with CAN/CSA-A23.1, Alternative 1, to give following properties for concrete in exterior curbs, sidewalks, and traffic islands:
- .1 Use type GU cement.
 - .2 Minimum compressive strength at 28 days: 32 MPa.
 - .3 Minimum cement content: CAN/CSA-A23.1.
 - .4 Class of exposure: C-2.
 - .5 Nominal size of coarse aggregate: 20 mm.
 - .6 Slump at time and point of discharge: 80 mm ± 30 mm.
 - .7 Air content: 5% to 8% maximum.
 - .8 Chemical admixtures: in accordance with ASTM C494.
 - .9 Maximum water-cement ratio 0.45.
- .2 Do not change concrete mix without prior approval of Consultant. Should change in material source be proposed, provide new mix design for approval by Consultant.
- .3 Asphaltic concrete mixes to meet PEI DTI Standards, Division 600.

PART 3 - EXECUTION

- 3.1 EXCAVATION .1 Remove existing curb and sidewalk indicated and excavate to the lines and grades shown on the drawings, and as required to install new.
- .2 Compact surface of subgrade to 100% Standard Proctor Density.
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|---|----|--|
| <u>3.1 EXCAVATION
(Cont'd)</u> | .3 | Obtain the Consultant's approval of subgrade before placing granular base. |
| | | |
| <u>3.2 INSPECTION OF
GRANULAR BASE</u> | .1 | Do not form curb, sidewalk, or islands until granular base and reinforcing are inspected and approved. |
| | | |
| <u>3.3 GRANULAR BASE</u> | .1 | Place select borrow as indicated to bring subgrade to grades required for granular base, compact to 100% Standard Proctor. Place granular base material to lines and widths and depths indicated and compact to 100% Standard Proctor Density to ASTM D698. |
| | | |
| <u>3.4 FORMING</u> | .1 | Concrete and asphalt for curbs to be shaped by forms of either wood or metal construction or by use of a slip form paver. Extruding equipment and mule configuration to be approved before construction begins. Hand finish surface when directed by Consultant. |
| | .2 | Form vertical surfaces to full depth using forming material that will not deform under loading by plastic concrete. |
| | .3 | Securely position forms to required lines and grades. |
| | .4 | Horizontal and vertical alignment of the forms prior to placing concrete must not vary more than 6 mm from the correct alignment and grade. |
| | .5 | Coat forms with approved form release agent. |
| | .6 | Obtain approval of forms before placing concrete. |
| | | |
| <u>3.5 CONCRETE
WORKMANSHIP AND
TESTING</u> | .1 | Obtain the Consultant's approval before placing concrete. Place concrete in accordance with CAN/CSA-A23.1. |
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- 3.5 CONCRETE WORKMANSHIP AND TESTING
(Cont'd)
- .2 Test concrete once for each day concrete is poured (curb, apron, sidewalk). Each days testing must include field slump and air, and 7, 28 and 56 day cylinder breaks to test for compressive strength. Test results will be considered representative of the completed days pour.
- 3.6 CURING CONCRETE
CONCRETE
- .1 Apply curing compound to finished surfaces at a rate recommended by manufacturer, as soon as the water sheen has left the concrete surface.
- .2 Cure and protect concrete to CAN/CSA-A23.1 unless otherwise directed. Thirty days after concrete placement, sweep the curb/gutter clean and apply two coats 50/50 boiled linseed oil and kerosene to curb/gutter. Allow two (2) days between applications.
- 3.7 TOLERANCES
TOLERANCES
- .1 Finish surfaces to within 3mm in 3m as measured with 3m straight edge place on surface.
- 3.8 EXPANSION AND CONTRACTION JOINTS
CONTRACTION JOINTS
- .1 Install tooled transverse contraction joints after floating, when concrete is stiff, but still plastic, at intervals of 15m.
- .2 When sidewalk is adjacent to curb, make joints of curb, gutters and sidewalk coincide.
- 3.9 FINISHING CONCRETE
CONCRETE
- .1 Finish exposed surfaces to a smooth uniform finish, free of open texturing and exposed aggregate. Do not work more mortar to surface than required. Do not use neat cement as a dryer to facilitate finishing.
- .2 Round edges, including edges of joints, with 10mm radius edging tool.
- .3 Finish surfaces to prevent ponding.
- .4 Immediately after floating, give sidewalk/curb surface uniform broom finish to produce regular corrugations not exceeding 2mm deep, by drawing broom in direction normal to centerline.
-

3.10 CONSTRUCTION JOINTS

- .1 Control joints to be saw cut minimum of one-third of section thickness, width to be 4 mm. Make saw cuts within 4-18 hours of finishing concrete, as soon as concrete can be sawn without dislodging aggregate particles.
- .2 Install joints as directed at intervals of:
 - .1 Isolation joints, 15 metres or as required.
 - .2 Transverse control joint spacing shall equal width of sidewalk.
 - .3 Install control joints adjacent to utility pole encroachments, as indicated on the drawings.
- .3 Install isolation joint filler around manholes and catch basins, signal pole bases, and along length adjacent to concrete curbs, catch basins, or permanent structure.
- .4 At the end of each concrete pour, install isolation joint dowels to form cold pour construction joint.
- .5 Install isolation joints in center an splitter islands as shown on the drawings.
- .6 Install joint filler in isolation joints.
- .7 Seal isolation joints with sealant approved by Consultant.

3.11 DEFECTIVE WORK

- .1 Concrete is defective when:
 - .1 Concrete contains excessive honeycombing or embedded debris.
 - .2 The strength level fails to meet the criteria of CAN/CSA-A23.
 - .3 Concrete air content is less than the minimum specified.
- .2 Repair or replace defective concrete at no additional cost to the Contract.

3.12 CLEAN-UP

- .1 Upon completion of work, remove debris and surplus excavated material, trim surfaces and leave work site clean and tidy.

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PART 1 - GENERAL

1.1 RELATED WORK

- .1 Cast-in-Place Concrete: Section 03 30 00
- .2 Sidewalks & Curbs: Section 32 16 15

1.2 DESCRIPTION

- .1 This Section includes Specifications for installing Cast In Place Replaceable Tactile Warning Surface Tiles (REP) with an in-line truncated dome pattern, embedded in curb ramps at the locations and to the dimensions shown on the Drawings, in accordance with the Contract Documents and as directed by the Consultant.

1.3 RELATED DOCUMENTS

- .1 Drawings and general provisions of the Contract, including General and Special Conditions and Division 1 Specifications, apply to this Section.
- .2 American Association of State Highway and Transportation Officials (AASHTO): Test Method AASHTO-H20.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Cast In Place Replaceable Tactile Warning Surface Tiles (REP) must be suitably packaged or crated to prevent damage in shipment or handling. Finished surfaces shall be protected by sturdy wrappings.
- .2 Storage Facility
 - .1 Store REP Tiles in an area that is within an acceptable temperature range (40-90 degrees). In particular, protect sealants from freezing.
 - .2 Maintain Storage Facility in a clean dry condition to prevent contamination or damage to REP Tiles and incidentals.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Cast in Place replaceable tactile panels as manufactured by ADA Solutions, or approved equal.
- .2 Provide concrete, sealants and related materials in accordance with the Contract Documents and the guidelines set by their respective manufacturers.

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- 2.2 EQUIPMENT .1 Provide all tools, equipment and services required for satisfactory installation per manufacturer's instruction as Incidental Work. Equipment, which may be required include typical mason's tools, a 2-foot long level with electronic slope readout, (2) 25-pound weights, and a rubber mallet with a piece of wood for tamping down the Tactile Warning Unit(s).

PART 3 - EXECUTION

- 3.1 PREPARATION .1 During all concrete pouring and REP Tile Installation procedures, provide adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.
- .2 The physical characteristics of the concrete must be consistent with the Contract Specifications while maintaining a slump range of 4 - 7 to permit solid placement of the REP Tile. An overly wet mix will cause the REP Tile to float. Under these conditions place suitable weights such as two (2) concrete blocks or sandbags (25 pounds) on each REP Tile.
- .3 Pour and finish the concrete true and smooth to the required dimensions and slope prior to REP Tile placement.

- 3.2 INSTALLATION .1 Install REP Tile as per the manufacturer's instructions.
- .2 To the maximum extent possible, orient the REP Tiles such that the rows of in-line truncated domes are parallel with the direction of the ramp. When multiple REP Tiles regardless of size are used, align the truncated domes between the tactile warning surface tiles and throughout the entire tactile warning surface installation.
-

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3.2 INSTALLATION
(Cont'd)

- .3 In accordance with the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Rights of Way (7/23/11, Access Board): Sections 304 + 305), Tactile Warning Surface Tile shall be located relative to the curb line as shown within Sections 304+305 of the Guidelines.
- .4 Tamp or vibrate REP Tiles into the fresh concrete to ensure that there are no voids or air pockets, and the field level of the Tactile Warning Surface Tile is flush to the adjacent concrete surface or as the Drawings indicate to permit proper water drainage and eliminate tripping hazards between adjacent finishes.
- .5 On Continuous Runs: leave a 3mm nominal gap between successive Tactile Warning Surface Tiles. As part of the concrete finishing operation, the Installer shall apply 6mm edge treatment around the perimeter of the Tactile Warning Surface Tiles to facilitate future replacement of the Tactile Warning Surface Tile. A Urethane Sealant such as Sikaflex 1a or BASF NP1 shall be applied to the edge treatment for a watertight Tactile Warning Surface Tile installation.
- .6 The manufacturer recommends that a maximum of 10m be installed in any single pour. Please call (800) 373-0519 for further details.

3.3 CLEANING AND
PROTECTING

- .1 Protect REP Tiles against damage during construction period to comply with REP Tiles manufacturer's Specifications.
- .2 During and after the REP Tile installation and the concrete curing stage, it is imperative that there are no walking, leaning or external forces placed on the REP Tile to rock the REP Tile, causing a void between the underside of the REP Tile and the concrete substrate.
- .3 Remove Protective Plastic Sheeting from REP Tile within 24 hours of installation of the REP Tile. Particularly under hot weather conditions (26 degrees or higher), plastic sheeting will adhere strongly (resulting in difficult removal of same) to Tactile Warning Surface Tile when not removed quickly.

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3.3 CLEANING AND
PROTECTING
(Cont'd)

- .4 If requested by the Consultant, clean REP Tiles not more than four (4) days prior to date scheduled for inspection intended to establish date of substantial completion in each area of project. Clean REP Tile by method specified by Tactile Warning Surface Products manufacturer.

PART 1 - GENERAL

- 1.1 SCOPE OF WORK .1 This section specifies topsoil, topsoil amendments, the stripping of topsoil, the preparation of existing grades, the placement of topsoil, and finish grading.
- 1.2 RELATED SECTIONS .1 Section 01 35 44 - Environmental Protection Procedures
- 1.3 TESTING .1 All soil and sand used in this project shall be tested for compliance with texture specification by a laboratory designated by the owner. Soil sampling, testing and analysis to be in accordance with Provincial regulations and standards. Contractor will arrange and pay for cost of tests.
- 1.4 WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials.
- .2 Divert unused soil amendments from landfill to a Provincially approved hazardous material collections site.
- .3 Do not dispose of unused soil amendments into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

PART 2 - PRODUCTS

- 2.1 TOPSOIL .1 Topsoil for this project to consist of topsoil stripped from site and imported topsoil to be supplied by the Contractor.
- .2 Topsoil: mixture of mineral particulates, micro organisms and organic matter which provides suitable medium for supporting intended plant growth, free of debris, weeds, foreign objects, toxic materials and stones and roots greater than 20 mm length.
- .3 Soil texture: sandy loam, based on The Canadian System of Soil Classification, to

the following particle distribution and gradation:

<u>Particle Type</u>	<u>Distribution by volume</u>	<u>Acceptable Range</u>
very coarse sand	10%	10% or less
coarse & medium sand	45%	42-47%
fine sand	15%	13-17%
very fine sand	10%	8-12%
clay	20%	18-23%

<u>Particle Type</u>	<u>Gradation</u>
very coarse sand	2.0-1.0 mm
coarse sand	1.0-0.5 mm
medium sand	0.5-0.25 mm
fine sand	0.25-0.15 mm
very fine sand	0.15-0.106 mm
clay	less than 0.06 mm

- .4 Organic matter: 4-20% by dry weight volume, well decomposed and stable. Organic material measuring 20 mm will not exceed 2% by volume.
- .5 pH range: 6.0-7.0
- .6 Consistency: friable when moist.
- .7 Fertility: major soil nutrients present in following ratios:
 - .1 Nitrogen (N): 20 to 40 micrograms of available N per gram of topsoil
 - .2 Phosphorus (P): 10 to 20 micrograms of phosphate per gram of topsoil.
 - .3 Potassium (K): 80 to 120 micrograms of potash per gram of topsoil.
 - .4 Calcium, magnesium, Sulphur and/or establishment of intended vegetation.

2.2 SOURCE QUALITY
CONTROL

- .1 Advise Engineer of sources of topsoil to be utilized with sufficient lead time for testing.
- .2 Contractor is responsible for amendments to supply topsoil as specified.

PART 3 - EXECUTION

3.1 STRIPPING OF
TOPSOIL

- .1 Commence topsoil stripping of areas after all wood, brush and grasses have been removed from site.
- .2 Strip and pulverize topsoil to depths as indicated. Avoid mixing topsoil with subsoil where textural quality will be moved outside acceptable range of intended application.
- .3 Stockpile in locations as directed by Owner's Representative. Stockpile height not to exceed 2 m.
- .4 Unused topsoil is to remain on site.
- .5 Protect stockpiles from contamination and compaction.

3.2 PREPARATION OF
EXISTING GRADE

- .1 Verify that grades are correct. If discrepancies occur, notify Engineer and do not commence work until instructed by Department Representative.
- .2 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.
- .3 Remove debris, roots, branches, stones in excess of 25 mm diameter and other deleterious materials. Remove soil contaminated with calcium chloride, toxic materials and petroleum products. Remove debris which protrudes more than 75 mm above surface. Dispose of removed material off site.
- .4 Cultivate entire area which is to receive topsoil to minimum depth of 100 mm. Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.

3.3 PLACING AND
SPREADING OF
TOPSOIL/PLANTING SOIL

- .1 Place topsoil after Engineer has accepted subgrade.

- .2 Spread topsoil in uniform layers not exceeding 150 mm.
 - .3 Spread topsoil/planting soil to following minimum depths after settlement.
 - .1 100 mm for seeded areas.
 - .2 500 mm for shrub beds.
 - .4 Manually spread topsoil/planting soil around trees, shrubs and obstacles.
- 3.4 SOIL AMENDMENTS
- .1 For planting beds and turf areas: apply and thoroughly mix soil amendments into full specified depth of topsoil at following rates recommended by soil analyses.
- 3.5 FINISH GRADING
- .1 Grade to eliminate rough spots and low areas and ensure positive drainage. Prepare loose friable bed by means of cultivation and subsequent raking.
 - .2 Consolidate topsoil to required bulk density using equipment approved by Engineer. Leave surfaces smooth, uniform and firm against deep foot printing.
- 3.6 ACCEPTANCE
- .1 Engineer will inspect and test topsoil in place and determine acceptance of material, depth of topsoil and finish grading.
- 3.7 SURPLUS MATERIAL
- .1 Surplus materials to remain on site.
- 3.8 CLEANING
- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

PART 1 - GENERAL

- 1.1 SCOPE OF WORK .1 This Section specifies seed, mulch, slurry preparation and application, and maintenance for hydraulic seeding.
- 1.2 RELATED SECTIONS .1 Section 01 35 44 - Environmental Protection Procedures
- .2 Section 32 91 21 - Topsoil Placement and Grading
- 1.3 SUBMITTALS .1 Upon request, provide product data for:
- .1 Seed.
- .2 Mulch.
- .3 Tackifier.
- .4 Fertilizer.
- 1.4 SCHEDULING .1 Schedule hydraulic seeding to coincide with preparation of soil surface.
- .2 Schedule hydraulic seeding to be completed not later than September 30 without written approved from Consultant.
- 1.5 WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials.
- .2 Divert unused fertilizer from landfill to Provincially approved hazardous material site.
- .3 Do not dispose of unused fertilizer into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

PART 2 - PRODUCTS

- 2.1 SEED .1 "Canada pedigreed grade" in accordance with Government of Canada Seeds Act and

Regulations.

- .2 Mixture composition:
 - .1 60% Creeping Red Fescue
 - .2 20% Hard Fescue
 - .3 10% Perennial Rye
 - .4 10% White Clover

- 2.2 MULCH .1 Specially manufactured for use in hydraulic seeding equipment, non-toxic, water activated, green colouring, free of germination and growth inhibiting factors with following properties:
 - .1 Made from wood cellulose fibre.
 - .2 Organic matter content: 95% plus or minus 0.5%.
 - .3 Value of pH: 6.0.
 - .4 Potential water absorption: 900%.

- 2.3 TACKIFIER .1 Water soluble vegetable carbohydrate powder.

- 2.4 WATER .1 Free of impurities that would inhibit germination and growth.

- 2.5 FERTILIZER .1 To Canada "Fertilizers Act" and "Fertilizers Regulations". Complete synthetic, slow release with 35% of nitrogen content in water-insoluble form.

- 2.6 INOCULANTS .1 Inoculant containers to be tagged with expiry date.

PART 3 - EXECUTION

- 3.1 WORKMANSHIP .1 Do not spray onto structures, signs, guide rails, fences, plant material, utilities and other than surfaces intended.
- .2 Clean-up immediately, any material sprayed where not intended, to satisfaction of Consultant.

- .3 Do not perform work under adverse field conditions such as wind speeds over 10 km/h, frozen ground or ground covered with snow, ice or standing water.
- .4 Protect seeded areas from trespass until plants are established.

3.2 PREPARATION OF SURFACES

- .1 Fine grade areas to be seeded free of humps and hollows. Ensure areas are free of deleterious and refuse materials.
- .2 Ensure areas to be seeded are moist to depth of 150 mm before seeding.
- .3 Obtain Consultant's approval of grade and topsoil depth before starting to seed.

3.3 FERTILIZING PROGRAM

- .1 Fertilize prior to fine grading incorporating fertilizer equally distributed in accordance with the following program.
- .2 Following germination, all seeded areas to receive an application of fertilizer at rate specified by fertilizer manufacturer after one cut.
- .3 Apply additional soil supplements as determined necessary by soils analysis conducted during establishment period.

3.4 PREPARATION OF SLURRY

- .1 Measure quantities of materials by weight or weight-calibrated volume measurement.
- .2 Charge required water into seeder. Add material into hydraulic seeder under agitation. Pulverize mulch and charge slowly into seeder.
- .3 After all materials are in the seeder and well mixed, charge tackifier into seeder and mix thoroughly to complete slurry

3.5 SLURRY APPLICATION

- .1 Hydraulic seeding equipment:
 - .1 Slurry tank.
 - .2 Agitation system for slurry to be

capable of operating during charging of tank and during seeding, consisting of recirculation of slurry and/or mechanical agitation method.

.3 Capable of seeding by 50 m hand operated hoses and appropriate nozzles.

.4 Slurry mixture applied per 100 square metres.

.1 Seed: Grass mixture 2.0 kg.

.2 Mulch: 10 kg.

.3 Tackifier: as recommended by manufacturer.

.4 Water: Minimum 100 litres.

.5 Fertilizer: 0.5kg, Type 1 5-20-20

.2 Apply slurry uniformly, at optimum angle of application for adherence to surfaces and germination of seed.

.3 Using correct nozzle for application.

.4 Using hoses for surfaces difficult to reach and to control application.

.5 Blend application 300 mm into adjacent grass areas or sodded areas to form uniform surfaces.

.6 Re-apply where application is not uniform.

.7 Remove slurry from items and areas not designated to be sprayed.

.8 Protect seeded areas from trespass.

.9 Remove protection devices as directed by Consultant.

3.6 MAINTENANCE
DURING ESTABLISHMENT
PERIOD

.1 Perform following operation from time to seed application until acceptance by Consultant.

.2 Repair and reseed dead or bare spots to allow establishment of seed prior to acceptance.

.3 Mow grass once whenever it reaches height of 90 mm. Remove clippings which will smother grass.

.4 Fertilize seeded areas after first cutting in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles; water in well.

.5 Control weeds by mechanical or chemical means utilizing integrated pest management practices approved by the Owner.

.6 Water seeded area to maintain optimum soil moisture level for germination and continued growth of grass. Control watering to prevent washouts.

3.7 ACCEPTANCE

.1 Seeded areas will be accepted by Consultant provided that:

.1 Plants are uniformly established. Seeded areas are free of rutted, eroded, bare or dead spots.

.2 Areas have been mown at least twice.

.3 Areas have been fertilized.

.2 Areas seeded in fall will achieve final acceptance in following spring, one month after start of growing season provided acceptance conditions are fulfilled.

3.8 MAINTENANCE
DURING WARRANTY
PERIOD

.1 Perform following operations from time of acceptance until end of warranty period.

.2 Repair and reseed dead or bare spots to satisfaction of Consultant.

.3 Fertilize seeded areas in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles and water in well.

3.9 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

PART 1 - GENERAL

- 1.1 WORK INCLUDED .1 The work to be done under this Section consists of furnishing all materials, labour, tools and equipment and performing all operations necessary for the complete reinstatement of surfaces and structures disturbed by work of this Contract.
- .2 Repair damage or disturbance to surfaces, properties and structures, within limits of the Site or elsewhere on other properties occupied, traversed or otherwise used by the Contractor during the Contract period to a condition equal to or better than that before work began, at no additional cost to the Contractor.
- 1.2 RELATED WORK .1 Cast-in-Place Concrete: Section 03 30 00
- .2 Excavating, Trenching and Backfilling: Section 31 23 10
- .3 Roadway and Trail Construction: Section 31 24 13
- .4 Asphalt Paving: Section 32 12 16
- .5 Topsoil Placing and Grading: Section 32 12 21
- .6 Hydraulic Seeding: Section 32 92 22
- 1.3 REFERENCES .1 PEI Department of Transportation and Infrastructure Standard Specifications, latest edition.
- 1.4 MAINTENANCE .1 Contractor shall take care and maintain all reinstated areas until final acceptance of the work.
- .2 Repair damaged areas to the approval of the Engineer.

PART 2 - PRODUCTS

- 2.1 MATERIALS
- .1 Granular material: in accordance with the requirements of Section 31 23 10.
 - .2 Concrete material: as specified in Section 03 30 00.
 - .3 Asphalt material: as specified in Section 32 12 16.
 - .4 Grass surface materials: as specified in Sections 32 92 22.

PART 3 - EXECUTION

- 3.1 GENERAL
- .1 Maintain surfaces to be reinstated level with adjoining existing surfaces gravel until final reinstatement.
- 3.2 CONCRETE SURFACES
- .1 Carry out final reinstatement of concrete surfaces as follows:
 - .1 Cut back broken edges of original concrete to full depth, in straight lines.
 - .2 Before placing final surface material, remove existing gravel to a depth indicated over disturbed area, grade and recompact. Add gravel to compacted depths indicated. Compact to not less than 100% Maximum Corrected Dry density.
 - .3 Place and finish concrete in accordance with Section 03 30 00.
 - .4 Ensure finished surface is even, dense and matches grade of existing road or surface, as approved by the Engineer.
- 3.3 ASPHALT SURFACES
- .1 Keep surface of asphalt paved roads and surfaces in good condition by repairing settlement of trench backfilling as described in Section 31 23 10.
 - .2 Carry out final reinstatement of asphalt surfaces as follows:

.1 Cut back broken edges of original pavement to full depth, in straight lines. Cut back 300 mm minimum from edge of excavation to eliminate tension cracks. Clean contact surfaces and apply tack coat before placing asphalt concrete.

.2 Before placing final surface material, remove existing gravel to a depth indicated over disturbed area, grade and recompact. Add gravel to compacted depths indicated. Compact to not less than 100% Maximum Corrected Dry density.

.3 Supply, place, roll and compact asphalt mixture in accordance with Section 32 12 16.

.4 Compact asphalt concrete in lifts not exceeding 50 mm in thickness.

.5 Ensure finished surface is even, dense and matches grade of existing road or surface, as approved by the Engineer.

3.4 GRAVEL SURFACES

.1 Reinstatement gravel surfaces by placing 200 mm compacted thickness of gravel at an elevation such that gravel surface is smooth and even with adjacent surfaces.

.2 Place and compact gravel for surfaces in accordance with the requirements of PEI Department of Transportation and Infrastructure Renewal Standard Specifications.

3.5 GRASS SURFACES

.1 Seeding: to Section 32 92 22. Fine grade areas to be reinstated to smooth surface. Grade to allow for topsoil and seed to be placed so finish grade is smooth and even with existing surfaces.

PART 1 - GENERAL

- 1.1 RELATED WORK
- .1 Excavating, Trenching and Backfilling:
Section 31 23 10
 - .2 Sanitary Sewer Section: 33 31 00
 - .3 Storm Sewer Section: 33 42 13
- 1.2 REFERENCES
- .1 ASTM C478M-2009, Specification for Precast Reinforced Concrete Manhole Sections.
 - .2 ASTM C858-2019, Standard Specification for Underground Precast Concrete Utility Structures.
 - .3 CAN/CGSB 51.34-M86, Vapour Barrier, Polyethylene Sheet for use in Building construction.
 - .4 CAN/CSA-A23.1-04/A23.2-09, Concrete Materials and Methods for Concrete Construction.
 - .5 CAN/CSA-A3000-2008, Cementitious Materials.
- 1.3 SHOP DRAWINGS
- .1 Submit shop drawings in accordance with Section 01 33 00.
 - .2 Submit manufacturer's test data and certification that materials meet requirements of this section. Include manufacturer's drawings, information, size of components, dimensions and details where pertinent.

PART 2 - PRODUCTS

- 2.1 MATERIALS
- .1 Precast manhole and catch basin sections: to ASTM C478M, circular. Manhole top sections shall be eccentric cone type where identified on Drawings. Precast concrete bases to be

- approved by Engineer.
- .2 Joints:
 - .1 To be made watertight using rubber O-rings or bituminous gaskets.
 - .3 Mortar:
 - .1 Cement: to CAN/CSA-A3000.
 - .4 Adjusting rings:
 - .1 Precast concrete, to ASTM C478.
 - .5 Frames and covers: to dimensions as indicated and following requirements:
 - .1 Metal gratings and covers to bear evenly on frames. A frame with grating or cover to constitute one unit. Assemble and mark unit components before shipment.
 - .2 Gray iron castings: to ASTM A48.
 - .3 Bearing surfaces to be ground to eliminate surface imperfections.
 - .4 Manhole frames and covers: heavy duty municipal type for road service and as indicated on the drawings.
 - .1 Acceptable product for out of asphalt locations: IMP Group Ltd. Type R10.
 - .6 Catch basin frames and grates: IMP R-11.
 - .7 Gravel bedding material: as specified in Section 31 23 10.
 - .8 Waterproofing Membrane: self-adhesive SBS modified bitumen sheet membrane with cross laminated polyethylene film with manufacturer recommended primer.

PART 3 - EXECUTION

3.1 EXCAVATION AND BACKFILLING

- .1 Provide excavating and backfilling in accordance with Section 31 23 10.
- .2 Obtain approval of Engineer before installing, manholes or catch basins.

3.2 CONCRETE WORK

- .1 Do concrete work in accordance with Section 03 30 00.
- .2 Position metal inserts in accordance with

dimensions and details as indicated.

3.3 INSTALLATION

- .1 Construct units in accordance with details indicated, plumb and true to alignment and grade.
- .2 Complete manholes and catch basins as pipe laying progresses.
- .3 Dewater excavation as directed by Engineer and remove soft and foreign material before placing concrete base.
- .4 Set precast concrete base on 150 mm minimum of granular bedding compacted in accordance with Section 31 23 10.
- .5 Set riser sections on precast base and make joint watertight with O-ring gaskets or bituminous gaskets.
- .6 Plug lifting holes with non-shrink grout.
- .7 Place stub outlets at elevations and in position indicated. Provide type of gasket connection as indicated.
- .8 Install manhole benching where shown on the Drawings using concrete suitable for exposure classification C-2 as specified in CSA-A23.1.
- .9 Install frames and covers on applicable top sections to elevation shown on Drawings or as directed.
- .10 Clean units of debris and foreign materials. Remove fins and sharp projections. Prevent debris from entering system.
- .11 Apply waterproofing for sanitary manholes as indicated on drawings.

3.4 SYSTEM CLEANLINESS

- .1 Upon manhole adjustment, removal of catchment device and all works associated with restoration around the manhole, the contractor shall provide all testing equipment, labour, incidentals, traffic control, etc., required to undertake an

inspection of the system to verify its cleanliness. This inspection must be done in the presence of the Engineer.

3.5 MANHOLE TESTING
(SANITARY ONLY)

- .1 No test shall be carried out on a manhole structure until it has developed sufficient strength to withstand stresses produced by such test.
- .2 All incoming and outgoing sewers and service lines shall be plugged, the plugs restrained and the vacuum tester head placed on the manhole frame and sealed. A vacuum of 250 mm Hg shall then be drawn on the manhole and the time measured for the vacuum to drop to 225 mm Hg. This time shall not be less than 40 seconds for manhole diameters up to 1200 mm. For manholes deeper than 6 m, the test times shall be increased by 2 seconds per 300 mm of additional manhole depth.
- .3 Should any leakage take place, take necessary measures approved by the Consultant to make them completely watertight.

PART 1 - GENERAL

- 1.1 RELATED SECTIONS .1 Excavating and Backfilling: Section 31 23 10.
.2 Precast Structures: Section 33 39 00.
- 1.2 REFERENCES .1 American Society for Testing and Materials (ASTM).
.2 ASTM C 14M-20, Standard Specification for Concrete Sewer, Storm Drain and Culvert Pipe.
.3 ASTM C 76M-20, Standard Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe.
.4 ASTM C 443M-20, Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
.5 ASTM D 698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (600 kN-m/m³).
.6 Canadian Standards Association (CSA)
.7 CSA B182.1 and B182.2 for PVC Sewer Pipe, SDR=35.
.8 CAN/CSA-A257 Series-M92, Standards for Concrete Pipe.
.9 Canadian General Standards Board (CGSB).
- 1.3 SAMPLES .1 Submit samples in accordance with Section 01 33 00- Submissions/Shop Drawings.
.2 Inform Consultant at least 2 weeks prior to commencing work, of proposed source of bedding materials and provide access for sampling.
- 1.4 MATERIAL CERTIFICATION .1 Submit manufacturer's test data and certification at least 2 weeks prior to commencing work.

.2 Certification to be marked on pipe.

1.5 DELIVERY, STORAGE
AND HANDLING

.1 Contractor to deliver, store and handle materials in accordance with Product Requirements or DTI standards.

1.6 WASTE MANAGEMENT
AND DISPOSAL

.1 Separate and recycle waste materials as indicated by Consultant.

.2 Place materials defined as hazardous or toxic waste in designated containers.

.3 Ensure emptied containers are sealed and stored safely for disposal away from children.

PART 2 - PRODUCTS

2.1 PIPE

.1 Concrete Pipe and Fittings:

.1 Reinforced: to ASTM C 76M or CAN/CSA A257.2.

.2 Joints: bell and spigot with flexible rubber gaskets to CAN/CSA A257.3-M.

.2 PVC Pipe and Fittings (300 mm dia. and smaller):

.1 Type PSM polyvinyl chloride, to CAN/CSA-B1800, DR35, complete with Bell and Spigot joints with locked in rubber gaskets.

.3 HDPE Pipe and Fittings:

.1 Double walled HDPE pipe with smooth walled interior and corrugated exterior to 320 Kpa. To CSA B182.6.

.2 Joints: bell and spigot with flexible rubber gaskets.

.3 Connect to catch basins with PVC manhole adaptor.

.4 Acceptable products: Solflo Max by Soleno, Boss 200 by Big "0", ADS N12-ST.

2.2 GRANULAR BEDDING
AND BACKFILL

.1 Sand bedding: as specified in Section 31 23 10.

- .2 Clear stone bedding: as specified in Section 31 23 10.

PART 3 - EXECUTION

3.1 TRENCHING

- .1 Do trenching work in accordance with Section 31 23 10 - Excavating and Backfilling
- .2 Obtain Consultant's approval of trench line and depth prior to placing bedding material or pipe.

3.2 BEDDING

- .1 Dewater excavation, as necessary, to allow placement of culvert bedding in the dry.
- .2 Place minimum thickness of 150 mm of approved granular material on bottom of excavation and compact to minimum 98% maximum density to ASTM D 698.
- .3 Shape bedding to fit lower segment of pipe exterior so that width of at least 25% of pipe diameter is in close contact with bedding and to camber as indicated or as directed by Consultant, free from sags or high points.
- .4 Place bedding in unfrozen condition.

3.3 BACKFILLING

- .1 Place approved backfill material in 150 mm layers to full width, alternately on each side of culvert, so as not to displace it laterally or vertically.
- .2 Compact each layer to 98% maximum density to ASTM D 698 taking special care to obtain required density under haunches.
- .3 Protect installed culvert with minimum 600 mm cover of compacted fill before heavy equipment is permitted to cross. During construction, width of fill, at its top, to be at least twice diameter or span of pipe and with slopes not steeper than 1:2.
- .4 Place clay plug as shown on drawings.

END OF SECTION