Municipality of the County of Cumberland

Parrsboro Wellfield UV Disinfection Upgrade

Issued for Tender

July 2024

Tender No. T-MCC-2405

Municipality of the County of Cumberland

Parrsboro Wellfield
UV Disinfection Upgrade

	Issued for Tender		Jul. 4/24	BB
Revision & Title		***Reviewed By:***	***Date***	***Issued By:***

CBCL

REGISTERED PROFESSIONAL ENGINEER
DATE: July 4, 2024
B. J. BICKERTON
11131
PROVINCE OF NOVA SCOTIA

CBCL Project No. 230808.00

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1. A complete Tender is comprised of the following:

   a) The Tender Form in its entirety, with all pages and spaces for entry of information by Tenderers filled in as instructed.

   b) Acknowledgment of addenda received by the Tenderer during the tendering period.

   c) Tender Security (refer to clause 12 herein).

2. **Tenders shall be submitted exclusively by email to tenders@cbcl.ca up until 3:00 p.m., local time, on Thursday July 18, 2024, hereinafter** referred to as the Tender Closing. Subject heading of email to read Tender No. T-MCC-2405– TENDER SUBMISSION." The time stamp of the email received by tenders@cbcl.ca will be used to determine if the submission was received in time – not the time it was emailed sent by the sender. Last minute submissions are not recommended.

3. Tender opening will occur promptly following Tender Closing. A Microsoft Teams link will be sent to all any bidders that requests one and bids will be opened who accept the link and virtually attend the opening.

4. Before tendering, Tenderers shall have examined the *Site* of the Work and shall have satisfied themselves as to the working conditions, including labour conditions and labour rules, the nature and kind of work to be done, any special risks associated therewith and all other matters which may be necessary in order to form a proper conception under which the work will be required to be performed. Tenderers shall not be entitled to claim at any time after closing of tenders that there was any misunderstanding in regard to all such conditions.

5. When forming their estimates and preparing their tenders, Tenderers shall take full cognizance of the content of all the Contract Documents listed in Section 00 41 42 – Tender Form – Stipulated Price.

6. Any ambiguities, inconsistencies, or uncertainties in the Contract Documents which may become apparent to Tenderers when tendering shall be advised via email to the *Consultant* Ben Bickerton, P.Eng, at bbickerton@cbcl.ca not less than two (2) working days before Tender Closing. Tenderers will be advised simultaneously of any decisions on such matters as necessary by means of addenda (which will be serially numbered) and all addenda issued shall be incorporated into the Contract Documents.

7. Tenderer shall fill in the Completion Time and is notified that the completion date based on this may be taken into account in considering the tenders.

8. 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 and is provided for information only 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 may render such tender liable to disqualification as determined by the *Owner*.

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* (inclusive of *Value Added Taxes*) in evidence of the bona fide nature of the tender. Tender security must satisfy the same requirements of Contract Security as set forth in clause 13 herein.

13. Tender and Contract Security shall be in favour of the Owner and shall be in the form of a Certified Cheque, irrevocable Letter of Credit or a 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 A scan of a hard copy bond, certified cheque, or irrevocable letter of credit is permitted provided the original is provided in the subsequent hard copy submission.
    .2 The bonds shall be issued by a company whose guarantee bonds are acceptable to the Government of Canada. Use the latest edition of CCDC Form 220 or similar for a Bid Bond, a CCDC Form 221 for a Performance Bond, and a Form 222 or similar for a Labour and Material Bond.
    .3 Bonds may be submitted in an electronic or digital format provided it meets the following criteria:
        .1 The version submitted by the Tenderer must be verifiable by the Owner with respect to the totality and wholeness of the bond form, including: the content; all digital signatures; all digital seals; with the Surety Company, or an approved verification service provider of the Surety Company.
        .2 The version submitted must be viewable, printable, and storable in standard electronic file formats acceptable to the Owner, and in a single file. Allowable formats include pdf.
        .3 The verification may be conducted by the Owner immediately or at any time during the life of the bond and at the discretion of the Owner with no requirement for passwords or fees.
        .4 The results of the verification must provide a clear, immediate and printable indication of pass or fail regarding subsection 12.3.1 above.
        .5 Bonds failing the verification process will NOT be considered to be valid.
        .6 Bonds passing the verification process will be treated as original and authentic.

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 occurs first.

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” included herein is executed.

16. Within seven (7) days of written acceptance of a tender, the Contractor shall provide Contract Security in the amount and form as specified in Section 00 73 00 – Supplementary General Conditions, and Insurance as specified in CCDC 2-2020, GC 11.1.

17. Complete the Tender Form and have corrections initialled by the individual signing the tender.

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 25 00 – Substitution Procedures.

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. The *Owner* reserves the right to negotiate with the lowest compliant tenderer in the event that all tendered prices are higher than anticipated.

21. Tenders, which in the opinion of the *Owner* are considered to be informal or unbalanced, may be rejected.

22. Tenders may be amended or withdrawn without penalty, by email to tenders@cbcl.ca prior to Tender Closing. Amendments shall not disclose either original or revised total price.
    .1 Subject line of amendment or withdrawal to read as follows: "[Amendment]/[Withdrawal] of Tender for Tender No. T-MCC-2405". Provide an electronic signature and submit at email address provided above. All Submissions must be received prior to Tender Closing.
    .2 The *Owner* will not be responsible for any failure attributable to the transmission or reception of the email. The time stamp of the email received by tenders@cbcl.ca will be used to determine if the submission was received in time – not the time it was emailed sent by the sender. Last minute submissions are not recommended.

23. Tenderers are encouraged to attend a non-mandatory *site* meeting, held at the Parrsboro Well building, Prospect Road, at **2:00 PM local time on Thursday July 11th, 2024**. Questions may be asked and description of the Work may be discussed during this meeting, however no minutes of the meeting will be distributed. Modifications made by way of addenda, to tendering requirements or the Contract Documents, shall be binding.

24. The Work includes the installation of Owner-supplied equipment (UV disinfection systems). The Owner-supplied equipment will be turned over to the Contractor at the Site of Work at a time agreeable to the Contractor. At this time the Contractor will take full responsibility for the care and protection of the equipment through installation and commissioning by the Equipment Supplier and assist the Equipment Supplier as necessary to ensure a full and functional system installation and integration. UV Equipment Shop Drawings are available by request to the Consultant.

END OF SECTION

TO: Municipality of the County of Cumberland

FROM: _____

_____

The undersigned Tenderer, having carefully read and examined the undermentioned Contract Documents prepared by CBCL Limited for the completion of the Municipality of the County of Cumberland, Parrsboro Wellfield UV Disinfection Upgrade, Tender No. T-MCC-2405, which comprise all the tender documents in accordance with the following documents:

Tender Form – Stipulated Price
CCDC 2-2020:
- Agreement Between *Owner* and Contractor
- Definitions
- General Conditions of the Stipulated Price Contract - CCDC 2-2020 Supplementary General Conditions

Specifications
Drawings
Addendum/Addenda

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

CONTRACT PRICE **$_____ (A)**

ADD HST (15% OF CONTRACT PRICE) $_____

TOTAL AMOUNT PAYABLE **$_____**

Tenderer's HST Registration No. _____

COMPLETION TIME

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

The Undersigned Tenderer:

.1 Declares that this tender is valid for acceptance until _____, 202_____ (being sixty (60) calendar days from the Tender Closing).

.2 Declares that the Contract Price set forth in the Tender Form has been correctly computed for the purposes of this tender and that it includes and covers all duties, and handling charges; transportation; and all other charges. Harmonized sales tax is not to be included in the Contract Price.

.3 Hands you herewith by way of Tender Security a Bid Bond or Certified Cheque or irrevocable Letter of Credit in the amount of ten percent (10%) of the *Total Amount Payable* on the understanding that in the event of this tender not being accepted by you, then this Tender Security will be returned to the undersigned Tenderer either at the time that the Contract is entered into with some other Tenderer, or at the expiration of validity of this tender, whichever is the sooner.

.4 Undertakes in the event of your acceptance of this tender, to execute a formal agreement in the form hereto attached, within seven (7) calendar days of written acceptance and further agrees to provide the Contract Security as specified in Part 14 of Section 00 73 00 – Supplementary General Conditions, and Insurance as specified in GC 11.1.

.5 Undertakes, in the event of your acceptance of the Tender, to achieve *Ready for Takeover* within the number of weeks of written notification of Award indicated above.

.6 Upon request, provide evidence of ability and experience within seven (7) calendar days of request, including experience in similar *Work*, *Work* currently in progress, senior supervisory staff available for the *Work*, equipment available for the *Work*, and financial resources.

.7 Agrees that in the event of failing or neglecting either to provide the Contract Security and Insurance and/or to execute the Agreement in the manner herein before undertaken, then the Tender Security shall be forfeited.

.8 Agrees that unless and until a formal agreement is prepared and executed, this tender together with your written acceptance thereof shall constitute a binding Contract between us.

.9 Understands and agrees that the *Owner* is not bound to accept the lowest or any tender which they may receive.

.10 Agrees to provide, maintain and pay for the insurance coverages specified in the Contract Documents. One copy of all insurance policies of the Contractor and two copies of certificates of insurance, certifying to the issuance of all insurance policies, shall be furnished to the *Owner*. Each and every insurance policy shall name the Contractor, *Owner* and *Consultant* as being insured in the full amount of the insurance.

.11 Declares to have personal knowledge of the location of the proposed *Work* and is informed as to the actual conditions and requirements, including labour conditions and labour rules and shall not claim at any time after execution of the Agreement that there was any misunderstanding in regard to such conditions and requirements.

.12 Declares to have carefully examined the documents and Addenda No._____to _____

referred to in the first paragraph of this Tender Form, and the Tenderer hereby accepts and agrees to the same as forming a part of the Contract.

.13 Understands that in the event that the tendered Contract Price is not within the project budget, the *Owner* has the right to negotiate the Contract with the low bidder or reject all tenders received.

.14 Agrees that the Warranty Period defined in the Contract Documents shall be for a period of one (1) year from the date of Ready-for-Takeover of the *Work*.

.15 Understands Contract Security, as specified herein, will be retained until the expiration of the Warranty Period.

.16 Understands that Substantial Performance of the *Work* will be established in accordance with General Conditions of the Contract and applicable lien legislation at the Place of *Work*.

.17 Understands that after the issuance of the certificate of Substantial Performance of the Work by the Consultant, provided that the Contractor has relieved the Owner from any and all claims, demands and lien claims for and in respect of the Contract, and has completed all outstanding items and corrected all deficiencies, the Contractor shall submit an application for Final Payment and the Consultant will thereafter prepare the Final Certificate for payment in accordance with the General Conditions of the Contract and applicable lien legislation at the Place of Work.

.18 Understands that *Ready for Takeover* will only be given when the Contractor has completed all outstanding items and corrected all deficiencies. The Contractor can then submit an application for Final Payment and the *Consultant* will thereafter prepare the Final Certificate for payment in accordance with the General Conditions of the Contract.

.19 Understands that the payment of holdback will be in accordance with the General Conditions of the Contract and subject to the provisions of the lien legislation applicable to the Place of *Work*.

.20 Understands the occupational Health and Safety Legislation and any Workers or Workplace compensation legislation applicable to the Place of the *Work* and declares that they are in good standing and have all necessary certification as required by such legislation.

.21 Agrees that time shall be construed as being of the essence of the Contract.

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.

_____
Email

*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 OF SECTION

CCDC 2

CCDC 2

Stipulated Price Contract

2020

[Name of Project]

Apply a CCDC 2 copyright seal here. The application of the seal demonstrates the intention of the party proposing the use of this document that it be an accurate and unamended form of CCDC 2 – 2020 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE
CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE
CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE

CCDC 2 STIPULATED PRICE CONTRACT

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CCDC Copyright 2020
Must not be copied in whole or in part without the written permission of the CCDC.

AGREEMENT BETWEEN OWNER AND CONTRACTOR CCDC 2 – 2020

AGREEMENT BETWEEN OWNER AND CONTRACTOR

For use when a stipulated price is the basis of payment.

This Agreement made on day of in the year .
by and between the parties

hereinafter called the "*Owner*"

and

hereinafter called the "*Contractor*"

The *Owner* and the *Contractor* agree as follows:

ARTICLE A-1 THE WORK

The *Contractor* shall:

1.1 perform the *Work* required by the *Contract Documents* for *(insert below the description or title of the Work)*

located at *(insert below the Place of the Work)*

for which the Agreement has been signed by the parties, and for which *(insert below the name of the Consultant)*

is acting as and is hereinafter called the "*Consultant*" and

1.2 do and fulfill everything indicated by the *Contract Documents*, and

1.3 commence the *Work* by the day of in the year and, subject to adjustment in *Contract Time* as provided for in the *Contract Documents*, attain *Ready-for-Takeover*, by the day of in the year .

ARTICLE A-2 AGREEMENTS AND AMENDMENTS

2.1 The *Contract* supersedes all prior negotiations, representations or agreements, either written or oral, relating in any manner to the *Work*, including the bid documents that are not expressly listed in Article A-3 of the Agreement – CONTRACT DOCUMENTS.

2.2 The *Contract* may be amended only as provided in the *Contract Documents*.

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ARTICLE A-3 CONTRACT DOCUMENTS

3.1 The following are the *Contract Documents* referred to in Article A-1 of the Agreement – THE WORK:

- Agreement between *Owner* and *Contractor*
- Definitions
- General Conditions
- *

* *(Insert here, attaching additional pages if required, a list identifying all other Contract Documents e.g. supplementary conditions; Division 01 of the Specifications – GENERAL REQUIREMENTS: Project information that the Contractor may rely upon; technical Specifications, giving a list of contents with section numbers and titles, number of pages and date; material finishing schedules; Drawings, giving drawing number, title, date, revision date or mark; addenda, giving title, number, date; time schedule)*

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ARTICLE A-4 CONTRACT PRICE

4.1 The *Contract Price*, which excludes *Value Added Taxes*, is:

/100 dollars $

4.2 *Value Added Taxes* (of _____ %) payable by the *Owner* to the *Contractor* are:

/100 dollars $

4.3 Total amount payable by the *Owner* to the *Contractor* for the *Work* is:

/100 dollars $

4.4 These amounts shall be subject to adjustments as provided in the *Contract Documents*.

4.5 All amounts are in Canadian funds.

ARTICLE A-5 PAYMENT

5.1 Subject to the provisions of the *Contract Documents* and *Payment Legislation*, and in accordance with legislation and statutory regulations respecting holdback percentages, the *Owner* shall:

.1 make progress payments to the *Contractor* on account of the *Contract Price* when due in the amount certified by the *Consultant* unless otherwise prescribed by *Payment Legislation* together with such *Value Added Taxes* as may be applicable to such payments,

.2 upon *Substantial Performance of the Work*, pay to the *Contractor* the unpaid balance of the holdback amount when due together with such *Value Added Taxes* as may be applicable to such payment, 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.

5.2 Interest

.1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by adjudication, arbitration or court, interest at the following rates on such unpaid amounts shall also become due and payable until payment:
(1) 2% per annum above the prime rate for the first 60 days.
(2) 4% per annum above the prime rate after the first 60 days.
Such interest shall be compounded on a monthly basis. The prime rate shall be the rate of interest quoted by
(Insert name of chartered lending institution whose prime rate is to be used)

for prime business loans as it may change from time to time.

.2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.2.1 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 the date it is paid.

ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING

6.1 *Notices in Writing* will be addressed to the recipient at the address set out below.

6.2 The delivery of a *Notice in Writing* will be by hand, by courier, by prepaid first class mail, or by other form of electronic communication during the transmission of which no indication of failure of receipt is communicated to the sender.

6.3 A *Notice in Writing* delivered by one party in accordance with this *Contract* will be deemed to have been received by the other party on the date of delivery if delivered by hand or courier, or if sent by mail it will be deemed to have been received five calendar days after the date on which it was mailed, provided that if either such day is not a *Working Day*, then the *Notice in Writing* will be deemed to have been received on the *Working Day* next following such day.

6.4 A *Notice in Writing* sent by any form of electronic communication will be deemed to have been received on the date of its transmission provided that if such day is not a *Working Day* or if it is received after the end of normal business hours on the date of its transmission at the place of receipt, then it will be deemed to have been received at the opening of business at the place of receipt on the first *Working Day* next following the transmission thereof.

6.5 An address for a party may be changed by *Notice in Writing* to the other party setting out the new address in accordance with this Article.

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Owner

*name of Owner**

address

email address

Contractor

*name of Contractor**

address

email address

Consultant

*name of Consultant**

address

email address

** If it is intended that a specific individual must receive the notice, that individual's name shall be indicated.*

ARTICLE A-7 LANGUAGE OF THE CONTRACT

7.1 When the *Contract Documents* are prepared in both the English and French languages, it is agreed that in the event of any apparent discrepancy between the English and French versions, the English / French # language shall prevail.
 # Complete this statement by striking out inapplicable term.

7.2 This Agreement is drawn in English at the request of the parties hereto. La présente convention est rédigée en anglais à la demande des parties.

ARTICLE A-8 SUCCESSION

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

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

SIGNED AND DELIVERED
in the presence of:

WITNESS

signature

name of person signing

OWNER

name of Owner

signature

name and title of person signing

WITNESS

signature

name of person signing

CONTRACTOR

name of Contractor

signature

name and title of person signing

N.B. *Where legal jurisdiction, local practice or Owner or Contractor requirement 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.

Note: This contract is protected by copyright. Use of a CCDC 2 document not containing a CCDC 2 copyright seal constitutes an infringement of copyright. Only sign this contract if the document cover page bears a CCDC 2 copyright seal to demonstrate that it is intended by the parties to be an accurate and unamended version of CCDC 2 – 2020 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

DEFINITIONS
CCDC 2 – 2020

DEFINITIONS

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

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 adjustments in the *Contract Price* and the *Contract Time*.

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.

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*.

Consultant

The *Consultant* is the person or entity engaged by the *Owner* and identified as such in the Agreement. The *Consultant* is the Architect, the Engineer or entity licensed to practise in the province or territory of the *Place of the Work*.

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.

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.

Contract Price

The *Contract Price* is the amount stipulated in Article A-4 of the Agreement – CONTRACT PRICE.

Contract Time

The *Contract Time* is the time from commencement of the *Work* to the date of *Ready-for-Takeover* as stipulated in paragraph 1.3 of Article A-1 of the Agreement – THE WORK .

Contractor

The *Contractor* is the person or entity identified as such in the Agreement.

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, and diagrams.

Notice in Writing

A *Notice in Writing*, where identified in the *Contract Documents*, is a written communication between the parties or between them and the *Consultant* that is transmitted in accordance with the provisions of Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

Owner

The *Owner* is the person or entity identified as such in the Agreement.

Other Contractor

Other Contractor means a contractor, other than the *Contractor* or a *Subcontractor*, engaged by the *Owner* for the *Project*.

Payment Legislation

Payment Legislation means such legislation in effect at the *Place of the Work* which governs payment under construction contracts.

Place of the Work

The *Place of the Work* is the designated site or location of the *Work* identified in the *Contract Documents*.

Product

Product or Products means material, machinery, equipment, and fixtures forming part of the *Work*, but does not include *Construction Equipment*.

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Project

The *Project* means the total construction contemplated of which the *Work* may be the whole or a part.

Ready-for-Takeover

Ready-for-Takeover shall have been attained when the conditions set out in paragraph 12.1.1 of GC 12.1 – READY-FOR-TAKEOVER have been met, as verified by the *Consultant* pursuant to paragraph 12.1.4.2 of GC 12.1 – READY-FOR-TAKEOVER.

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*.

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, quality, and the services necessary for the performance of the *Work*.

Subcontractor

A *Subcontractor* is a person or entity having a direct contract with the *Contractor* to perform a part or parts of the *Work* at the *Place of the Work*.

Substantial Performance of the Work

Substantial Performance of the Work is as defined in the lien legislation applicable to the *Place of the Work*.

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*.

Supplier

A *Supplier* is a person or entity having a direct contract with the *Contractor* to supply *Products*.

Temporary Work

Temporary Work means temporary supports, structures, facilities, services, and other temporary items, excluding *Construction Equipment*, required for the execution of the *Work* but not incorporated into the *Work*.

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 have been imposed on the *Contractor* by tax legislation.

Work

The *Work* means the total construction and related services required by the *Contract Documents*.

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*.

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GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT CCDC 2 – 2020

GENERAL CONDITIONS

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 The *Contract Documents* are complementary, and what is required by one shall be as binding as if required by all. Performance by the *Contractor* shall be required only to the extent consistent with the *Contract Documents*.

1.1.3 The *Contractor* shall review the *Contract Documents* for the purpose of facilitating co-ordination and execution of the *Work* by the *Contractor*.

1.1.4 The *Contractor* is not responsible for errors, omissions or inconsistencies in the *Contract Documents*. If there are perceived errors, omissions or inconsistencies discovered by or made known to the *Contractor*, the *Contractor* shall promptly report to the *Consultant* and shall not proceed with the work affected until the *Contractor* has received corrected or additional information from the *Consultant*.

1.1.5 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 *Owner* and *Contractor*,
- the Definitions,
- Supplementary Conditions,
- the General Conditions,
- Division 01 of the *Specifications*,
- technical *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 amended or later dated documents shall govern over earlier documents of the same type.

.5 noted materials and annotations shall govern over graphic indications.

1.1.6 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 portion of the *Work*.

.2 the *Consultant* and the *Contractor*, a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any portion of the *Work*.

1.1.7 Words and abbreviations which have well known technical or trade meanings are used in the *Contract Documents* in accordance with such recognized meanings.

1.1.8 References in the *Contract Documents* to the singular shall be considered to include the plural as the context requires.

1.1.9 Neither the organization of the *Specifications* nor the arrangement of *Drawings* shall control the *Contractor* in dividing the work among *Subcontractors* and *Suppliers*.

1.1.10 *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*.

1.1.11 Physical 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.

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1.3.2 No action or failure to act by the *Owner*, the *Consultant* or the *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 *Consultant* and the *Contractor*.

GC 2.2 ROLE OF THE CONSULTANT

2.2.1 The *Consultant* will provide administration of the *Contract* as described in the *Contract Documents*.

2.2.2 The *Consultant* will visit the *Place of the Work* at intervals appropriate to the progress of construction to become familiar with the progress and quality of the work and to determine if the *Work* is proceeding in general conformity with the *Contract Documents*.

2.2.3 If the *Owner* and the *Consultant* agree, the *Consultant* will 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*.

2.2.4 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 – PAYMENT and GC 5.5 – 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 perform the *Work* in accordance with the *Contract Documents*.

2.2.6 Except with respect to GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER, the *Consultant* will be, in the first instance, the interpreter of the requirements of the *Contract Documents*.

2.2.7 Matters in question relating to the performance of the *Work* or the interpretation of the *Contract Documents* shall be initially referred in writing to the *Consultant* by the party raising the question for interpretations and findings and copied to the other party.

2.2.8 Interpretations and findings of the *Consultant* shall be consistent with the intent of the *Contract Documents*. In making such interpretations and findings the *Consultant* will not show partiality to either the *Owner* or the *Contractor*.

2.2.9 The *Consultant*'s interpretations and findings will be given in writing to the parties within a reasonable time.

2.2.10 With respect to claims for a change in *Contract Price*, the *Consultant* will make findings as set out in GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE.

2.2.11 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*.

2.2.12 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*.

2.2.13 The *Consultant* will review and take appropriate action upon *Shop Drawings*, samples and other submittals by the *Contractor*, in accordance with the *Contract Documents*.

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2.2.14 The *Consultant* will prepare *Change Orders* and *Change Directives* as provided in GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

2.2.15 The *Consultant* will conduct reviews of the *Work* to determine the date of *Substantial Performance of the Work* and verify that *Ready-for-Takeover* has been attained.

2.2.16 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.

2.2.17 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.

2..2.18 If the *Consultant*'s engagement is terminated, the *Owner* shall immediately engage a *Consultant* against whom the *Contractor* makes no reasonable objection and whose duties and responsibilities under the *Contract Documents* will be that of the former *Consultant*.

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*, by the *Consultant*'s instructions, or by the laws or ordinances of the *Place of the Work*, the *Contractor* shall give the *Consultant* reasonable notification of when the work will be ready for review and inspection. The *Contractor* shall arrange for and shall give the *Consultant* reasonable notification 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 required by the laws or ordinances applicable to 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 others if such test or inspection is designated in the *Contract Documents*.

GC 2.4 DEFECTIVE WORK

2.4.1 The *Contractor* shall promptly correct defective work that has been rejected by the *Consultant* as failing to conform to the *Contract Documents* whether or not the defective work was incorporated in the *Work* or 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 corrections 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 finding.

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*.

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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 THE 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 the *Owner*'s own forces with the *Work* of the *Contract*;

.2 enter into separate contracts with *Other Contractors* under conditions of contract which are compatible with the conditions of the *Contract*;

.3 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

.4 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 store their products and execute their work;

.2 co-ordinate and schedule the *Work* with the work of *Other Contractors* or the *Owner*'s own forces that are identified in the *Contract Documents*;

.3 participate with *Other Contractors* and the *Owner* in reviewing their construction schedules when directed to do so; and

.4 report promptly to the *Consultant* in writing any apparent deficiencies in the work of *Other Contractors* or of the *Owner*'s own forces, where such work affects the proper execution of any portion of the *Work*, prior to proceeding with that portion of the *Work*.

3.2.4 Where a change in the *Work* is required as a result of the co-ordination and integration 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 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

3.2.5 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. In the absence of *Other Contractors* having reciprocal obligations, disputes and other matters in question initiated by the *Contractor* against *Other Contractors* will be considered disputes and other matters in question between the *Contractor* and the *Owner*.

3.2.6 Should the *Owner*, the *Consultant*, *Other Contractors*, or anyone employed by them directly or indirectly 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 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

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* unless otherwise specified in the *Contract Documents*.

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, paragraphs 3.3.1 and 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*.

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GC 3.4 CONSTRUCTION SCHEDULE

3.4.1 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 3.5 SUPERVISION

3.5.1 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.

3.5.2 The appointed representative shall represent the *Contractor* at the *Place of the Work*. Information and instructions provided by the *Consultant* to the *Contractor*'s appointed representative shall be deemed to have been received by the *Contractor*, except with respect to Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

GC 3.6 SUBCONTRACTORS AND SUPPLIERS

3.6.1 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 applicable 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 any persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the *Contractor*.

3.6.2 The *Contractor* shall indicate in writing, if requested by 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.

3.6.3 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.

3.6.4 If the *Owner* requires the *Contractor* to change a proposed *Subcontractor* or *Supplier*, the *Contract Price* and *Contract Time* shall be adjusted by the difference occasioned by such required change.

3.6.5 The *Contractor* shall not be required to employ as a *Subcontractor* or *Supplier*, a person or firm to which the *Contractor* may reasonably object.

3.6.6 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 3.7 LABOUR AND PRODUCTS

3.7.1 The *Contractor* shall maintain good order and discipline among the *Contractor*'s employees engaged on the *Work* and employ only workers that are skilled in the tasks assigned.

3.7.2 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*.

3.7.3 Unless otherwise specified in the *Contract Documents*, *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*.

GC 3.8 SHOP DRAWINGS

3.8.1 The *Contractor* shall provide *Shop Drawings* as required in the *Contract Documents*.

3.8.2 The *Contractor* shall provide *Shop Drawings* to the *Consultant* to review in accordance with an agreed schedule, or in the absence of an agreed schedule, in orderly sequence and sufficiently in advance so as to cause no delay in the *Work* or in the work of *Other Contractors* or the *Owner*'s own forces.

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3.8.3 The *Contractor* shall review all *Shop Drawings* before providing them to the *Consultant*. The *Contractor* represents by this review that:

.1 the *Contractor* has determined and verified all applicable field measurements, field construction conditions, *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 *Work* and of the *Contract Documents*.

3.8.4 The *Consultant*'s review is for conformity to the design concept and for general arrangement only.

3.8.5 At the time of providing *Shop Drawings*, the *Contractor* shall expressly advise the *Consultant* in writing of any deviations in a *Shop Drawing* from the requirements of the *Contract Documents*. The *Consultant* shall indicate the acceptance or rejection of such deviation expressly in writing.

3.8.6 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*.

3.8.7 The *Consultant* will review and return *Shop Drawings* in accordance with the schedule agreed upon, or, in the absence of such schedule, with reasonable promptness so as to cause no delay in the performance of the *Work*.

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 the *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 the actual cost of the *Work* under any cash allowance exceeds the amount of the allowance, any unexpended amounts from other cash allowances shall be reallocated, at the *Consultant's* direction, to cover the shortfall, and, in that case, there shall be no additional amount added to the *Contract Price* for overhead and profit. Only where the actual cost of the *Work* under all cash allowances exceeds the total amount of all cash allowances shall the *Contractor* be compensated for the excess incurred and substantiated, plus an amount for overhead and profit on the excess only, as set out in the *Contract Documents*.

4.1.5 The net amount of any unexpended cash allowances, after providing for any reallocations as contemplated in paragraph 4.1.4, shall be deducted from the *Contract Price* by *Change Order* without any adjustment for the *Contractor's* overhead and profit on such amount.

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 items called for under cash allowances must be ordered 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 The contingency allowance includes the *Contractor*'s overhead and profit in connection with such contingency allowance.

4.2.3 Expenditures under the contingency allowance shall be authorized and valued as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

4.2.4 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the expenditures authorized under paragraph 4.2.3 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 give the *Contractor Notice in Writing* of any material change in the *Owner*'s financial arrangements to fulfil the *Owner*'s obligations under the *Contract* during the performance of the *Contract*.

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GC 5.2 APPLICATIONS FOR PAYMENT

5.2.1 Applications for payment on account as provided in Article A-5 of the Agreement – PAYMENT shall be submitted monthly to the *Owner* and the *Consultant* simultaneously as the *Work* progresses.

5.2.2 Applications for payment shall be dated the last day of each payment period, which is the last day of the month or an alternative day of the month agreed in writing by the parties.

5.2.3 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* as of the last day of the payment period.

5.2.4 The *Contractor* shall submit to the *Consultant*, at least 15 calendar 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.

5.2.5 The schedule of values shall be made out in such form as specified in the *Contract* and supported by such evidence as the *Consultant* may reasonably require.

5.2.6 Applications for payment shall be based on the schedule of values accepted by the *Consultant* and shall comply with the provisions of *Payment Legislation*.

5.2.7 Each application for payment shall include evidence of compliance with workers' compensation legislation at the *Place of the Work* and after the first payment, a declaration by the *Contractor* as to the distribution made of the amounts previously received using document CCDC 9A 'Statutory Declaration'.

5.2.8 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 5.3 PAYMENT

5.3.1 After receipt by the *Consultant* and the *Owner* of an application for payment submitted by the *Contractor* in accordance with GC 5.2 – APPLICATIONS FOR PAYMENT:

.1 The *Consultant* will issue to the *Owner* and copy to the *Contractor*, no later than 10 calendar days after the receipt of the application for 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* certifies a different amount, or rejects the application or part thereof, the *Owner* shall promptly issue a written notice to the *Contractor* giving reasons for the revision or rejection, such written notice to be in compliance with *Payment Legislation*.

.2 The *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement – PAYMENT on or before 28 calendar days after the receipt by the *Owner* and the *Consultant* of the application for payment, and in any event, in compliance with *Payment Legislation*.

GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK

5.4.1 The *Consultant* will review the *Work* to certify or verify the validity of the application for *Substantial Performance of the Work* and will promptly, and in any event, no later than 20 calendar days after receipt of the *Contractor*s application:

.1 advise the *Contractor* in writing that the *Work* or the designated portion of the *Work* is not substantially performed and give reasons why, or

.2 state the date of *Substantial Performance of the Work* or a designated portion of the *Work* in a certificate and issue a copy of that certificate to each of the *Owner* and the *Contractor*.

5.4.2 Where the holdback amount required by the applicable lien legislation has not been placed in a separate lien holdback account, the *Owner* shall, no later than 10 calendar 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*.

5.4.3 Subject to the requirements of any *Payment Legislation*, all holdback amount prescribed by the applicable lien legislation for the *Work* shall become due and payable to the *Contractor* no later than 10 *Working Days* following the expiration of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*.

5.4.4 The *Contractor* shall submit an application for payment of the lien holdback amount in accordance with GC 5.3 – PAYMENT.

5.4.5 Where legislation permits progressive release of the holdback for a portion of the *Work* and the *Consultant* has certified or verified that the part of the *Work* has been performed prior to *Substantial Performance of the Work*, the *Owner* hereby agrees to release, and shall release, such portion to the *Contractor* in accordance with such legislation.

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5.4.6 Notwithstanding any progressive release of the holdback, the *Contractor* shall ensure that such parts of the *Work* are 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 the holdback was released.

GC 5.5 FINAL PAYMENT

5.5.1 When the *Contractor* considers that the *Work* is completed, the *Contractor* shall submit an application for final payment.

5.5.2 The *Consultant* will, no later than 10 calendar days after the receipt of an application from the *Contractor* for final payment, review the *Work* to verify the validity of the application and when the *Consultant* finds the *Contractor*'s application for final payment valid, the *Consultant* will promptly issue a final certificate for payment to the *Owner*, with a copy to the *Contractor*.

5.5.3 If the *Consultant* rejects the application or part thereof, the *Owner* will promptly issue a written notice to the *Contractor* giving reasons for the revision or rejection, such written notice to be in compliance with *Payment Legislation*.

5.5.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 – WORKERS' COMPENSATION, and any legislation applicable to the *Place of the Work*, the *Owner* shall, no later than 5 calendar days after the issuance of a final certificate for payment, pay the *Contractor* as provided in Article A-5 of the Agreement – PAYMENT and in any event, in compliance with *Payment Legislation*.

GC 5.6 DEFERRED WORK

5.6.1 If because of climatic or other conditions reasonably beyond the control of the *Contractor*, or if the *Owner* and the *Contractor* agree that, there are items of work that must be deferred, 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 deferred *Work*.

GC 5.7 NON-CONFORMING WORK

5.7.1 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 IN THE WORK

GC 6.1 OWNER'S RIGHT TO MAKE 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* is proposed or required, the *Consultant* will provide the *Contractor* with a written description of the proposed change in the *Work*. The *Contractor* shall promptly present to the *Consultant*, in a form that can be reasonably evaluated, a method of adjustment or an amount of adjustment for the *Contract Price*, if any, and the adjustment in the *Contract Time*, if any, for the proposed change in the *Work*.

6.2.2 When the *Owner* and the *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*. The value of the work performed as the result of a *Change Order* shall be included in the 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 corresponding 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 to direct a change in the *Work* which is within the general scope of the *Contract Documents*.

6.3.3 A *Change Directive* shall not be used to direct a change in the *Contract Time* only.

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6.3.4 Upon receipt of a *Change Directive*, the *Contractor* shall proceed promptly with the change in the *Work*.

6.3.5 For the purpose of valuing *Change Directives*, changes in the *Work* that are not substitutions or otherwise related to each other shall not be grouped together in the same *Change Directive*.

6.3.6 The adjustment in the *Contract Price* for a change carried out by way of a *Change Directive* shall be determined on the basis of the cost of the *Contractor*'s actual expenditures and savings attributable to the *Change Directive*, valued in accordance with paragraph 6.3.7 and as follows:

.1 If the change results in a net increase in the *Contractor*'s cost, the *Contract Price* shall be increased by the amount of the net increase in the *Contractor*'s cost, plus the *Contractor*'s percentage fee on such net increase.

.2 If the change results in a net decrease in the *Contractor*'s cost, the *Contract Price* shall be decreased by the amount of the net decrease in the *Contractor*'s cost, without adjustment for the *Contractor*'s percentage fee.

.3 The *Contractor*'s fee shall be as specified in the *Contract Documents* or as otherwise agreed by the parties.

6.3.7 The cost of performing the work attributable to the *Change Directive* shall be limited to the actual cost of the following in as much as it contributes directly to the implementation of the *Change Directive*:

Labour

.1 rates that are listed in the schedule or as agreed by the *Owner* and the *Contractor* including wages, benefits, compensation, contributions, assessments, or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada or Quebec Pension Plan for:

(1) trade labour in the direct employ of the *Contractor*;

(2) the *Contractor*'s personnel when stationed at the field office;

(3) the *Contractor*'s personnel engaged at shops or on the road, in expediting the production or transportation of materials or equipment; and

(4) the *Contractor*'s office personnel engaged in a technical capacity, or other personnel identified in Article A-3 of the Agreement – CONTRACT DOCUMENTS for the time spent in the performance of the *Work*;

Products, Construction Equipment and Temporary Work

.2 cost of all *Products* including cost of transportation thereof;

.3 in the absence of agreed rates, cost less salvage value of *Construction Equipment*, *Temporary Work* and tools, exclusive of hand tools under $1,000 owned by the *Contractor*;

.4 rental cost of *Construction Equipment*, *Temporary Work* and tools, exclusive of hand tools under $1,000;

.5 cost of all equipment and services required for the *Contractor*'s field office;

Subcontract

.6 subcontract amounts of Subcontractor with pricing mechanism approved by the *Owner*;

Others

.7 travel and subsistence expenses of the *Contractor*'s personnel described in paragraph 6.3.7.1;

.8 deposits lost provided that they are not caused by negligent acts or omissions of the *Contractor*;

.9 cost of quality assurance such as independent inspection and testing services;

.10 charges levied by authorities having jurisdiction at the *Place of the Work*;

.11 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;

.12 premium for all contract securities and insurance for which the *Contractor* is required, by the *Contract Documents*, to provide, maintain and pay in relation to the performance of the *Work*;

.13 losses and expenses sustained by the *Contractor* for matters which are the subject of insurance under the policies prescribed in GC 11.1 – INSURANCE when such losses and expenses are not recoverable because the amounts are in excess of collectible amounts or within the deductible amounts;

.14 taxes and duties, other than *Value Added Taxes*, income, capital, or property taxes, relating to the *Work* for which the *Contractor* is liable;

.15 charges for voice and data communications, courier services, expressage, transmittal and reproduction of documents, and petty cash items;

.16 cost for removal and disposal of waste products and debris;

.17 legal costs, incurred by the *Contractor*, in relation to the performance of the *Work* provided that they are not:

(1) relating to a dispute between the *Owner* and the *Contractor* unless such costs are part of a settlement or awarded by arbitration or court,

(2) the result of the negligent acts or omissions of the *Contractor*, or

(3) the result of a breach of this *Contract* by the *Contractor*;

.18 cost of auditing when requested by the *Owner*; and

.19 cost of *Project* specific information technology in accordance with the method determined by the parties.

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6.3.8 Notwithstanding any other provisions contained in the General Conditions of the *Contract*, it is the intention of the parties that the cost of any item under any cost element referred to in paragraph 6.3.7 shall cover and include any and all costs or liabilities attributable to the *Change Directive* other than those which are the result of or occasioned by any failure on the part of the *Contractor* to exercise reasonable care and diligence in the *Contractor*'s attention to the *Work*. Any cost due to failure on the part of the *Contractor* to exercise reasonable care and diligence in the *Contractor*'s performance of the *Work* attributable to the *Change Directive* shall be borne by the *Contractor*.

6.3.9 The *Contractor* shall keep full and detailed accounts and records necessary for the documentation of the cost of performing the *Work* attributable to the *Change Directive* and shall provide the *Consultant* with copies thereof.

6.3.10 For the purpose of valuing *Change Directives*, the *Owner* shall be afforded reasonable access to all of the *Contractor*'s pertinent documents related to the cost of performing the *Work* attributable to the *Change Directive*.

6.3.11 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.

6.3.12 If the *Owner* and the *Contractor* do not agree on the proposed adjustment in the *Contract Time* attributable to the change in the *Work*, or the method of determining it, the adjustment shall be referred to the *Consultant* for a finding.

6.3.13 When 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*.

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* and 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 give *Notice in Writing* to the other party of such conditions before they 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 *Owner*, through the *Consultant*, shall 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 promptly inform the *Owner* and the *Contractor* in writing.

6.4.4 If such concealed or unknown conditions relate to toxic and hazardous substances and materials, artifacts and fossils, or mould, the parties will be governed by the provisions of GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES, GC 9.3 – ARTIFACTS AND FOSSILS and GC 9.5 – MOULD.

GC 6.5 DELAYS

6.5.1 If the *Contractor* is delayed in the performance of the *Work* by the *Owner*, the *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, resulting in the failure of the *Contractor* to attain *Ready-for-Takeover* by the date stipulated in Article A-1 of the Agreement – THE WORK, 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

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.4 any cause beyond the *Contractor*'s control other than one resulting from a default 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*, the *Consultant* or anyone employed or engaged by them directly or indirectly.

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 the delay. In the case of a continuing cause of delay only one *Notice in Writing* shall be necessary.

6.5.5 If no schedule is made under paragraph 2.2.12 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.

GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

6.6.1 If the *Contractor* intends to make a claim for an increase to the *Contract Price*, or if the *Owner* intends to make a claim against the *Contractor* for a credit to the *Contract Price*, the party that intends to make the claim shall give timely *Notice in Writing* of intent to claim to the other party and to the *Consultant*.

6.6.2 Upon commencement of the event or series of events giving rise to a claim, the party intending to make the claim shall:
.1 take all reasonable measures to mitigate any loss or expense 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 The party making the claim shall submit within a reasonable time to the *Consultant* a detailed account of the amount claimed and the grounds upon which the claim is based and the *Consultant* will make a finding upon such claim.

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 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 both parties within 30 *Working Days* after receipt of the claim by the *Consultant*, or within such other time period as may be agreed by the parties.

6.6.6 If such finding is not acceptable to either party, the claim shall be settled in accordance with Part 8 of the General Conditions – DISPUTE RESOLUTION.

PART 7 DEFAULT NOTICE

GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH 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, terminate the *Contractor*'s right to continue with the *Work*, by giving the *Contractor* or receiver or trustee in bankruptcy *Notice in Writing* to that effect.

7.1.2 If the *Contractor* neglects to perform 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* which provides the detail of such neglect to perform the *Work* properly or such failure to comply with the requirements of the *Contract* to a substantial degree, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, give the *Contractor Notice in Writing*, containing particulars of the default including references to applicable provisions of the *Contract*, that the *Contractor* is in default of the *Contractor*'s contractual obligations and instruct the *Contractor* to correct the default in the 5 *Working Days* immediately following the receipt of such *Notice in Writing*.

7.1.3 If the default cannot be corrected in the 5 *Working Days* specified or in such other time period as may be subsequently agreed in writing by the parties, 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,
.2 provides the *Owner* with an acceptable schedule for such correction, and
.3 corrects the default in accordance with the *Contract* terms and with such schedule.

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7.1.4 If the *Contractor* fails to correct the default in the time specified or in such other time period as may be subsequently agreed in writing by the parties, without prejudice to any other right or remedy the *Owner* may have, the *Owner* may by giving *Notice in Writing*:

.1 correct such default and deduct the cost thereof from any payment then or thereafter due the *Contractor* for the *Work* 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* at the *Place of the Work*; subject to the rights of third parties, utilize the *Construction Equipment* at the *Place of the Work*; finish the *Work* by whatever method the *Owner* may consider expedient, but without undue delay or expense,

.2 withhold further payment to the *Contractor* until a final certificate for payment is issued,

.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 of the *Contract*.

GC 7.2 CONTRACTOR'S RIGHT TO SUSPEND 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, terminate the *Contract* by giving the *Owner* or receiver or trustee in bankruptcy *Notice in Writing* to that effect.

7.2.2 If the *Work* is suspended 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, terminate the *Contract* by giving the *Owner Notice in Writing* to that effect.

7.2.3 The *Contractor* may give *Notice in Writing* to the *Owner*, 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*,

.2 the *Consultant* fails to issue a certificate as provided in Part 5 of the General Conditions – PAYMENT,

.3 the *Owner* fails to pay the *Contractor* when due the amounts certified by the *Consultant* or awarded by adjudication, arbitration or court, or

.4 the *Owner* fails to comply with the requirements of the *Contract* to a substantial degree and the *Consultant*, except for GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER, gives a written statement to the *Owner* and the *Contractor* that provides detail of such failure to comply with the requirements of the *Contract* to a substantial degree.

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, suspend the *Work* or terminate the *Contract*.

7.2.5 If the *Contractor* terminates the *Contract* by giving a *Notice in Writing* to the *Owner* 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

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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 8.3.3 to 8.3.8 of GC 8.3 – NEGOTIATION, MEDIATION AND ARBITRATION, and in GC 8.4 – 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 ADJUDICATION

8.2.1 Nothing in this *Contract* shall be deemed to affect the rights of the parties to resolve any dispute by adjudication as may be prescribed by applicable legislation.

GC 8.3 NEGOTIATION, MEDIATION AND ARBITRATION

8.3.1 In accordance with the rules for mediation as provided in CCDC 40 'Rules for Mediation and Arbitration of Construction Industry Disputes' in effect at the time of bid closing, 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 Days*, within 10 *Working Days* after either party by *Notice in Writing* requests that the Project Mediator be appointed.

8.3.2 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 such *Notice in Writing* setting out particulars of this response and any relevant provisions of the *Contract Documents*.

8.3.3 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.

8.3.4 After a period of 10 *Working Days* following receipt of a responding party's *Notice in Writing* of reply under paragraph 8.3.2, 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 rules for mediation as provided in CCDC 40 in effect at the time of bid closing.

8.3.5 If the dispute has not been resolved at the mediation or within such further period as is agreed by the parties, the Project Mediator will terminate the mediated negotiations by giving *Notice in Writing* to the *Owner*, the *Contractor* and the *Consultant*.

8.3.6 By giving a *Notice in Writing* to the other party and the *Consultant*, not later than 10 *Working Days* after the date of termination of the mediated negotiations under paragraph 8.3.5, either party may refer the dispute to be finally resolved by arbitration under the rules of arbitration as provided in CCDC 40 in effect at the time of bid closing. The arbitration shall be conducted in the jurisdiction of the *Place of the Work*.

8.3.7 On expiration of the 10 *Working Days*, the arbitration agreement under paragraph 8.3.6 is not binding on the parties and, if a *Notice in Writing* is not given under paragraph 8.3.6 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.

8.3.8 If neither party, by *Notice in Writing*, given within 10 *Working Days* of the date of *Notice in Writing* requesting arbitration in paragraph 8.3.6, requires that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.3.6 shall be:

.1 held in abeyance until:

(1) *Ready-for-Takeover*,

(2) the *Contract* has been terminated, or

(3) the *Contractor* has abandoned the *Work*,

whichever is earlier; and

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.2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.3.6.

GC 8.4 RETENTION OF RIGHTS

8.4.1 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 *Notice in Writing* required under Part 8 of the General Conditions – DISPUTE RESOLUTION and has carried out the instructions as provided in paragraph 8.1.3 of GC 8.1 – AUTHORITY OF THE CONSULTANT.

8.4.2 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 8.3.6 of GC 8.3 – NEGOTIATION, MEDIATION AND ARBITRATION 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*, 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 or omissions in the *Contract Documents*; or
.2 acts or omissions by the *Owner*, the *Consultant*, *Other Contractors*, or their agents and employees.

9.1.2 Before commencing any work, the *Contractor* shall determine the location of all 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 making good such damage at the *Contractor*'s expense.

9.1.4 Should damage occur to the *Work* or the *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 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

9.2.1 For the purposes of applicable legislation related to toxic and hazardous substances, the *Owner* shall be deemed to have control and management of the *Place of the Work* with respect to existing conditions.

9.2.2 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.

9.2.3 The *Owner* shall take all reasonable steps to ensure that no person's exposure to any toxic or hazardous substance exceeds the time weighted levels prescribed by applicable legislation at the *Place of the Work* 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*.

9.2.4 Unless the *Contract* expressly provides otherwise, the *Owner* shall be responsible for taking all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to dispose of, store or otherwise render harmless any toxic or hazardous substance which was present at the *Place of the Work* prior to the *Contractor* commencing the *Work*.

9.2.5 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 brought to the *Place of the Work* by the *Contractor* or anyone for whom the *Contractor* is responsible and which were not disclosed by the *Owner* or which were disclosed but have not been dealt with as required under paragraph 9.2.4, the *Contractor* shall
.3 take all reasonable steps, including stopping the *Work*, to ensure that no person's exposure to any toxic or hazardous substance exceeds any applicable time weighted levels prescribed by applicable legislation at the *Place of the Work*, and
.4 immediately report the circumstances to the *Consultant* and the *Owner* in writing.

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9.2.6 If the *Owner* and the *Contractor* do not agree on the existence, significance of, or whether the toxic or hazardous substances were brought onto the *Place of the Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Owner* shall retain and pay for an independent qualified expert to investigate and determine such matters. The expert's report shall be delivered to the *Owner* and the *Contractor*.

9.2.7 If the *Owner* and the *Contractor* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substances were not brought onto the place of the *Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Owner* shall promptly at the *Owner's* own expense:

.1 take all steps as required under paragraph 9.2.4;

.2 reimburse the *Contractor* for the costs of all steps taken pursuant to paragraph 9.2.5;

.3 extend the *Contract Time* for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the expert referred to in 9.2.6 and reimburse the *Contractor* for reasonable costs incurred as a result of the delay; and

.4 indemnify the *Contractor* as required by GC 13.1 – INDEMNIFICATION.

9.2.8 If the *Owner* and the *Contractor* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substances were brought onto the place of the *Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Contractor* shall promptly at the *Contractor's* own expense:

.1 take all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to safely remove and dispose the toxic or hazardous substances;

.2 make good any damage to the *Work*, the *Owner*'s property or property adjacent to the place of the *Work* as provided in paragraph 9.1.3 of GC 9.1 – PROTECTION OF WORK AND PROPERTY;

.3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.2.6; and

.4 indemnify the *Owner* as required by GC 13.1 – INDEMNIFICATION.

9.2.9 If either party does not accept the expert's findings under paragraph 9.2.6, the disagreement shall be settled in accordance with Part 8 of the General Conditions – DISPUTE RESOLUTION. If such disagreement is not resolved promptly, the parties shall act immediately in accordance with the expert's determination and take the steps required by paragraph 9.2.7 or 9.2.8 it being understood that by so doing, neither party will jeopardize any claim that party may have to be reimbursed as provided by GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES.

GC 9.3 ARTIFACTS AND FOSSILS

9.3.1 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*.

9.3.2 The *Contractor* shall take all reasonable precautions to prevent removal or damage to discoveries as identified in paragraph 9.3.1, and shall advise the *Consultant* upon discovery of such items.

9.3.3 The *Consultant* will investigate the impact on the *Work* of the discoveries identified in paragraph 9.3.1. If conditions are found that would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Owner*, through the *Consultant*, 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 9.4 CONSTRUCTION SAFETY

9.4.1 The *Contractor* shall be responsible for establishing, initiating, maintaining, and supervising all health and safety precautions and programs in connection with the performance of the *Work* in accordance with the applicable health and safety legislation.

9.4.2 The *Owner* and the *Contractor* shall comply with all health and safety precautions and programs established at the *Place of the Work*.

9.4.3 The *Owner* and the *Contractor* shall comply with the rules, regulations and practices required by the applicable health and safety legislation.

9.4.4 The *Owner* shall cause the *Consultant*, *Other Contractors* and the *Owner*'s own forces to comply with all health and safety precautions and programs established by the *Contractor* at the *Place of the Work*.

9.4.5 Nothing in this *Contract* shall affect the determination of liability under the applicable health and safety legislation.

GC 9.5 MOULD

9.5.1 If the *Contractor* or the *Owner* observes or reasonably suspects the presence of mould at the *Place of the Work*, the remediation of which is not expressly part of the *Work*,

.1 the observing party shall promptly report the circumstances to the other party in writing,

.2 the *Contractor* shall promptly take all reasonable steps, including stopping the *Work* if necessary, to ensure that no person suffers injury, sickness or death and that no property is damaged as a result of exposure to or the presence of the mould, and

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.3 if the *Owner* and the *Contractor* do not agree on the existence, significance or cause of the mould or as to what steps need be taken to deal with it, the *Owner* shall retain and pay for an independent qualified expert to investigate and determine such matters. The expert's report shall be delivered to the *Owner* and the *Contractor*.

9.5.2 If the *Owner* and the *Contractor* agree, or if the expert referred to in paragraph 9.5.1.3 determines that the presence of mould was caused by the *Contractor*'s operations under the *Contract*, the *Contractor* shall promptly, at the *Contractor*'s own expense:

.1 take all reasonable and necessary steps to safely remediate or dispose of the mould,

.2 make good any damage to the *Work*, the *Owner*'s property or property adjacent to the *Place of the Work* as provided in paragraph 9.1.3 of GC 9.1 – PROTECTION OF WORK AND PROPERTY,

.3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.5.1.3, and

.4 indemnify the *Owner* as required by GC 13.1 – INDEMNIFICATION.

9.5.3 If the *Owner* and the *Contractor* agree, or if the expert referred to in paragraph 9.5.1.3 determines that the presence of mould was not caused by the *Contractor*'s operations under the *Contract*, the *Owner* shall promptly, at the *Owner*'s own expense:

.1 take all reasonable and necessary steps to safely remediate or dispose of the mould,

.2 reimburse the *Contractor* for the cost of taking the steps under paragraph 9.5.1.2 and making good any damage to the *Work* as provided in paragraph 9.1.4 of GC 9.1 – PROTECTION OF WORK AND PROPERTY,

.3 extend the *Contract Time* for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the expert referred to in paragraph 9.5.1.3 and reimburse the *Contractor* for reasonable costs incurred as a result of the delay, and

.4 indemnify the *Contractor* as required by GC 13.1 – INDEMNIFICATION.

9.5.4 If either party does not accept the expert's finding under paragraph 9.5.1.3, the disagreement shall be settled in accordance with Part 8 of the General Conditions – DISPUTE RESOLUTION. If such disagreement is not resolved promptly, the parties shall act immediately in accordance with the expert's determination and take the steps required by paragraphs 9.5.2 or 9.5.3, it being understood that by so doing neither party will jeopardize any claim the party may have to be reimbursed as provided by GC 9.5 – MOULD.

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 taxes and duties after the time of the 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 The *Owner* shall obtain and pay for development approvals, building permit, permanent easements, rights of servitude, and all other necessary approvals and permits, except for the permits and fees referred to in paragraph 10.2.3 or for which the *Contract Documents* specify as the responsibility of the *Contractor*.

10.2.3 The *Contractor* shall be responsible for the procurement of permits, licences, inspections, and certificates, which are necessary for the performance of the *Work* and customarily obtained by contractors in the jurisdiction of the *Place of the Work* after the issuance of the building permit. The *Contract Price* includes the cost of these permits, licences, inspections, and certificates, and their procurement.

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 advise the *Consultant* in writing requesting direction immediately upon such variance or change becoming known. The *Consultant* will issue the changes required to the *Contract Documents* as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 – CHANGE ORDER and GC 6.3 – CHANGE DIRECTIVE.

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10.2.6 If the *Contractor* fails to advise the *Consultant* in writing; 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 FOR A CHANGE IN CONTRACT PRICE.

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 physical model, plan or design of which was supplied to the *Contractor* as part of the *Contract*.

GC 10.4 WORKERS' COMPENSATION

10.4.1 Prior to commencing the *Work*, and again with the *Contractor*'s applications for payment, the *Contractor* shall provide evidence of compliance with workers' compensation legislation at the *Place of the Work*.

PART 11 INSURANCE

GC 11.1 INSURANCE

11.1.1 Without restricting the generality of GC 13.1 – INDEMNIFICATION, the *Contractor* shall provide, maintain and pay for the following insurance coverages, the requirements of which are specified in CCDC 41 'CCDC Insurance Requirements' in effect at the time of bid closing except as hereinafter provided:

.1 General liability insurance in the name of the *Contractor* and include, or in the case of a single, blanket policy, be endorsed to name, the *Owner* and the *Consultant* as insureds but only with respect to liability, other than legal liability arising out of their sole negligence, arising out of the operations of the *Contractor* with regard to the *Work*. General liability insurance shall be maintained from the date of commencement of the *Work* until one year from the date of *Ready-for-Takeover*. Liability coverage shall be provided for completed operations hazards from the date of *Ready-for-Takeover* on an ongoing basis for a period of 6 years following *Ready-for-Takeover*.

.2 Automobile Liability Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.

.3 Unmanned aerial vehicle aircraft, manned aircraft or watercraft Liability Insurance when owned or non-owned manned or unmanned aircraft or watercraft are used directly or indirectly in the performance of the *Work*.

.4 "Broad form" property insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. The "Broad form" property insurance shall be provided from the date of commencement of the *Work* until the earliest of:

(1) 10 calendar days after the date of *Ready-for-Takeover*;

(2) on the commencement of use or occupancy of any part or section of the *Work* unless such use or occupancy is for construction purposes, habitational, office, banking, convenience store under 465 square metres in area, or parking purposes, or for the installation, testing and commissioning of equipment forming part of the *Work*; and

(3) when left unattended for more than 30 consecutive calendar days or when construction activity has ceased for more than 30 consecutive calendar days.

.5 Boiler and machinery insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. The coverage shall be maintained continuously from commencement of use or operation of the boiler and machinery objects insured by the policy and until 10 calendar days after the date of *Ready-for-Takeover*.

.6 The "Broad form" property and boiler and machinery 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. In the event of loss or damage:

(1) 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

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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*;

(2) the *Contractor* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount 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 in accordance with the progress payment provisions. 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*; and

(3) to the *Work* arising from the work of the *Owner*, the *Owner*'s own forces or *Other Contractors*, the *Owner* shall, in accordance with the *Owner*'s obligations under the provisions relating to construction by the *Owner* or *Other Contractors*, pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as in accordance with the progress payment provisions.

.7 Contractors' Equipment Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.

.8 Contractors' Pollution Liability Insurance from the date of commencement of the *Work* until one year after the date of *Ready-for-Takeover*.

11.1.2 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 applicable to the *Work*.

11.1.3 The parties shall pay their share of the deductible amounts in direct proportion to their responsibility in regards to any loss for which the above policies are required to pay, except where such amounts may be excluded by the terms of the *Contract*.

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 cost from 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*.

11.1.6 If a revised version of CCDC 41 is published, which specifies reduced insurance requirements, the parties shall address such reduction, prior to the *Contractor*'s insurance policy becoming due for renewal, and record any agreement in a *Change Order*.

11.1.7 If a revised version of CCDC 41 is published, which specifies increased insurance requirements, the *Owner* may request the increased coverage from the *Contractor* by way of a *Change Order*.

11.1.8 A *Change Directive* shall not be used to direct a change in the insurance requirements in response to the revision of CCDC 41.

PART 12 OWNER TAKEOVER

GC 12.1 READY-FOR-TAKEOVER

12.1.1 The prerequisites to attaining *Ready-for-Takeover* of the *Work* are limited to the following:

.1 The *Consultant* has certified or verified the *Substantial Performance of the Work*.

.2 Evidence of compliance with the requirements for occupancy or occupancy permit as prescribed by the authorities having jurisdiction.

.3 Final cleaning and waste removal at the time of applying for *Ready-for-Takeover*, as required by the *Contract Documents*.

.4 The delivery to the *Owner* of such operations and maintenance documents reasonably necessary for immediate operation and maintenance, as required by the *Contract Documents*.

.5 Make available a copy of the as-built drawings completed to date on site.

.6 Startup, testing required for immediate occupancy, as required by the *Contract Documents*.

.7 Ability to secure access to the *Work* has been provided to the *Owner*, if required by the *Contract Documents*.

.8 Demonstration and training, as required by the *Contract Documents*, is scheduled by the *Contractor* acting reasonably.

12.1.2 If any prerequisites set forth in paragraphs 12.1.1.3 to 12.1.1.6 must be deferred because of conditions reasonably beyond the control of the *Contractor*, or by agreement between the *Owner* and the *Contractor* to do so, *Ready-for-Takeover* shall not be delayed.

12.1.3 When the *Contractor* considers that the *Work* is *Ready-for-Takeover*, the *Contractor* shall deliver to the *Consultant* and to the *Owner* a comprehensive list of items to be completed or corrected, together with a written application for *Ready-for-Takeover* for review. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.

12.1.4 The *Consultant* will review the *Work* to verify the validity of the application and will promptly, and in any event, no later than 10 calendar days after receipt of the *Contractor*'s list and application:

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.1 advise the *Contractor* in writing that the *Work* is not *Ready-for-Takeover* and give reasons why, or
.2 confirm the date of *Ready-for-Takeover* in writing to each of the *Owner* and the *Contractor*.

12.1.5 Immediately following the confirmation of the date of *Ready-for-Takeover*, the *Contractor*, in consultation with the *Consultant*, shall establish a reasonable date for finishing the *Work*.

12.1.6 The provision of GC 12.1 – READY-FOR-TAKEOVER shall be subject to GC 12.2 – EARLY OCCUPANCY BY THE OWNER.

GC 12.2 EARLY OCCUPANCY BY THE OWNER

12.2.1 The *Owner* may take occupancy of a part or the entirety of the *Work* before *Ready-for-Takeover* has been attained only as agreed by the *Contractor* which agreement shall not be unreasonably withheld.

12.2.2 The *Owner* shall not occupy a part or the entirety of the *Work* without prior approval by authorities having jurisdiction.

12.2.3 If the *Owner* takes occupancy of a part of the *Work* before *Ready-for-Takeover* has been attained:
.1 The part of the *Work* which is occupied shall be deemed to have been taken over by the *Owner* as from the date on which it is occupied.
.2 The *Contractor* shall cease to be liable for the care of such part as from this date, when responsibility shall pass to the *Owner*.
.3 The warranty period specified in paragraph 12.3.1 of GC 12.3 – WARRANTY for that part of the *Work* shall start from the date on which it is occupied.

12.2.4 If the *Owner* takes occupancy of the entirety of the *Work* before all the prerequisites are met as described in paragraph 12.1.1 of GC 12.1 – READY-FOR-TAKEOVER, the *Work* shall, subject to the requirements of the applicable lien legislation, be deemed to achieve *Ready-for-Takeover*. This shall not relieve the *Contractor*'s responsibility to complete the *Work* in a timely manner.

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 when *Ready-for-Takeover* has been attained.

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 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.

12.3.4 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 one year warranty period.

12.3.5 The *Contractor* shall correct or pay for damage resulting from corrections made under the requirements of paragraph 12.3.4.

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 responsibilities of the warrantor.

PART 13 INDEMNIFICATION AND WAIVER

GC 13.1 INDEMNIFICATION

13.1.1 Without restricting the parties' obligation to indemnify respecting toxic and hazardous substances, patent fees and defect in title claims all as described in paragraphs 13.1.4 and 13.1.5, the *Owner* and the *Contractor* shall each indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings whether in respect to losses suffered by them or in respect to claims by third parties that arise out of, or are attributable in any respect to their involvement as parties to this *Contract*, provided such claims are:
.1 caused by:
(1) the negligent acts or omissions of the party from whom indemnification is sought or anyone for whose negligent acts or omissions that party is liable, or
(2) a failure of the party to the *Contract* from whom indemnification is sought to fulfill its terms or conditions; and
.2 made by *Notice in Writing* within a period of 6 years from the *Ready-for-Takeover* date 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 parties expressly waive the right to indemnity for claims other than those provided for in this *Contract*.

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13.1.2 The obligation of either party to indemnify as set forth in paragraph 13.1.1 shall be limited as follows:

.1 In respect to losses suffered by the *Owner* and the *Contractor* for which insurance is to be provided by either party pursuant to GC 11.1 – INSURANCE, the minimum liability insurance limit for one occurrence, of the applicable insurance policy, as referred to in CCDC 41 in effect at the time of bid closing.

.2 In respect to losses suffered by the *Owner* and the *Contractor* for which insurance is not required to be provided by either party in accordance with GC 11.1 – INSURANCE, the greater of the *Contract Price* as recorded in Article A-4 – CONTRACT PRICE or $2,000,000, but in no event shall the sum be greater than $20,000,000.

.3 In respect to indemnification by a party against the other with respect to losses suffered by them, such obligation shall be restricted to direct loss and damage, and neither party shall have any liability to the other for indirect, consequential, punitive or exemplary damages.

.4 In respect to indemnification respecting claims by third parties, the obligation to indemnify is without limit.

13.1.3 The obligation of either party to indemnify the other as set forth in paragraphs 13.1.1 and 13.1.2 shall be inclusive of interest and all legal costs.

13.1.4 The *Owner* and the *Contractor* shall indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of their obligations described in GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES.

13.1.5 The *Owner* shall indemnify and hold harmless the *Contractor* from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings:

.1 as described in paragraph 10.3.2 of GC 10.3 – PATENT FEES, and

.2 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*.

13.1.6 In respect to any claim for indemnity or to be held harmless by the *Owner* or the *Contractor*:

.1 *Notice in Writing* of such claim shall be given within a reasonable time after the facts upon which such claim is based become known; and

.2 should any party be required as a result of its obligation to indemnify another to pay or satisfy a final order, judgment or award made against the party entitled by this contract to be indemnified, then the indemnifying party upon assuming all liability for any costs that might result shall have the right to appeal in the name of the party against whom such final order or judgment has been made until such rights of appeal have been exhausted.

GC 13.2 WAIVER OF CLAIMS

13.2.1 Subject to any lien legislation applicable to the *Place of the Work*, the *Contractor* waives and releases the *Owner* from all claims which the *Contractor* has or reasonably ought to have knowledge of that could be advanced by the *Contractor* against the *Owner* under the *Contract*, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the *Ready-for-Takeover* date, except as follows:

.1 claims arising prior to or on the *Ready-for-Takeover* date for which *Notice in Writing* of claim has been received by the *Owner* from the *Contractor* no later than 5 calendar days before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work* or 20 calendar days following the *Ready-for-Takeover* date, whichever is later;

.2 indemnification for claims advanced against the *Contractor* by third parties for which a right of indemnification may be asserted by the *Contractor* against the *Owner* pursuant to the provisions of this *Contract*;

.3 claims respecting toxic and hazardous substances, patent fees and defect in title matters for which a right of indemnity could be asserted by the *Contractor* pursuant to the provisions of paragraphs 13.1.4 or 13.1.5 of GC 13.1 – INDEMNIFICATION; and

.4 claims resulting from acts or omissions which occur after the *Ready-for-Takeover* date.

13.2.2 The *Contractor* waives and releases the *Owner* from all claims resulting from acts or omissions which occurred after the *Ready-for-Takeover* date except for:

.1 indemnification respecting third party claims, and claims respecting toxic and hazardous substances, patent fees and defect in title matters, all as referred in paragraphs 13.2.1.2 and 13.2.1.3; and

.2 claims for which *Notice in Writing* of claim has been received by the *Owner* from the *Contractor* within 395 calendar days following the *Ready-for-Takeover* date.

13.2.3 Subject to any lien legislation applicable to the *Place of the Work*, the *Owner* waives and releases the *Contractor* from all claims which the *Owner* has or reasonably ought to have knowledge of that could be advanced by the *Owner* against the *Contractor* under the *Contract*, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the *Ready-for-Takeover* date, except as follows:

.1 claims arising prior to or on the *Ready-for-Takeover* date for which *Notice in Writing* of claim has been received by the *Contractor* from the *Owner* no later than 20 calendar days following the *Ready-for-Takeover* date;

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.2 indemnification for claims advanced against the *Owner* by third parties for which a right of indemnification may be asserted by the *Owner* against the *Contractor* pursuant to the provisions of this *Contract*;
.3 claims respecting toxic and hazardous substances for which a right of indemnity could be asserted by the *Owner* against the *Contractor* pursuant to the provisions of paragraph 13.1.4 of GC 13.1 – INDEMNIFICATION;
.4 damages arising from the *Contractor*'s actions which result in substantial defects or deficiencies in the *Work*. "Substantial defects or deficiencies" mean 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*;
.5 claims arising pursuant to GC 12.3 – WARRANTY; and
.6 claims arising from acts or omissions which occur after the *Ready-for-Takeover* date.

13.2.4 Respecting claims arising upon substantial defects and deficiencies in the *Work*, as referenced in paragraph 13.2.3.4, and notwithstanding paragraph 13.2.3.5, the *Owner* waives and releases the *Contractor* from all claims except claims for which *Notice in Writing* of claim has been received by the *Contractor* from the *Owner* within a period of six years from the *Ready-for-Takeover* date, provided that any limitation statute of the Province or Territory of the *Place of the Work* permit such agreement. If the applicable limitation statute does not permit such agreement, the time within which any such claim may be brought shall be such shorter period as may be prescribed by any limitation statute of the Province or Territory of the *Place of the Work*.

13.2.5 The *Owner* waives and releases the *Contractor* from all claims arising from acts or omissions which occur after the *Ready-for-Takeover* date, except for:
.1 indemnification for claims advanced against the *Owner* by third parties, as referenced in paragraph 13.2.3.2;
.2 claims respecting toxic and hazardous substances for which a right of indemnity could be asserted by the *Owner* against the *Contractor*, as referenced in paragraph 13.2.3.3;
.3 claims arising under GC 12.3 – WARRANTY; and
.4 claims for which *Notice is Writing* has been received by the *Contractor* from the *Owner* within 395 calendar days following the *Ready-for-Takeover* date.

13.2.6 "*Notice in Writing* of claim" as provided for in GC 13.2 – WAIVER OF CLAIMS to preserve a claim or right of action which would otherwise, by the provisions of GC 13.2 – WAIVER OF CLAIMS, be deemed to be waived, must include the following:
.1 a clear and unequivocal statement of an intention to claim;
.2 a statement as to the nature of the claim and the grounds upon which the claim is based; and
.3 a statement of the estimated quantum of the claim.

13.2.7 A claim for lien asserted under the lien legislation prevailing at the *Place of the Work* shall qualify as notice of claim for the purposes of this *Contract*.

13.2.8 The party giving the *Notice in Writing* of claim as provided for in GC 13.2 – WAIVER OF CLAIMS shall submit within a reasonable time a detailed account of the amount claimed.

13.2.9 Where the event or series of events giving rise to a claim made under paragraphs 13.2.1 or 13.2.3 has a continuing effect, the detailed account submitted under paragraph 13.2.8 shall be considered to be an interim account and the party making the claim shall submit further interim accounts, at reasonable intervals, giving the accumulated amount of the claim and any further grounds upon which such claim is based. The party making the claim shall submit a final account after the end of the effects resulting from the event or series of events.

13.2.10 Nothing in GC 13.2 – WAIVER OF CLAIMS shall be deemed to affect the rights of the parties under any lien legislation or limitations legislation prevailing at the *Place of the Work*.

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CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE
CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE

CCDC 41
CCDC INSURANCE REQUIREMENTS

PUBLICATION DATE: December 14, 2020

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

These Supplementary Conditions amend the Stipulated Price Contract – CCDC 2 – 2020. Where a portion of the Contract is modified or deleted by these Supplementary General Conditions, the unaltered portions of the Contract shall remain in effect.

AGREEMENT BETWEEN *OWNER* AND CONTRACTOR

Page 4, after Article A-8 insert the following new Articles A-9 and A-10:

"ARTICLE A-9 SEVERABILITY

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

ARTICLE A-10 TIME OF THE ESSENCE

10.1 Time shall be deemed to be of the essence of the *Contract*."

DEFINITIONS

Page 6, Add the following new Definitions:

Approved or Approval

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

Period of Delay

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

Site

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

Total Amount Payable

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

GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

PART 2 – ADMINISTRATION OF THE CONTRACT

GC 2.3 REVIEW AND INSPECTION OF THE WORK

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

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

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

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

PART 3 – EXECUTION OF THE *WORK*

GC 3.4 CONSTRUCTION SCHEDULE

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

Page 12, add new clause 3.4.2 as follows:

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

GC 3.5 SUPERVISION

Page 12, add new clause 3.5.3 as follows:

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

GC 3.7 LABOUR AND PRODUCTS

Page 12, delete clause 3.7.2 and replace with the following:

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

GC 3.8 SHOP DRAWINGS

Page 12, delete Clause 3.8.2 and replace with the following:

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

PART 4 - ALLOWANCES

GC 4.1 CASH ALLOWANCES

Page 13, delete Clause 4.1.7 and replace with the following:

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

Page 13, add the following new Clause:

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

PART 5 - PAYMENT

GC 5.4 SUBSTANTIAL PERFORMANCE OF THE *WORK* AND PAYMENT OF HOLDBACK

Page 14, after Clause 5.4.1.2, add the following:

"5.4.1.3 Submit a certificate by lien search to the Owner by a solicitor licensed to practice law in the Province of the *Place of the Work*, certifying that no lien associated with the Work exists against the *Owner's* property or *Work*;

5.4.1.4 Submit a clearance letter from the Workers' Compensation Board or provincially equivalent regulatory body; and

5.4.1.5 All such documents shall be dated not earlier than the expiry of the lien period as stipulated by the lien legislation in the *Place of the Work*."

5.4.1.6 The *Consultant* will provide an electronic copy of the Certificate of *Substantial Performance* and instruct the *Contractor* to post the certificate at the Site and to website indicated by the lien legislation of the *Place of the Work*. "

Page 14, delete Clause 5.4.3 in its entirety.

Page 14, after Clause 5.4.4, add the following:

"5.4.4.1 If, within [sixty (60)] [thirty (30)] calendar days after the issue of the certificate of *Substantial Performance of the Work*, the *Contractor* has not corrected all the documented deficiencies, the *Owner* shall retain sufficient monies, as determined by the Consultant, to cover the cost of completing said deficiencies. These monies shall be held in addition to holdback monies retained in accordance with the provisions of the Contract and subject to the terms of the lien legislation in the Place of Work."

GC 5.5 FINAL PAYMENT

Page 15, Clause 5.5.4, in line 2, change "5 calendar days" to "20 calendar days".

PART 6 – CHANGES IN THE *WORK*

Page 15, add new clause 6.1.1.3 as follows:

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

GC 6.2 CHANGE ORDER

Page 15, after Clause 6.2.2, add the following:

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

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

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

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

.1 Labour rates, excluding operators.

.2 Equipment rates including operators.

.3 Supervisory staff rates.

.4 *Subcontractor* and material or equipment invoices where applicable.

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

6.2.5 No compensation for extra *Work* or material shall be allowed unless the *Consultant* issues a *Notice in Writing* authorizing such *Work* or material to be ordered in the form of a *Change Order*, *Change Directive,* or *Supplemental Instruction*.

6.2.6 No compensation will be allowed for the cost of repairs to *Construction Equipment* of any kind on the *Site* except as directed by the *Consultant* in writing.

6.2.7 The price applicable to any *Work* deleted from the *Contract*, shall be deducted from the *Contract Price* and shall be mutually agreed upon by the *Contractor* and the *Consultant*. The price shall be comparable to prices quoted on *Work* of similar nature.

GC 6.4 – CONCEALED OR UNKNOWN CONDITIONS

Page 17, add a new clause 6.4.5 as follows:

"6.4.5 If the *Contractor* was given access to the *Place of the Work* and/or professional reports relating thereto (including, without limitation, environmental, geotechnical, and structural reports) prior to the submission of the bid on which the *Contract* was awarded, then the *Contractor* confirms that they have investigated the *Place of the Work* and, in doing so, applied to that investigation the degree of care and skill required. In those circumstances, notwithstanding the provisions of clause 6.4.1, the *Contractor* is not entitled to an adjustment to the *Contract Price* or to an extension of the *Contract Time* for conditions which could reasonably have been ascertained by the Contractor by such investigation, or which could have been reasonably inferred from the material provided with the *Contract Documents*. In those circumstances, should a claim arise, the *Contractor* will have the burden of establishing that it could not have discovered the materially different conditions from an investigation because of restrictions placed on its access or inferred the existence of the conditions from the material provided with the *Contract Documents*."

GC 6.5 DELAYS

Page 18, after Clause 6.5.5, add the following new Clauses:

"6.5.6 Should the *Contractor* fail to attain *Ready-for-Takeover* for the Work by the date indicated in Article A-1, Clause 1.3 in the AGREEMENT BETWEEN OWNER AND CONTRACTOR, the period of time from this agreed date to the actual date when the Consultant confirms the Work is *Ready-for-Takeover*, shall be termed the Period of Delay.

6.5.7 In the event there is a Period of Delay, the *Contractor* shall be liable for and shall pay to the *Owner* the cost of continuance of supervision during the Period of Delay, and all additional fees, disbursements and costs incurred by the Owner as a result of the Period of Delay, such charges hereby termed as Delay Charges. The *Owner* may deduct the amount of such Delay Charges from further progress payments."

GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

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

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

PART 9 - PROTECTION OF PERSONS AND PROPERTY

GC 9.4 – CONSTRUCTION SAFETY

Page 22, after GC 9.4.5, add the following:

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

PART 10 - GOVERNING REGULATIONS

GC 10.1 TAXES AND DUTIES

Page 23, after Clause 10.1.2, add new Clause 10.1.3 as follows:

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

PART 12 – *OWNER* TAKEOVER

Page 25, add new clause 12.1.1.9 and 12.1.1.10 as follows:

.9 Commissioning reports as in Section 01 91 13.

.10 Any other documentation identified as a closeout or Ready-for-Takeover document as specified in Section 01 78 00.

GC 12.3 WARRANTY

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

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

PART 13 – INDEMNIFICATION AND WAIVER

GC 13.1 INDEMNIFICATION

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

PART 14 – CONTRACT SECURITY

GC 14.1 CONTRACT SECURITY

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

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

14.2 The contract security will be retained until the expiration of the warranty period."

END OF SECTION

PART 1 - GENERAL

1.1 Work of the Project

.1 The project is located at the Parrsboro well control building, south of and accessible from Prospect Road.

.2 The project generally involves the addition of two (2) Owner-supplied UV disinfection systems. The Work includes but is not necessarily limited to the supply and installation of new piping, valves, insulation, instruments, control equipment, panels, conduits and cabling as well as the installation of the Owner-supplied UV system and all Work shown on the Project Drawings and specified herein.

1.2 Division of Work

.1 Division of the Work among Subcontractors and Suppliers is solely Contractor's responsibility. Consultant and Owner assume no responsibility to act as an arbiter to establish subcontract limits between Sections or Divisions of the Work.

1.3 Specification Language and Style

.1 These specifications are written in the imperative mood and in streamlined form. The imperative language is directed to Contractor, unless stated otherwise.

.2 Fulfill and perform all indicated requirements whether stated imperatively or otherwise.

.3 When used in the context of a Product, read the word “provide” to mean “supply and install to result in a complete installation ready for its intended use”.

1.4 Contract Documents for Construction Purposes

.1 Owner will supply Contractor with a complete set of Contract Documents in electronic form before commencement of the Work. Contractor may print hard copies for construction purposes as required.

1.5 Documents At The Site

.1 Keep the following documents at Place of the Work, stored securely and in good order and available to Owner and Consultant:

- .1 Current Contract Documents, including Drawings, Specifications and addenda.
- .2 Change Orders, Change Directives, and Supplementary Instructions.
- .3 Reviewed Shop Drawings, Product data and

samples.
.4 Field test reports and records.
.5 Construction progress schedule.
.6 Meeting minutes.
.7 Manufacturer's certifications.
.8 Permits, inspection certificates, and other documents required by authorities having jurisdiction.
.9 Current as-built drawings.
.10 Safety Data Sheets (SDS) for all controlled Products.
.11 Any other documents as stipulated as site documents at the construction start-up meeting.

1.6 Contractor's Use of Premises

.1 Other contractors and the Owner's maintenance staff will be on site. Coordinate the use of the site with other contractors. Should a conflict in the use of the site, promptly report this to the Consultant who will provide a resolution.

.2 Confine Construction Equipment, Temporary Work, storage of Products, waste products and debris, and all other construction operations to limits required by laws, ordinances, permits, and Contract Documents, whichever is most restrictive. Do not unreasonably encumber Place of the Work.

1.7 References and Codes

.1 Perform Work in accordance with the latest edition of the National Building Code (NBC), National Fire Code (NFC), National Plumbing Code (NPC), Canadian Electrical Code, and/or any other code of provincial or local regulations provided that in any case of conflict or discrepancy the more stringent requirement governs.

.2 Reference has been made to certain Domestic, National and International Standards throughout the various sections of the Specification contained herein. These Standards will be considered an integral part thereof and shall be read in conjunction with the Drawings and Specifications as if they were reproduced herein. Be completely familiar with their contents and requirements.

1.8 Assistance to The Consultant and The Consultant'

.1 During the continuance of the Contract, provide necessary labour and tools to assist the Consultant's authorized representative in measuring, checking, testing and examining the Work and for the setting out and measurement of the Works, the cost of all such being deemed to be covered by and included in the Contract Price.

1.9 Owner-Supplied Products

.1 The following products have been pre-purchased by the Owner and will be issued to the Contractor at a time agreeable to the Contractor:
.1 Two (2) UV disinfection systems

.2 The Contractor will be responsible for unloading at *site*, insuring, protecting the equipment until the equipment is ready for installation.

.3 Shop drawings are available for viewing upon request to the Consultant. Information contained in the shop drawings is to be considered supplemental to the contract documents.

.4 Become thoroughly familiar with all the requirements of the Owner-supplied equipment by careful study of the equipment specifications, shop drawings, other pertinent information, and by direct communication with the named suppliers. No extra payment will be made to the Contractor for any additional *Work* in connection with the proper installation, testing and operation of Owner-supplied equipment, necessitated by the Contractor's failure to ascertain the requirements (both direct and ancillary) for this equipment prior to submission of the tender.

.5 Ascertain from the equipment supplier the full extent of field work in accordance with the manufacturer's instructions and obtain all details, dimensions and other information necessary for the complete installation.

1.10 List of Drawings

Drawing #	Drawing Name
Cover Sheet	
000	Site Location Plan and Drawing List
Process	
P01	Piping Layout
Electrical	
E01	Plan, details, schedule, block diagram and legend
E02	Electrical & Instrumentation Specifications

PART 2 - PRODUCTS

.1 Not Used

.1 Not applicable

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Restriction on Use of Premises

.1 This subsection identifies restrictions that may impact the scheduling or execution of the Work. This does not purport to identify all potential disruptions, but rather it is meant to assist the Contractor to understand the project.

.2 Be fully aware that the Owner will periodically occupy premises during the construction period for execution of normal operations. Co-operate with Owner in scheduling work to minimize conflict and to facilitate Owner's operation and maintenance activities.

.3 Work of this Contract is located in an area where normal working hours are:
- .1 7:30am to 4:30pm, Monday to Friday inclusive.
- .2 Work performed outside these hours require approval by the Owner. Request approval in writing at least 48 hours in advance

.4 Make all reasonable efforts to provide access by the Owner's personnel to areas of the existing building. Temporary gravels, walkways, handrails, markers and other means will be taken to provide safe, clean access to all areas requiring routine access.

.5 The building houses equipment that supports a fully functional water treatment facility. Working areas must remain reasonably clean and attention to dust control and prevention of excessive debris must be paid.

.6 In general, the facility must remain functional throughout all stages of Work. From time to time, pre-planned disruptions to process operations for periods of eight (8) hours will be permitted to accommodate tie-ins and other Work. A shut down of eight hours or more will require significant coordination with the Owner.

1.2 Work Sequence

.1 Schedule and construct Work in stages to accommodate Owner's intermittent use of premises during construction.
- .1 Schedule and construct Work in stages to provide for continuous public usage. Do not close off public usage of facilities until use of one stage of Work will provide alternate usage.

1.3 Restricted Hours of Work In Occupied Facilities

.1 As soon as it is practicable, in any case not later than two (2) week(s) after the start of the Contract, submit to the Consultant for review and approval, a program and construction schedule showing the order of procedure, significant Contract dates, and proposed method to carry out and complete the Work within time period required by Contract Documents.

.2 Provide information regarding the execution of the Work and of the equipment temporary works, and labour which the Contractor intends to supply, use or construct as the case may be.

.3 Construction schedule to be standard "bar" type, showing commencement, duration and completion of activities of all trades and suppliers involved.

.4 The construction schedule is subject to review by Consultant. Revise and resubmit as directed.

.5 Construction schedule to identify activities and work of other contractors for full execution and coordination of the Work.

.6 Update schedules periodically and submit updated construction schedule two (2) days prior to routine construction meetings held with Owner and Consultant. Where work has fallen behind the original schedule times, indicate methods proposed to correct such loss of time, to maintain the stated Completion Time.

.7 Commissioning schedule:
.1 As specified in Section 01 91 13.

1.4 Noise and Vibration

.1 Operate construction equipment such that there is a minimum amount of noise and vibration. Should excessive noise and vibration be caused, at own expense, rectify the same to the approval of the Consultant.

1.5 Maintaining Life Safety Systems in Occupied Facilities

.1 Maintain operational life safety systems and public access to exits in occupied areas during all stages of the Work.

.2 Determine nature and exact locations of existing fire and smoke sensors prior to the commencement of the Work. Avoid direct or indirect jarring while working in adjacent areas and exercise caution to avoid triggering these devices.

.3 Be responsible for costs incurred by Owner on account of

false fire alarms activated as a result of the execution of the Work without adequate precautions

PART 2 - PRODUCTS

.1 Not Used
.1 Not applicable

PART 3 - EXECUTION

.1 Not Used
.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Definition

.1 In this Section “Substitution” means a Product, a manufacturer, or both, not originally specified in Contract Documents by proprietary name but proposed for use by Contractor in place of a Product, a manufacturer, or both, specified by proprietary.

1.2 Equivalents and Alternates

.1 Where any particular brand of manufactured article is described or specified, it is to be regarded as a standard of acceptance but another brand of equivalent quality and function may be accepted at the discretion of the Consultant.

.2 When the Owner is prepared to permit the use of a non-equivalent brand of manufactured article as an alternative to any specified brand of manufactured article, it may be used at the discretion of the Consultant but only after price adjustments have been negotiated and approved by the Consultant. No extra fees will be charged for approved equivalents.

.3 If the suggested alternative requires modifications, adjustments or additions to the specified Works, submit to the Consultant, drawings and specifications for these modifications, adjustments or additions in the same detail as presented in the Contract. Approval in principle by the Consultant of these modifications, adjustments or additions in no way relieves the Contractor of obligations or liabilities under the Contract to provide for finished piece of Work complete and operational in all essentials.

.4 No change or substitution can be made without the written consent of the Consultant.

.5 The Consultant will record the time required to evaluate equivalents and alternates proposed by the Contractor including making changes to the Contract Documents occasioned thereby. Whether or not the Consultant accepts a proposed substitute, reimburse the Owner for the charges of the Consultant for evaluating any proposed substitute.

1.3 Substitution Procedures – Tender Phase

.1 No change in the specification will be made prior to the acceptance of the tenders.

1.4 Substitution Procedures – Construction Phase

.1 Contractor may propose a Substitution wherever a Product or manufacturer is specified by proprietary name(s), unless there is accompanying language indicating that Substitutions will not be considered.

.2 Contractor may propose a Substitution wherever a Product or manufacturer is specified by proprietary name(s) and accompanied by language such as "or equal", "or approved equal", or other similar words. Do not construe such language as an invitation to unilaterally provide a Substitution without Consultant's prior acceptance in writing. Do not order or install any Substitution without a Supplemental Instruction, Change Order, or an approved shop drawing that clearly indicates the product shown is a substitution from one that was specified in the Project Documents.

.3 Provided a proposed Substitution submission includes all of the information specified in this Section under Submission Requirements For Proposed Substitutions, Consultant will promptly review and accept or reject the proposed Substitution.

.4 Consultant may accept a Substitution if satisfied that:\
.1 the proposed substitute Product is the same type as, is capable of performing the same functions as, interfaces with adjacent Work the same as, and meets or exceeds the standard of quality, performance and, if applicable, appearance and maintenance considerations, of the specified Product,
.2 the proposed substitute manufacturer has capabilities comparable to the specified manufacturer, and
.3 the Substitution provides a benefit to Owner.

.5 If Contractor fails to order a specified Product or order a Product by a specified manufacturer in adequate time to meet Contractor's construction schedule, Consultant will not consider that a valid reason to accept a Substitution.

.6 If Consultant accepts a Substitution and subject to Owner's agreement, the change in the Work will be documented in the form of either a Supplemental Instruction or Change Order as specified in Section 01 26 00 – Contract Modification Procedures.

.7 If a Substitution is accepted in the form of a Supplemental Instruction or Change Order, Contractor shall not revert to an originally specified Product or manufacturer without Consultant's prior written acceptance.

1.5 Submission Requirements for Proposed Substitutions

.1 Include with each proposed Substitution the following information:

.1 Identification of the Substitution, including product name and manufacturer's name, address, telephone numbers, and website.

.2 Reason(s) for proposing the Substitution.

.3 A statement verifying that the Substitution will not affect the Contract Price and Contract Time or, if applicable, the amount and extent of a proposed increase or decrease in Contract Price and Contract Time on account of the Substitution.

.4 A statement verifying that the Substitution will not affect the performance or warranty of other parts of the Work.

.5 Manufacturer's Product literature for the Substitution, including material descriptions, compliance with applicable codes and reference standards, performance and test data, compatibility with contiguous materials and systems, and environmental considerations.

.6 Product samples as applicable.

.7 A summarized comparison of the physical properties and performance characteristics of the specified Product and the Substitution, with any significant variations clearly highlighted.

.8 Availability of maintenance services and sources of replacement materials and parts for the Substitution, as applicable, including associated costs and time frames.

.9 If applicable, estimated life cycle cost savings resulting from the Substitution.

.10 Details of other projects and applications where the Substitution has been used.

.11 Identification of any consequential changes in the Work to accommodate the Substitution and any consequential effects on the performance of the Work as a whole. A later claim for an increase to the Contract Price or Contract Time for other changes in the Work attributable to the Substitution will not be considered.

PART 2 - PRODUCTS

.1 Not Used

.1 Not applicable

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Schedule of Labour Rates

.1 Prior to the first application for payment, submit for the Consultant's review a schedule of labour rates for all trades and classifications of trades, such as journeymen, apprentices, and foremen that will be employed in the Work. Provide a breakdown of payroll burden component of labour rates.

.2 Labour rates shall reflect the salaries, wages, and benefits paid to personnel in the direct employ of the Contractor, Subcontractors, and sub-Subcontractors, stated as hourly rates, that will be used when:
- .1 Preparing price quotations for Change Orders, and
- .2 Determining the cost of Work attributable to Change Directives.

.3 Labour rates stated in the schedule of labour rates shall be consistent with rates that will actually be paid, and payroll burden costs that will actually be incurred, in the normal performance of the Work, during regular working hours. Labour rates shall not include any additional overhead and profit component.
- .1 Where collective agreements apply, the labour rates shall not exceed those established by collective agreement.
- .2 Obtain the Owner's written acceptance of the schedule of labour rates before submitting the first Change Order quotation.
- .3 Accepted schedule of labour rates will be used solely for evaluating Change Order quotations and cost of performing Work attributable to Change Directives.

.4 The Contractor may request amendments to the accepted schedule of labour rates if changes in the labour rates that will actually be paid, or payroll burden cost that will actually be incurred, in the normal performance of the Work can be demonstrated. Obtain the Owner's written acceptance of such changes.

1.2 Schedule of Equipment Rates

.1 Equipment rates shall reflect the rates that will be used when:
- .1 preparing price quotations for Change Orders, and
- .2 Determining the cost of Work attributable to Change Directives.

.2 Equipment rates stated in the schedule to be consistent with local equipment rental market rates and shall not include any additional overhead and profit component.

.3 Obtain the Owner's written acceptance of the schedule of equipment rates before submitting the first Change Order quotation.

.4 Accepted schedule of equipment rates will be used solely for evaluating Change Order quotations and cost of performing Work attributable to Change Directives.

.5 The Contractor may request amendments to the accepted schedule of equipment rates if changes in local equipment rental market rates can be demonstrated. Obtain the Owner's written acceptance of such changes.

1.3 Valuation Of Changes Based on Agreed Unit Prices

.1 The Consultant may, at the outset of the Contract or at any other time, request the Contractor to submit unit prices anticipated to be required in valuing changes in the Work.

.2 Submit such unit prices promptly upon request.

.3 The unit prices shall be valid for a specified duration.

.4 The unit prices shall exclude all fees for overhead and profit and shall be subject to the percentage fees specified in Section 00 73 00 – Supplementary General Conditions.

.5 The Consultant will evaluate the Contractor's quoted unit prices and, if accepted by the Owner in writing, the agreed unit prices shall be used to value subsequent proposed changes in the Work wherever they are applicable.

1.4 Method of Contract Price Adjustment – Change Orders

.1 Unless otherwise agreed, the adjustment of the Contract Price on account of a proposed change in the Work shall be based on a quotation for a fixed price increase or decrease to the Contract Price regardless of the Contractor's actual expenditures and savings.

1.5 Change Order Procedures

.1 Upon issuance by the Consultant to the Contractor of a proposed change in the Work, and unless otherwise requested in the proposed change or unless otherwise agreed:

.1 Submit to the Consultant a fixed price quotation for

the proposed change in the Work within seven (7) days after receipt of the proposed change in the Work.

.2 If requested in the proposed change, provide a detailed breakdown of the price quotation including the following to the extent applicable, with appropriate supporting documentation:

.1 Estimated labour costs, including hours and applicable hourly rates based on the accepted schedule of labour rates.

.2 Estimated Product costs, including Supplier quotations, estimated quantities and unit prices.

.3 Estimated Construction Equipment costs.

.4 Enumeration of all other estimated costs included in the price quotation.

.5 Estimated credit amounts for labour and Products not required on account of the proposed change.

.6 Fees, not exceeding the applicable percentages for overhead and profit as specified in Section 00 73 00 – Supplementary General Conditions.

.7 Where applicable, Subcontractor quotations, also including a detailed breakdown of all of the above.

.2 Include in the quotation the increase or decrease to the Contract Time, if any, for the proposed change, stated in number of days.

.3 Include in the quotation the number of days for which the quotation is valid.

.4 The quotation will be evaluated by the Consultant and the Owner and, if accepted by the Owner, be documented in the form of a signed Change Order.

1.6 Fees For Overhead and Profit – Change Orders and Change Directives

.1 Where the Contractor's price quotation for a Change Order results in a net increase to the Contract Price, the Contractor's entitlement to a fee for overhead and profit in the quotation shall be as set forth in Section 00 73 00 – Supplementary General Conditions.

.2 Where a Subcontractor's price quotation for a Change Order results in a net increase to the Subcontractor's contract price, the Subcontractor's entitlement to a fee for overhead and profit in the quotation shall be as set forth in Section 00 73 00

– Supplementary General Conditions.

.3 Where the Contractor's or a Subcontractor's price quotation for a Change Order results in a net decrease in price before adjustment for fees for overhead and profit, such a price quotation shall be for the net decrease without any adjustment for fees for overhead and profit.

.4 Where a Change Directive results in net savings on account of Work not required to be performed and a net decrease in the Contractor's or Subcontractor's cost, the net savings to the Contractor or Subcontractor shall be calculated without any adjustment for fees for overhead and profit.

.5 When a Change Directive is ultimately recorded as a Change Order, there shall be no additional entitlement to fees for overhead and profit beyond those specified in this article.

1.7 Change Directive Procedures

.1 If a Change Directive is issued for a change in the Work for which a proposed change was previously issued, but no Change Order has yet been signed, the Change Directive shall cancel the proposed change and any Contractor quotations related to that change in the Work.

.2 When proceeding with a change in the Work under a Change Directive, keep accurate records of daily time sheets for labour and Construction Equipment, and invoices for Product and Construction Equipment costs. Submit such records to the Consultant daily, until the Change Order superseding the Change Directive is issued.

1.8 Supplemental Instructions

.1 The Consultant may issue Supplemental Instructions to provide clarifications to the Contract Documents, provide additional information, or make minor variations in the Work not involving adjustment in the Contract Price or Contract Time.

.2 If the Contractor considers a Supplemental Instruction to require an adjustment in Contract Price or Contract Time, the Contractor shall promptly notify the Consultant and the Owner in writing and shall not proceed with any Work related to the Supplemental Instruction pending receipt of a Change Order, a Change Directive, or, in accordance with the dispute resolution provisions of the General Conditions of Contract, a Notice in Writing of a dispute and instructions to proceed.

PART 2 - PRODUCTS

.1 Not Used

.1 Not applicable

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Schedule Of Values

.1 Prior to the first application for payment, submit for Consultant's review an initial schedule of values. Modify the initial schedule of values if and as requested by Consultant. Obtain Consultant's written acceptance of the initial schedule of values prior to the first application for payment.

.2 Together with the first and all subsequent applications for payment, submit updated versions of the schedule of values to indicate the values, to the date of application for payment, of Work performed and Products delivered to Place of the Work.

.3 Provide the schedule of values in an electronic spreadsheet format that provides for inclusion of the following information:

- .1 Identifying information including title and location of the Work, name of Contractor, number and date of application for payment, and period covered by the application for payment.

.4 A Work breakdown structure that is sufficiently detailed and comprehensive to facilitate Consultant's evaluation of applications for payment at an appropriate level of detail.

.5 Provisions for approved Change Orders so that the breakdown amounts indicated in the schedule of values aggregate to the current total Contract Price. Also provide for indicating the estimated value of Change Directives within the schedule of values, separately from the current total Contract Price.

.6 For each item in the Work breakdown structure, provide as a minimum the following information, under headings as indicated:

- .1 Breakdown Amount: A dollar amount, including an appropriate pro rata portion of Contactor's overhead and profit.
- .2 Performed to Date: The value of Work performed and Products delivered to Place of the Work up to the date of the application for payment, stated as a percentage of the Contract Price and in dollars.
- .3 Previously Performed: The value of Work performed and Products delivered to the Place of the Work for which payment has been previously certified, stated in dollars.

.4 Current Period: The value of Work performed and Products delivered to Place of the Work for which Contractor is currently applying for payment, stated in dollars.

.5 Balance to Complete: The value of Work not yet performed and Products not yet delivered to Place of the Work, stated in dollars.

1.2 Workers' Compensation Clearance

.1 Submit proof of workers' compensation clearance with each application for payment.

1.3 Statutory Declarations

.1 Submit a statutory declaration in the form of CCDC 9A – Statutory Declaration of Progress Payment Distribution by Contractor with each application for payment except the first.

1.4 Payment For Products Stored Off Site

.1 Owner may, due to extraordinary circumstances and at Owner's sole discretion, make payments for Products delivered to and stored at a location other than Place of the Work, subject to:

.1 A request submitted by Contractor in writing, with appropriate justification, and

.2 Whatever conditions Owner or Consultant may establish for such payments, as required to protect Owner's interests.

PART 2 - PRODUCTS

.1 NOT USED

.1 Not applicable

PART 3 - EXECUTION

.1 NOT USED

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Construction Start-Up Meeting

.1 Within the notice of intent to award the Consultant will establish the time and location of a construction start-up meeting to review and discuss administrative procedures and responsibilities. Where possible, the Consultant will notify Contractor at least five (5) Working Days before the meeting.

.2 Senior representatives of Owner, Consultant, subconsultants (as applicable), and Contractor, including Contractor's project manager and site superintendent, and major Subcontractors, shall be in attendance.

.3 Confirm attendance of the parties associated with the Contractor's forces listed above. The Consultant will chair the preconstruction meeting. The Contractor will be responsible for all subsequent construction progress meeting as stipulated in subsection 1.2 herein and record and distribute the minutes.

.4 Agenda will include the following:
- .1 Appointment of official representatives of Owner, Contractor, Subcontractors, Consultant, and subconsultants.
- .2 Project communications.
- .3 Contract Documents for construction purposes.
- .4 Documents at the site.
- .5 Contractor's use of premises.
- .6 Owner-supplied Products.
- .7 Work restrictions.
- .8 Substitution procedures.
- .9 Contract modification procedures.
- .10 Payment procedures.
- .11 Construction progress meetings.
- .12 Construction progress schedule, including long lead time items.
- .13 Submittals schedule and procedures.
- .14 Any special procedures.
- .15 Quality requirements, including testing and inspection procedures.
- .16 Contractor's mobilization.
- .17 Temporary utilities.
- .18 Existing utility services.
- .19 Construction facilities.
- .20 Temporary barriers and enclosures.
- .21 Site safety issues.

.22 Other business.
.23 Field engineering and layout of Work.
.24 Site safety.
.25 Cleaning and waste management.
.26 Closeout procedures and submittals.
.27 Commissioning.
.28 Other items.

1.2 Construction Progress Meetings

.1 Schedule regular bi-weekly construction progress meetings for the duration of the Work. Prepare meeting agendas, chair the meetings, and record and distribute the minutes.

.2 Arrange for and provide physical space for meetings.

.3 Record in the meeting minutes significant decisions and identify action items and action dates by attendees or the parties they represent.

.4 Distribute copies of minutes within three (3) Working Days after each meeting to meeting attendees and any affected parties who may not be in attendance.

.5 Arrange for the attendance of Subcontractors as and when appropriate to the progress of the Work.

.6 Agenda for each meeting shall include the following, as a minimum:
.1 Approval of minutes of previous meeting.
.2 Work progress since previous meeting.
.3 Field observations, including any problems, difficulties, or concerns.
.4 Construction progress schedule.
.5 Submittals schedule.
.6 Proposed changes in the Work.
.7 Requests for information

PART 2 - PRODUCTS

.1 Not Used
.1 Not applicable

PART 3 - EXECUTION

.1 Not Used
.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Summary

.1 This Section specifies Contractor's responsibilities for preparation and submission of schedules and other documentation related to tracking construction progress.

.2 The purpose of submitting progress schedules is to:
- .1 Inform Owner and Consultant of actual progress versus planned progress, and
- .2 Provide assurance that scheduling issues are being proactively identified and addressed in a timely manner, and that planned progress is being maintained as closely as possible.

1.2 Construction Progress Schedule

.1 Format and Content:
- .1 Prepare schedule in the form of a Gantt chart using appropriate scheduling software.
- .2 Consultant will review format and content of initial schedule and request necessary changes, if any, within five (5) Working Days after receipt.
- .3 Provide a Work breakdown structure identifying key activities and major milestones, including long delivery Products, inspection and testing activities, demonstration and training activities, and similar items, at a sufficient level of detail to effectively manage construction progress.
- .4 Provide an updated schedule with each progress claim. Claims will not be certified until an updated progress schedule showing current progress in the form of percent complete is submitted and accepted by the Consultant.
- .5 Indicate milestone date[s] for Ready-for-Takeover and Substantial Performance of the Work.

.2 If changes are required, resubmit finalized initial schedule within five (5) Working Days after return of review copy.

.3 Submit updated progress schedule indicating actual and projected start and finish dates with report date line and progress, activity relationships, critical path, float, and baseline comparison to current progress.

1.3 Submittals Schedule

.1 Format and Content:
- .1 Prepare schedule identifying all required Shop

Drawing, Product data, and sample submissions, including samples required for testing.

.2 Prepare schedule in electronic format.

.3 Provide a separate line for each required submittal, organized by Specifications section names and numbers, and further broken down by individual Products and systems as required.

.4 For each required submittal, show planned earliest date for initial submittal and latest date for return of reviewed submittal without causing delay].

.2 Submission:

.1 Submit initial schedule to Consultant within ten (10) Working Days after Contract award.

.2 Submit schedule via e-mail as .pdf or .xlcx files.

.3 Consultant will review format and content of initial schedule and request necessary changes, if any, within five (5) Working Days after receipt.

.4 If changes are required, resubmit finalized schedule within five (5) Working Days after return of review copy. Allow time in schedule for resubmission of submittals, should resubmission be necessary.

.5 Submit updated submittals schedule monthly to the Consultant.

1.4 Schedule Management

.1 A schedule submitted as specified and accepted by Consultant becomes the baseline schedule and shall be used as the baseline for updates.

.2 At each regular progress meeting, review and discuss current construction progress and submittals schedules with the Consultant, including activities that are behind schedule and planned measures to regain schedule slippage in key areas on or near the critical path.

.3 Activities considered behind schedule are those with start or completion dates later than the dates shown on the baseline schedule.

1.5 Recording Actual Site Conditions on As-Built Drawings

.1 Obtain from Consultant an electronic copy of the construction Drawings for the purpose of creating as-built drawings. Record information in electronic form, clearly identifying as-built deviations from the originally obtained construction Drawings.

.2 Clearly label each drawing as “AS-BUILT DRAWING”. Record information concurrently with construction progress.

Do not conceal Work until required information is recorded.

.3 Record actual construction including:
- .1 Measured depths of elements of foundation in relation to finish first floor datum.
- .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
- .3 Measured locations of pipes, ducts, conduits, outlets, fixtures, access panels, and appurtenances, referenced to visible and accessible features of construction.
- .4 Field changes of dimension and detail.
- .5 Changes made by Change Orders and Supplemental Instructions
- .6 References to Shop Drawings, where Shop Drawings show more detail.

.4 Do not use as-built drawings for construction purposes.

1.6 Progress Photographs

.1 Arrange for periodic digital photography to document and provide a photographic record of the progress of the Work.

.2 Provide photographs of any aspect of the Work upon request of the Consultant, made either during the progress of the Work or requested in advance of a part of the Work. Provide as many photographs as deemed necessary by the Consultant to ascertain the status or condition of the Work.

.3 Identify each photograph by project name and date taken.

.4 Submission: Submit .jpg format files in standard resolution via e-mail at intervals indicated at the start up meeting or as requested by the Consultant.

.5 Do not use progress or any other Project photographs for promotional purposes without Owner's written consent.

PART 2 - PRODUCTS

.1 Not Used
- .1 Not applicable

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Administrative

.1 Submit specified submittals to Consultant for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in the Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time or for Product substitutions or other deviations from the Drawings and Specifications.

.2 Where required by authorities having jurisdiction, provide submittals to such authorities for review and approval.

.3 Do not proceed with Work affected by a submittal until review is complete.

.4 Present Shop Drawings, Product data, and samples in SI metric units. Where items or information is not produced in SI Metric units, converted values are acceptable.

.5 Review submittals, provide verified field measurements where applicable, and affix Contractor's review stamp prior to submission to Consultant. Contractor's review stamp represents that necessary requirements have been determined and verified, and that the submittal has been checked and coordinated with requirements of the Work and Contract Documents.

.6 Verify field measurements and that affected adjacent Work is coordinated.

.7 Submittals not meeting specified requirements will be returned with comments.

.8 Reproduction of construction Drawings to serve as background for Shop Drawings is permitted.

.9 Do not propose Substitutions or deviations from Contract Documents via Shop Drawing, Product data and sample submittals.

1.2 Shop Drawings and Product Data

.1 Submit shop detail or working drawings and manufacturer's data for all items requiring fabrication, on or off the site, and for all proprietary equipment to the Consultant for review before any such items or equipment are incorporated into the Works. This review of Shop Drawings by the Consultant is for

the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that the Consultant approves the detailed design inherent in the Shop Drawings, the responsibility for which remains with the Contractor submitting them, and such review shall not relieve the Contractor of responsibility for errors or omissions in Shop Drawings or of responsibility for meeting all requirements of the Construction and Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the jobsite, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for coordination of the Work of all sub-trades.

.2 Indicate Products, methods of construction, and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of the Work.

.3 Where Products attach or connect to other Products, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross-references to Drawings, Specifications and other already reviewed Shop Drawings.

.4 Accompany submittals with a transmittal information including:
- .1 Date.
- .2 Project title and number.
- .3 Contractor's name and address.
- .4 Identification of each submittal item and quantity.
- .5 Other pertinent data.

.5 Shop Drawing submittals to include the following as a minimum:
- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
  - .1 Subcontractor.
  - .2 Supplier.
  - .3 Manufacturer.
- .4 Contractor's stamp, date, and signature of Contractor's authorized representative responsible for Shop Drawing review, indicating that each Shop Drawing has been reviewed for compliance with Contract Documents and, where applicable, that field measurements have been verified.
- .5 Details of appropriate portions of the Work as applicable:

.1 Fabrication.
.2 Layout, showing dimensions, including identified field dimensions, and clearances.
.3 Setting or erection details.
.4 Capacities.
.5 Performance characteristics.
.6 Standards.
.7 Operating weight.
.8 Wiring diagrams.
.9 Single line and schematic diagrams.
.10 Relationships to other parts of the Work.

.6 Product data submittals shall include safety data sheets (SDS) for all controlled Products.

.6 Submit one (1) electronic file in pdf file format of all relevant shop drawings to the Consultant. Limit file sizes to 10Mb. Scans must be legible. Illegible pdf files will be returned unreviewed and must be resubmitted so they are legible. For larger projects with multiple shop drawing submissions an FTP site can be set up used upon request to the Consultant for shop drawing submittals if required.

.7 Submit electronic copy of Product data sheets or brochures where specified in the technical Specifications and in accordance with the format restrictions set forth in 1.2.6 above.

.8 Where a submittal includes information not applicable to the Work, clearly identify applicable information and strike out non-applicable information.

.9 The Consultant will not review shop drawings and other material involving a large amount of Work in those instances where it is evident that the Contractor has not used all the information contained in, or where such details are obviously not consistent with the Contract Documents.

.10 Supplement standard information to include details applicable to Project.

.11 Allow five (5) Working Days for Consultant's review of each submittal and incorporate in submittals schedule specified in Section 01 32 00 – Construction Progress Documentation. Allow additional five (5) Working Days where sub-Consultant review is required.

.12 If upon Consultant’s review no errors or omissions are discovered, or if only minor corrections are required as indicated, submittal will be returned and fabrication or

installation of Work may proceed.

.13 If upon Consultant's review significant errors or omissions are discovered, a so noted copy will be returned for correction and resubmission. Do not commence fabrication or installation.

.14 Consultant's notations on submittals are intended to ensure compliance with Contract Documents and are not intended to constitute a change in the Work requiring change to the Contract Price or Contract Time. If Contractor considers any Consultant's notation to be a change in the Work, promptly notify Consultant in writing before proceeding with the Work.

.15 Resubmit corrected submittals through same procedure indicated above before any fabrication or installation of the Work proceeds. When resubmitting, notify Consultant in writing of any revisions other than those requested by Consultant.

.16 Shop drawings are to have an ID written on them which corresponds to the relevant section of the technical specification section where the product is specified.

1.3 Samples

.1 Submit samples for Consultant's review in the number specified in the technical Specifications. Label samples as to origin, Project name, and intended use.

.2 Deliver samples prepaid to Consultant's business address.

.3 Notify Consultant in writing of any deviations in samples from requirements of Contract Documents.

.4 Where a required colour, pattern or texture has not been specified, submit full range of available Products meeting other specified requirements.

.5 Consultant selection from samples is not intended to change the Contract Price or Contract Time. If a selection would affect the Contract Price or Contract Time, notify Consultant in writing prior to proceeding with the Work.

.6 Resubmit samples as required by Consultant to comply with Contract Documents.

.7 Reviewed and accepted samples will establish the standard against which installed Work will be reviewed.

PART 2 - PRODUCTS .1 Not Used
.1 Not applicable

PART 3 - EXECUTION .1 Not Used
.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Reference Standards

.1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.

.2 Province of Nova Scotia:
- .1 Occupational Health and Safety Act, S.N.S. - Updated 2013.

1.2 Action and Informational Submittals

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

.2 Submit one (1) copy of Contractor's authorized representative's work site health and safety inspection reports Consultant and/or authority having jurisdiction, weekly.

.3 Submit copies of reports or directions issued by Federal and/or Provincial health and safety inspectors.

.4 Submit copies of incident and accident reports.

.5 Submit WHMIS Safety Data Sheets (SDS) in accordance with Section 01 33 00 – Submittal Procedures.

.6 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to the Consultant.

.7 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.3 Filing of Notice

.1 File notice of project with Provincial authorities prior to beginning of work.

.2 Install proper site separation and identification in order to maintain adequate space at all times throughout life of project.

1.4 Safety Assessment

.1 Perform site specific safety hazard assessment related to project.

1.5 Meetings

.1 Schedule and administer health and safety meeting with Consultant prior to commencement of work.

1.6 Regulatory Requirements

.1 Do work in accordance with Section 01 41 00 – Regulatory Requirements.

1.7 Responsibility

.1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of work.

.2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.8 Compliance Requirements

.1 Comply with the Occupational Health and Safety Act, General Regulations.

.2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.9 Unforeseen Hazards

.1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of work, follow procedures in place for employee's right to refuse work in accordance with acts and regulations of Province having jurisdiction and advise Consultant verbally and in writing.

.2 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, advise Health and Safety coordinator and follow procedures in accordance with Acts and Regulations of Province having jurisdiction and advise Consultant verbally and in writing.

1.10 Health and Safety

.1 Employ and assign to work, competent and authorized

Coordinator

representative as health and safety coordinator. Health and safety coordinator must:

.1 Have site-related working experience specific to activities associated with the Work being done in this project.

.2 Have working knowledge of occupational safety and health regulations.

.3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.

.4 Be on site during execution of Work and report directly to and be under direction of the site supervisor.

1.11 Posting of Documents

.1 Post applicable items, articles, notices and orders in conspicuous location on site in accordance with acts and regulations of Province having jurisdiction, and in consultation with Consultant.

1.12 Correction of Non-Compliance

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Consultant.

.2 Provide Consultant with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Consultant may stop Work if non-compliance of health and safety regulations is not corrected.

1.13 Blasting

.1 Blasting or other use of explosives is not permitted without prior receipt of written instruction by Consultant.

1.14 Powder Actuated Devices

.1 Use powder actuated devices only after receipt of written permission from Consultant.

1.15 Work Stoppage

.1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for work.

1.16 Hazardous Material

.1 Should material resembling hazardous materials other than those identified within the Contract Documents, including, but not limited to, spray or trowel applied asbestos, be

encountered in course of work; stop work immediately. Do not proceed until written instructions have been received from the Consultant.

.2 Where work entails use, storage, or disposal of toxic or hazardous materials, chemicals and or explosives, or otherwise creates a hazard to life, safety, health, or the environment; work shall be in accordance with the Jurisdictional Authority.

1.17 Confined Spaces

.1 Carry out Work in confined spaces in compliance with the Provincial occupational Health and Safety Regulations (OH&S), - Occupational Safety General Regulations, Confined Space Entry provisions.

.2 Provide approved air monitoring equipment where workers are working in confined spaces and ensure any test equipment to be used is calibrated, in good working order and used by trained persons.

.3 Develop a confined space entry program specific to the nature of Work performed and in accordance with OH&S Act and Regulations and confirm supervisors and workers are trained in the confined space entry program.

.1 Confirm personal protective equipment and emergency rescue equipment are appropriate to the nature of the work being performed is provided and used.

.4 Provide and maintain training of workers, as required by the Federal and Provincial Legislation.

.5 Provide Consultant with a copy of an “Entry Permit” for each entry into the confined space to ensure compliance with Federal and Provincial Legislation.

1.18 First Aid

.1 During the progress of the Works, provide and maintain at all times and in easily accessible positions on the Works adequate first aid kits equal to those required by the Worker’s Compensation Act for the free use as necessary of all persons on the Site.

PART 2 - PRODUCTS

.1 Not Used

.1 Not applicable

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Reference Standards

.1 "Reference standards" means consensus standards, trade association standards, guides, and other publications expressly referenced in Contract Documents.

.2 Where an edition or version date is not specified, referenced standards shall be deemed to be the latest edition or revision issued by the publisher at the time of bid closing. However, if a particular edition or revision date of a specified standard is referenced in an applicable code or other regulatory requirement, the regulatory referenced edition or version shall apply.

.3 Reference standards establish minimum requirements. If Contract Documents call for requirements that differ from a referenced standard, the more stringent requirements shall govern.

.4 If compliance with two or more reference standards is specified and the standards establish different or conflicting requirements, comply with the most stringent requirement. Refer uncertainties to Consultant for clarification.

1.2 Testing

.1 Appoint and pay for the services of testing laboratory including:

- .1 Inspection and testing required by laws, ordinances, rules and regulations.
- .2 Testing, adjustment and balancing of process, mechanical and electrical equipment systems.
- .3 Tests specified to be performed by Contractor.
- .4 Inspection and testing performed exclusively for convenience of Contractor.
- .5 Testing to ensure a safe Work environment for employees or subcontractors employed by the Contractor.

.2 Provide such assistance, labour and materials as are normally required for examining, measuring and testing the quality, weight or quantity, pay all costs of any material used, and supply samples of materials before incorporation in the Works for testing as may be selected and as specified herein.

.3 Perform or arrange for the performance of all tests on all equipment in complete accordance with the relevant clauses

of these Specifications and in the presence of the Consultant.

.4 The cost of providing assistance, samples, etc., for testing and of performing or arranging tests shall be deemed to be covered by and included in the Contract Price unless noted otherwise, elsewhere in these Specifications.

.5 The Contractor shall have no claim against the Owner or the Consultant in respect of any financial loss which may be suffered from the rejection of any materials or equipment due to their failure to meet specified test requirements, and the Contractor shall also bear the cost of remedying any defects such that the material or equipment will meet the specified tests, or failing this, of removing the material or equipment from the Site. The decision to repair or replace materials and equipment which have failed to meet test requirements will be made by the Consultant.

.6 Employment of inspection and testing agencies by Contractor or Owner does not relieve Contractor from responsibility to perform the Work in accordance with Contract Documents.

.7 Allow and arrange for inspection and testing agencies to have access to the Work, including access to off-site manufacturing and fabrication plants.

.8 For inspection and testing required by Contract Documents or by authorities having jurisdiction, provide Consultant and inspection and testing agencies with timely notification in advance of required inspection and testing.

.9 Submit test samples required for testing in accordance with submittals schedule specified in Section 01 32 00 – Construction Progress Documentation and in accordance with Section 01 33 00 – Submittal Procedures.

.10 Provide labour, Construction Equipment and temporary facilities to obtain and handle test samples on site.

1.3 Mock-Ups

.1 Prepare mock-ups of Work as specified in the technical Specifications. If a mock-up location is not indicated in the Drawings or Specifications, locate where directed by Consultant.

.2 Modify mock-up as required until Consultant approval is obtained.

.3 Approved mock-ups establish an acceptable standard for the

Work.

.4 Protect mock-ups from damage until the Work they represent is complete.

.5 Unless otherwise specified in the technical Specifications, approved mock-ups forming part of the Work may remain as part of the Work.

.6 Remove mock-ups only when the Work they represent is complete or when otherwise directed by Consultant.

.7 Employment of inspection and testing agencies by Contractor or Owner does not relieve Contractor from responsibility to perform the Work in accordance with Contract Documents.

.8 Allow and arrange for inspection and testing agencies to have access to the Work, including access to off-site manufacturing and fabrication plants.

.9 For inspection and testing required by Contract Documents or by authorities having jurisdiction, provide Consultant and inspection and testing agencies with timely notification in advance of required inspection and testing.

.10 Submit test samples required for testing in accordance with submittals schedule specified in Section 01 32 00 – Construction Progress Documentation.

.11 Provide labour, construction equipment and temporary facilities to obtain handle test samples on site.

1.4 Inspection and Testing Agency Reports

.1 For inspection and testing required by contract documents or by regulatory requirements, and performed by Contractor retained inspection and testing agencies, submit to Consultant and Owner copies of reports. Submit within five (5) days after completion of inspection and testing.

.2 For inspection and testing performed by Owner retained inspection and testing agencies, copies of inspection and testing agency reports will be provided to Contractor.

PART 2 - PRODUCTS

.1 Not Used
.1 Not applicable

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Summary

.1 This Section references to laws, by laws, ordinances, rules, regulations, codes, orders of Authority Having Jurisdiction, and other legally enforceable requirements applicable to Work and that are; or become, in force during performance of Work.

1.2 Design Codes

.1 Perform Work in accordance with the latest National and Provincial Building Codes in effect at the time of tender closing including all amendments. In the case of conflict or discrepancy between provincial or local codes, the more stringent requirements apply.

.2 Specific design and performance requirements listed in specifications or indicated on Drawings may exceed minimum requirements established by referenced Building Code; these requirements will govern over the minimum requirements listed in Building Code

- .1 Meet or exceed requirements of:
  - .1 Contract documents.
  - .2 Specified standards, codes and referenced documents.

1.3 Hazardous Material Discovery

.1 Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered during demolition work. Notify Consultant.

.2 PCB: Polychlorinated Biphenyl: stop work immediately when material resembling Polychlorinated Biphenyl is encountered during demolition work. Notify Consultant.

.3 Mould: stop work immediately when material resembling mould is encountered during demolition work. Notify Consultant.

1.4 Building Smoking Environment

.1 Comply with smoking restrictions and municipal by-laws.

1.5 Quality Assurance

.1 Regulatory requirements: Except as otherwise specified, apply for, obtain, and pay fees associated with, permits, licenses, certificates, and approvals required by regulatory

requirements and Contract Documents, based on General Conditions of Contract and the following:

.1 Regulatory requirements and fees in force on date of Bid submission, and

.2 A change in regulatory requirements or fees scheduled to become effective after date of tender submission and of which public notice has been given before date of tender submission:

PART 2 - PRODUCTS

2.1 Easements and Notices

.1 Owner will obtain permanent easements and rights of servitude that may be required for performance of Work.

.2 Give notices required by regulatory requirements.

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Construction Facilities - General

.1 Provide temporary construction facilities as necessary for performance of the Work and in compliance with applicable regulatory requirements.

.2 Maintain temporary construction facilities in good condition for the duration of the Work.

.3 Remove temporary construction facilities from Place of the Work when no longer required.

1.2 Construction Parking

.1 Limited parking will be permitted at Place of the Work where indicated by the Consultant.

1.3 Site Offices

.1 If a site office is required, provide at no additional cost. No interior space will be provided.

1.4 Sanitary Facilities

.1 Provide sanitary facilities for workers.

.2 Keep sanitary facilities clean and fully stocked with the necessary supplies.

1.5 Fire Protection

.1 Maintain existing fire protection systems and equipment during construction.

PART 2 - PRODUCTS

.1 Not Used

.1 Not applicable

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 General

.1 Provide Products that are not damaged or defective, and suitable for purpose intended, subject to specified requirements. If requested by Consultant, furnish evidence as to type, source and quality of Products provided.

.2 Unless otherwise specified, maintain uniformity of manufacture for like items throughout.

1.2 Materials and Workmanship

.1 All equipment, materials and workmanship shall be the best of the respective kinds described in the Contract and in accordance with the Consultant's instructions and may be subjected to standard tests as the Consultant may direct at the place of manufacture or fabrication or on the Site.

.2 Where the Consultant has requested and before ordering materials for incorporation into the Works inform the Consultant of the source of the materials. No order for such materials will be given except with the authorization of the Consultant. Notwithstanding the fact that such authorization may have been given, the Consultant may forbid the use of any such materials, if upon delivery, they are found to be defective or unsuitable for incorporation in the Works. Keep the Consultant fully advised of the orders and delivery dates of materials.

.3 All material and equipment required to be incorporated into the Work must be new and unused. Any material found during the progress of the Work to have cracks, flaws, or other defects will be rejected by the Consultant.

.4 Replace materials and equipment found defective in manufacturer. This includes the furnishing of all materials and labour required for the replacement of installed material and equipment discovered defective prior to the final acceptance of the Works.

Permanent manufacturer's markings, labels, trademarks, and nameplates on Products are not acceptable in prominent locations, except where required by regulatory requirements or for operating instructions, or when located in mechanical or electrical rooms.

1.3 Product Options

.1 Subject to the provisions of Section 01 25 00 –Substitution Procedures:

.1 Wherever a Product or manufacturer is specified by a single proprietary name, provide the named Product only.

.2 Wherever more than one Product or manufacturer is specified by proprietary name for a single application, provide any one of the named Products.

.2 Wherever a Product is specified by reference to a standard only, provide any Product that meets or exceeds the specified standard. If requested by Consultant, submit information verifying that the proposed Product meets or exceeds the specified standard.

.3 Wherever a Product is specified by descriptive or performance requirements only, provide any Product that meets or exceeds the specified requirements. If requested by Consultant, submit information verifying that the proposed Product meets or exceeds the specified requirements.

1.4 Product Availability and Delivery Times

.1 Promptly upon Contract award and periodically during construction, review and confirm Product availability and delivery times. Order Products in sufficient time to meet the construction progress schedule and the Contract Time.

.2 If a specified Product is no longer available, promptly notify Consultant. Consultant will take action as required.

.3 If delivery delays are foreseeable, for any reason, promptly notify Consultant.

.1 If a delivery delay is beyond Contractor’s control, Consultant will provide direction.

.2 If a delivery delay is caused by something that was or is within Contractor’s control, propose actions to maintain the construction progress schedule for Consultant’s review and acceptance.

1.5 Storage, Handling, and Protection

.1 .1 Store, handle, and protect Products during transportation to Place of the Work and before, during, and after installation in a manner to prevent damage, adulteration, deterioration and soiling.

.2 Comply with manufacturer's instructions for storage, handling

and protection.

.3 Store packaged or bundled Products in original and undamaged condition with manufacturer's seals and labels intact. Do not remove from packaging or bundling until required in Work.

.4 Comply with the requirements of the workplace hazardous materials information system (WHMIS) regarding use, handling, storage, and disposal of hazardous materials, including requirements for labeling and the provision of safety data sheets (SDS).

.5 Store Products subject to damage from weather in weatherproof enclosures.

.6 Store sheet Products on flat, solid, supports and keep clear of ground. Slope to shed moisture.

.7 Remove and replace damaged Products.

PART 2 - PRODUCTS

.1 Not Used
.1 Not applicable

PART 3 - EXECUTION

.1 Not Used
.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Summary

.1 Except where otherwise specified in technical Specifications or otherwise indicated on Drawings, comply with requirements of this Section.

1.2 Manufacturer's Instructions

.1 Install, erect, or apply Products in strict accordance with manufacturer's instructions.

.2 Notify Consultant, in writing, of conflicts between Contract Documents and manufacturer's instructions where, in Contractor's opinion, conformance with Contract Documents instead of the manufacturer's instructions may be detrimental to the Work or may jeopardize the manufacturer's warranty.

.3 Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.

.4 Provide manufacturer's representatives with access to the Work at all times. Render assistance and facilities for such access so that manufacturer's representatives may properly perform their responsibilities.

1.3 Concealment

.1 Conceal pipes, ducts, and wiring in floors, walls and ceilings in finished areas:

- .1 after review by Consultant and authority having jurisdiction, and
- .2 where locations differ from those shown on Drawings, after recording actual locations on as-built drawings.

.2 Provide incidental furring or other enclosures as required.

.3 Notify Consultant in writing of interferences before installation.

1.4 Fastenings - General

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials.

.2 Prevent electrolytic action and corrosion between dissimilar metals and materials by using suitable non-metallic strips, washers, sleeves, or other permanent separators to avoid direct contact.

.3 Use non-corrosive fasteners and anchors for securing exterior Work and in spaces where high humidity levels are anticipated.

.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Do not use fastenings or fastening methods that may cause spalling or cracking of material to which anchorage is made.

1.5 Fastenings - Equipment

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Bolts shall not project more than one diameter beyond nuts

1.6 Fire Rated Assemblies

.1 When penetrating fire rated walls, ceiling, or floor assemblies, completely seal voids with fire-stopping materials, smoke seals, or both, in full thickness of the construction element as required to maintain the integrity of the fire rated assembly.

1.7 Location of Fixtures, Outlets And Devices

.1 Consider location of fixtures, outlets, and devices indicated on Drawings as approximate.

.2 Locate fixtures, outlets, and devices to provide minimum interference, maximum usable space, and as required to meet safety, access, maintenance, acoustic, and regulatory, including barrier free, requirements.

.3 Promptly notify Consultant in writing of conflicting installation requirements for fixtures, outlets, and devices. If requested, indicate proposed locations and obtain approval for actual locations.

1.8 Protection of Completed Work And Work In Progress

.1 Adequately protect parts of the Work completed and in progress from any kind of damage.

.2 Promptly remove, replace, clean, or repair, as directed by Consultant, Work damaged as a result of inadequate protection.

.3 Do not load or permit to be loaded any part of the Work with

a weight or force that will endanger the safety or integrity of the Work.

1.9 Remedial Work

Notify Consultant of, and perform remedial Work required to, repair or replace defective or unacceptable Work. Ensure that properly qualified workers perform remedial Work. Coordinate adjacent affected Work as required.

PART 2 - PRODUCTS

.1 Not Used
.1 Not applicable

PART 3 - EXECUTION

.1 Not Used
.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Request For Cutting, Patching and Remedial Work

.1 Submit written request in advance of cutting, coring, or alteration which affects or is likely to affect:
- .1 Structural integrity of any element of the Work.
- .2 Integrity of weather-exposed or moisture-resistant elements.
- .3 Efficiency, maintenance, or safety of any operational element.
- .4 Visual qualities of sight-exposed elements.
- .5 Work of Owner or other contractors.
- .6 Warranty of Products affected.

.2 Include in request:
- .1 Identification of Project.
- .2 Location and description of affected Work, including drawings or sketches as required.
- .3 Statement on necessity for cutting or alteration.
- .4 Description of proposed Work, and Products to be used.
- .5 Alternatives to cutting and patching.
- .6 Effect on Work of Owner or other contractors.
- .7 Written permission of affected other contractors.
- .8 Date and time Work will be executed.

1.2 Products

.1 Unless otherwise specified, when replacing existing or previously installed Products in the course of cutting and patching Work, use replacement Products of the same character and quality as those being replaced.

.2 If an existing or previously installed Product must be replaced with a different Product, submit request for substitution in accordance with Section 01 25 00 - Substitution Procedures.

1.3 Preparation

.1 Inspect existing conditions.

.2 Provide supports to maintain structural integrity of surroundings; provide devices and methods to protect other portions of the Work from damage.

.3 Provide protection from elements for areas that may be exposed by uncovering Work.

1.4 Existing Utilities

.1 Known subsurface services and utilities may be indicated on the drawings or otherwise identified. Prior to carrying out any subsurface excavation, contact appliable utilities or Owner's personnel to precisely locate buried structures or utilities on the ground. All costs to locate and identity such buried services shall be deemed to be included in the Contract Price. Test dig and carefully excavate to locate such services and utilities.

.2 Where the Work involves breaking into or connecting to existing services, give authority having jurisdiction and the Consultant 48 hours notice for necessary interruption of mechanical or electrical services.

.3 Maintain excavations free of water.

.4 Keep duration of interruptions to a minimum.

.5 Carry out interruptions after regular working hours of occupants, preferably on weekends, unless Owner's prior written approval is obtained.

.6 Protect and maintain existing active services. Record location of services, including depth, on as-built drawings.

.7 Construct or erect barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures as required to protect pedestrian and vehicular traffic.

1.5 Cutting, Patching, and Remedial Work

.1 Bear costs of repairing damage to the Site, property of others and injuries of persons resulting from the Contractor's operation under the Contract.

.2 Immediately inform the Consultant of damage or injury to persons, property, services or materials.

.3 Coordinate and perform the Work to ensure that cutting and patching Work is kept to a minimum.

.4 Perform cutting, fitting, patching, and remedial Work to make the affected parts of the Work come together properly and complete the Work.

.5 Provide openings in non-structural elements of the Work for penetrations of mechanical and electrical Work.

.6 Perform cutting by methods to avoid damage to other Work.

.7 Provide proper surfaces to receive patching, remedial Work, and finishing.

.8 Perform cutting, patching, and remedial Work using competent and qualified specialists familiar with the Products affected, in a manner that neither damages nor endangers the Work.

.9 Do not use pneumatic or impact tools without Consultant's prior approval.

.10 Do not do cutting, patching, and remedial Work such that it jeopardizes the manufacturers' warranties.

.11 Refinish surfaces to match adjacent finishes. For continuous surfaces refinish to nearest intersection. For an assembly, refinish entire unit.

.12 Fit Work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces with suitable allowance for deflection, expansion, contraction, acoustic isolation, and firestopping.

.13 Maintain fire ratings of fire rated assemblies where cutting, patching, or remedial Work is performed. Completely seal voids or penetrations of assembly with firestopping material to full depth or with suitably rated devices.

.14 Restore any surrounding areas affected by the Work associated with cutting or patching to pre-construction condition or in accordance with the condition as shown on the Project Drawings.

PART 2 - PRODUCTS

.1 Not Used
.1 Not applicable

PART 3 - EXECUTION

.1 Not Used
.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Regulatory Requirements

.1 Comply with applicable regulatory requirements when disposing of waste materials.

.2 Obtain permits from authorities having jurisdiction and pay disposal fees where required for disposal of waste materials and recyclables.

1.2 General Cleaning Requirements

.1 Provide adequate ventilation during use of volatile or noxious substances. Do not rely on building ventilation systems for this purpose.

.2 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.3 Prevent cross-contamination during the cleaning process.

.4 Notify the Consultant of the need for cleaning caused by Owner or other contractors.

1.3 Construction Waste Management and Disposal - General

.1 Keep Work, property, road surfaces, etc. in vicinity of the Works and in areas where Contractor's trucks will travel in a clean and orderly condition, free from excessive dirt, dust, snow, ice, rubbish, etc. at all times during the progress of the Work.

.2 Maintain trucks so that no spillage will occur. Before leaving the Site. Trim loads and free wheels of accumulations of soil.

.3 Keep Site free from accumulations of waste material and rubbish to prevent an unsightly or hazardous condition. On the completion of the Works clear away and remove from the Site all Construction Equipment, surplus materials, rubbish and temporary Works of every kind and leave the whole of the Site and Works in a condition that meets the approval of the Consultant.

.4 Do not dispose of volatile fluid wastes (such as mineral spirits, oil, or paint thinner) in storm or sanitary sewer systems or into streams or waterways.

.5 Dispose of debris and waste materials in accordance with the latest regulations respecting Solid Waste Resource Management issued by Nova Scotia Environment, at no additional cost to the Contract.

.6 Dispose of all construction and demolition waste at an approved C&D waste disposal site.

.7 Where possible, divert construction and demolition waste to the appropriate recycling facilities. Minimize waste generated by the Work.

.8 Do not burn or bury waste materials at Place of the Work.

.9 Cover or wet down dry waste materials to prevent blowing dust and debris.

1.4 Progressive Cleaning and Waste Management

.1 Maintain the Work in a tidy and safe condition, free from accumulation of waste materials and construction debris.

.2 Provide appropriate, clearly marked, containers for collection of waste materials and recyclables. Locate containers as directed by the Owner and/or Consultant.

.3 Remove waste materials and recyclables from Work areas, separate, and deposit in designated containers at end of each Working Day. Collect packaging materials for recycling or reuse.

.4 Remove waste materials and recyclables from Place of the Work at regular intervals in order to maintain a clean and orderly site.

.5 Clean interior building areas prior to start of finish Work and maintain free of dust and other contaminants during finishing operations.

.6 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly finished surfaces nor contaminate building systems

1.5 Final Cleaning

.1 Before final cleaning, arrange a meeting at Place of the Work to determine the acceptable standard of cleaning.

.2 Remove from Place of the Work surplus Products, waste

materials, recyclables, Temporary Work, and Construction Equipment not required to perform any remaining Work.

.3 Lock or otherwise restrict access to each room or area after completing final cleaning in that area.

.4 Re-clean as necessary areas that have been accessed by Contractor's workers prior to Owner occupancy.

.5 Remove stains, spots, marks, and dirt from finished surfaces, electrical and mechanical fixtures, furniture fitments, walls, floors and any other soiled surface.

.6 As applicable, clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and all other finished surfaces, including mechanical and electrical fixtures. Replace broken, scratched or otherwise damaged glass.

.7 Remove dust from lighting reflectors, lenses, lamps, bulbs, and other lighting surfaces.

.8 Vacuum clean and dust exposed wall, floor, and ceiling surfaces, behind grilles, louvres, and screens as applicable.

.9 Clean mechanical, electrical, and other equipment. Replace filters for mechanical equipment if equipment is used during construction.

.10 Remove waste material and debris from crawlspaces and other accessible concealed spaces.

.11 Remove stains, spots, marks, and dirt from exterior facades.

.12 Clean exterior and interior window glass and frames.

.13 Clean and sweep roofs, clear roof drains, clean gutters and downspouts, sunken wells.

PART 2 - PRODUCTS

.1 Not Used

.1 Not applicable

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Substantial Performance of The Work

.1 Complete the prerequisites to, and the procedures for, attaining substantial performance of the Work, or similar such milestone as provided for in the lien legislation applicable to the Place of the Work.

1.2 Ready-For-Takeover

.1 The prerequisites to attaining Ready-for-Takeover of the Work are described in the General Conditions of the Contract.

1.3 Inspection and Review Before Ready-For-Takeover

.1 Contractor's Inspection: Before applying for the Consultant's review to establish Ready-for-Takeover of the Work.
- .1 Ensure that the specified prerequisites to Ready-for-Takeover of the Work are completed.
- .2 Conduct an inspection of the Work to identify defective, deficient, or incomplete work.
- .3 Prepare a comprehensive and detailed list of items to be completed or corrected.
- .4 Provide an anticipated schedule and costs for items to be completed or corrected.

.2 Consultant's Review: Upon receipt of the Contractor's application for review, together with the Contractor's list of items to be completed or corrected, the Consultant and the Contractor shall arrange a mutually satisfactory agreed date and time to jointly review the Work. The Consultant will advise the Contractor whether or not the Work is Ready-for-Takeover. Add additional items, if any, to the Contractor's list of items to be completed or corrected. Provide the Consultant with a copy of the revised list.
- .1 Maintain the list of items to be completed or corrected and promptly correct or complete defective, deficient and incomplete work. The Contractor's inspection and Consultant's review procedures specified above shall be repeated until the Work is Ready-for-Takeover and no items remain on the Contractor's list of items to be completed or corrected.
- .2 When the Consultant determines that the Work is Ready-for-Takeover, the Consultant will notify the Contractor and the Owner in writing to that effect.

1.4 Prerequisites to Final Payment

.1 After Ready-for-Takeover of the Work and before submitting an application for final payment in accordance with the General Conditions of Contract:

.1 Correct or complete all remaining defective, deficient, and incomplete work.

.2 Remove from the Place of the Work all remaining surplus Products, Construction Equipment, and Temporary Work.

.3 Perform final cleaning and waste removal necessitated by the Contractor's work performed after Ready-for-Takeover, as specified in Section 01 74 00 – Cleaning and Waste Management.

PART 2 - PRODUCTS

.1 Not Used

.1 Not applicable

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 Operation and Maintenance Manual

.1 Prepare a comprehensive operation and maintenance manual, using personnel qualified and experienced for this task.

.2 Fifteen working days before the anticipated Ready-for-takeover date submit an initial draft of the operation and maintenance manual for Consultant's review. If required by Consultant's review comments, revise manual contents, and resubmit for Consultant's review. If required, repeat this process until Consultant accepts the draft manual in writing.

.3 Submit final version to Owner in hard copy and electronic format. Provide three (3) hard copies.

1.2 Operation And Maintenance Manual Format

.1 Organize data in the form of an instructional manual.

.2 Binders: vinyl, hard covered, three D-rings, loose leaf, 216 x 279 mm, with spine and face pockets.

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

.4 Cover: Identify each binder with typed or printed title "Operation and Maintenance Manual", name of Project or facility, and 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 or 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. Bind in with text; fold larger drawings to size of text pages.

.9 In addition to the hard copy requirements given above, provide an electronic copy of manual in PDF format.

.10 Provide electronic copy of Shop Drawings in manual as 1:1

scaled PDF files in .pdf file format on electronic media acceptable to Owner.

1.3 Operation And Maintenance Manual – General Content

.1 Table of contents for each volume.

.2 Introductory information including:
- .1 Date of manual submission.
- .2 Complete contact information for Consultant, subconsultants, other consultants, and Contractor, with names of responsible parties.
- .3 Schedule of Products and systems indexed to content of volume.

.3 For each Product or system, include complete contact information for Subcontractors, Suppliers and manufacturers, including local sources for supplies and replacement parts.

.4 Product Data: mark each sheet to clearly identify specific products, options, and component parts, and data applicable to installation. Delete or strike out inapplicable information. Supplement with additional information as required.

.5 Reviewed Shop Drawings.

.6 Permits, certificates, letters of assurance and other relevant documents issued by or required by authorities having jurisdiction.

.7 Warranties.

.8 Operating and maintenance procedures, incorporating manufacturer's operating and maintenance instructions, in a logical sequence.

1.4 Operation And Maintenance Manual – Equipment and Systems Content

.1 Each Item of Equipment and Each System: include description of unit or system and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Include each system in the table of contents.

.3 Panel Board Circuit Directories: provide electrical service

characteristics, controls, and communications.

.4 Include installed colour coded wiring diagrams.

.5 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

.6 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.7 Provide servicing and lubrication schedule, and list of lubricants required.

.8 Include manufacturer's printed operation and maintenance instructions.

.9 Include sequence of operation by controls manufacturer.

.10 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.11 Provide installed control diagrams by controls manufacturer.

.12 Provide Contractor's coordination drawings, with installed colour coded piping diagrams.

.13 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

.14 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.15 Include testing and balancing reports.

.16 Include additional content as specified in technical Specifications sections

1.5 Operation and Maintenance Manual – Products and Finishes Content

.1 Include Product data, with catalogue number, options selected, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured Products.

.2 Instructions for cleaning agents and methods, precautions

against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Include an outline of requirements for routine and special inspections and for regular maintenance to ensure that on-going performance of the building envelope will meet the initial building envelope criteria.

.4 Include additional content as specified in technical Specifications sections.

1.6 Operation and Maintenance Manual – Warranties Content

.1 Separate each warranty with index tab sheets keyed to Table of Contents listing.

.2 List each warrantor with complete contact information.

.3 Verify that documents are in proper form and contain full information. Ensure that warranties are for the correct duration and are in Owner's name.

1.7 Record Information

.1 Record Drawings:
- .1 After award of Contract, Consultant will provide a set of drawings for purpose of maintaining record drawings. Accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by Consultant.
- .2 Identify drawings as "Project Record Copy". Maintain in new condition and make available for inspection on site by Consultant.
- .3 On completion of Work and prior to final inspection, submit record documents to Consultant.

.2 Maintain record drawings on site as the work progresses for all aspects of the work.

.3 Owner will mark on "Project Record Copy" modifications made for work under the Owner's Scope of Work.

1.8 Project Record Drawings

.1 Transfer all information marked up on the as-built drawings during the progress of the Work to a master set of record drawing files provided by Consultant, in electronic format.

.2 Mark revised drawings as "RECORD DRAWINGS".

.3 Submit completed record drawings in electronic form to

Owner and Consultant.

1.9 Spare Parts, Maintenance Materials, and Special Tools

.1 Supply spare parts, maintenance materials, and special tools in quantities specified in technical Specifications sections.

.2 Ensure spare parts and maintenance materials are new, not damaged nor defective, and of same quality, manufacturer, and batch or production run as installed Products.

.3 Provide tags for special tools identifying their function and associated Product.

.4 Deliver to and store items at location directed by Owner at Place of the Work. Store in original packaging with manufacturer's labels intact and in a manner to prevent damage or deterioration.

.5 Catalogue all items and submit to Consultant an inventory listing organized by Specifications section. Include Consultant reviewed inventory listing in operation and maintenance manual.

PART 2 - PRODUCTS

.1 Not Used
.1 Not applicable

PART 3 - EXECUTION

.1 Not Used
.1 Not applicable

END OF SECTION

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 to existing facilities and structures. The work generally includes, but is not limited to removal of equipment, piping, valves, supports, electrical equipment and other equipment as indicated on the drawings.

1.2 Related Work

.1 Electrical: Division 26.

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, 2020, 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 the 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 the Consultant.

.3 To the extent possible, take care to preserve existing floor and wall finishes.

.4 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 Contract.

.5 Keep noise, dust and inconvenience to occupants and neighbours to a minimum.

.6 Provide temporary dust screens, covers and other protection

as required. Refer to Section 01 56 00.

.7 Prevent debris from blocking surface drainage, process, mechanical and electrical systems which must remain in operation.

.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.

1.6 Regulatory Requirements

.1 Perform demolition work in compliance with applicable Federal, Provincial and Municipal Regulations and CSA S350.

PART 2 - PRODUCTS

.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 conduit and wiring back to source

.5 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.

.6 Shut off, disconnect and cap mechanical and electrical services where applicable.

.7 Notify and obtain approval of Owner companies before starting removals.

.8 Include any and all charges associated with coordinating the work by NS Power or any utility affected by the Work in the Contract Price.

.9 Where directed to remove existing pipework, fittings, valves and equipment supported at existing floors, remove associated pipe support structures, anchor bolts and related accessories. Following removal, grind smooth the affected area, and finish to match existing coating system of adjacent areas

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

3.3 Removal From Site

.1 At end of each day's work, leave work in a safe and stable condition.

.2 Stockpiling of demolition debris is permitted on a temporary basis as approved by the Consultant.

.3 Removal of temporary stockpiled material will be required, if it

is deemed by the Consultant, to interfere with operations of Owner.

.4 Complete demolition in a manner to minimize dust. Keep materials wetted as directed by the Consultant.

3.4 Salvage and Disposal of Materials

.1 Dispose of items not designated for reuse or relocation off site at authorized facilities. Confirm with the Owner prior to disposal, in case the Owner wishes to retain said items for spare parts.

.2 Pay all costs and fees associated with the removal from site and disposal.

3.5 Restoration

.1 Restore areas and existing works outside areas of demolition to match condition of adjacent, undisturbed areas.

.2 Touch up paint on walls and floors where surfaces are marred during construction or where remove equipment leaves a surface exposed which does not match adjacent surfaces.

3.6 Cleanup

.1 Upon completion of work, remove debris, trim surfaces and leave work site clean.

END OF SECTION

PART 1 - GENERAL

1.1 Work Included

.1 This Section specifies requirements for furnishing all materials, labour, tools and equipment, and performing all operations necessary to complete all miscellaneous metal and fabricated items, as shown on the Drawings and specified in this Section.

.2 The Work generally includes the following categories and all related items of miscellaneous metal shown on the Drawings except where noted otherwise:
- .1 Anchors, chemical anchors, bolts and inserts
- .2 Miscellaneous steel
- .3 Pipe and valve supports
- .4 Electrical and mechanical equipment supports
- .5 Steel handrails and guards.

.3 Where not indicated in this Section, refer to drawings for number of items to be provided for each category.

1.2 References

.1 ASTM A53/A53M-22, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-coated Welded and Seamless.

.2 CSA G164-18, Hot Dip Galvanizing of Irregularly Shaped Articles.

.3 CSA W59.2-18, Welded Aluminum Construction.

.4 CAN/CSA-S16-19, Design of Steel Structures.

.5 CSA W59-18, Welded Steel Construction (Metal-arc Welding).

.6 CAN/CGSB-1.40-97, Primer, Structural Steel, Oil Alkyd Type.

1.3 Shop Drawings

.1 Submit shop drawings in accordance with Section 01 33 00.

.2 Clearly indicate materials, core thicknesses, finishes, connections, joints, method of attachment, number of anchors, supports, reinforcement, details and accessories

1.4 Product Delivery, Storage and Handling

.1 Label, tag, or otherwise mark items supplied for installation by other sections to indicate its function, location, and shop

drawing designation.

1.5 Conditions

.1 Protection:
- .1 Maintain protection of Work of this Section from time of installation until final finishes are applied.
- .2 Protect galvanized surfaces from damage.
- .3 Protect exposed surfaces of prefinished metal work which does not receive site finishing with protective coatings or wrappings. Use materials recommended by finishers or manufacturers of metals to ensure that method is sufficiently protective, easily removed, and harmless to the finish.

1.6 Design of Details and Connections

.1 Design details and connections in accordance with requirements of CSA S16 to resist axial forces, movements, shears and allow for movements indicated.

.2 Unless noted otherwise, connections are to be designed and detailed to resist 50% of the total uniformly distributed factored load capacity of the members and 75% of the tensile capacity of bracing members.

.3 For non-standard connections, submit sketches and design calculations sealed with the stamp and signature of a qualified professional engineer registered or licensed to practice in the Province of Nova Scotia.

.4 For standard connections, select details from CISC Handbook of Steel Construction to ensure structural adequacy. Submit all standard connections for each structural steel member size. Connection designs must be sealed with the stamp and signature of a qualified professional engineer registered or licensed to practice in the Province of Nova Scotia.

PART 2 - PRODUCTS

2.1 Materials

.1 Use new materials that are free from corrosion, rust, and millscale.

.2 Steel angles and plates: to CSA G40.21, 300W.

.3 Rolled steel sections: to CSA G40.21, 350W, and Class C) for hollow structural sections (alternatively ASTM A 500, Grade C Fy = 345MPa).

.4 Steel pipe: to ASTM A 53, schedule 40, standard weight, unless noted otherwise, galvanized.

.5 Stainless steel plate: to ASTM A 480.

.6 Stainless steel bars: to ASTM A 484.

.7 Aluminum plate: to ASTM B 209.

.8 Aluminum sections: to ASTM B 221.

.9 Welding materials: to CSA W48 Series and W59 (W59.2 for aluminum) and certified by Canadian Welding Bureau.

.10 Anchor bolts: to ASTM F1554, grade 36) unless otherwise noted.

.11 Bolts: to ASTM F 3125/F 3125M, Grade A325/A325M.

.12 Nuts and washers: to ASTM A 563 and ASTM F 436 respectively.

.13 Galvanizing: hot dip method with minimum zinc coating of 100µm (705 g/m2) for structural sections and plates, and 65µm (455g/m2) for bolts/nuts/washers and conforming to CSA G164.

.14 Shop coat primer: to CAN/CGSB-1.40.

.15 Galvanized primer: one component, ready-mixed zinc rich.
.1 Acceptable product: Catha-Coat 13034 by Devoe Coating, or approved equivalent.

.16 Adhesive anchor bolts to be the tube injected system Hilti HIT-HY 200 V3 for drilled holes and Hilti HIT-RE 500 V3 Epoxy Adhesive for core drilled holes. Provide HAS-R 316SS, HAS-V-36 (standard) or HAS-V36-HDG (galvanized) threaded rods as noted on the drawings, or approved equivalent system. All adhesive anchor installation, including drilling of holes, preparation, storage, usage and curing to be in accordance with the written instructions and training as approved by the manufacturer.

2.2 Fabrication

.1 Workmanship and finish must be equal to the best practice of modern shops for each item of work.

.2 Build work square, true, straight and accurate to required size, with joints closely fitted and properly secured.

.3 Provide exposed surfaces with a smooth finish and sharp, well defined lines and arises. Form sections to shape and size shown with sharp lines and angles.

.4 Confirm castings have sharp corners and edges, and are clean, smooth and true to pattern.

.5 Make exposed welds continuous for length of each joint. File or grind exposed welds smooth and flush.

.6 Where possible, fit and shop assemble work, ready for installation.

.7 Fabricate structural steel in accordance with CSA S16, aluminum in accordance with S157, and in accordance with reviewed shop drawings.

2.3 Shop Painting

.1 Apply one (1) coat of primer to metal items, with exception of galvanized or concrete encased items.

.2 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is lower than 7°C.

.3 Prime after fabrication and before damage to surface occurs from weather or other exposure.

.4 Spray prime contact surfaces of field assembled, bolted, friction type joints with primer only. Do not brush primer after spraying.

.5 Do not prime metal within 50 mm of edge to be welded. Give unprotected steel one coat of approved protective coating after shop fabrication is completed.

.6 Protect machine finished or similar surfaces that are not to be coated, but that do require protection, with coating of rust inhibitive petroleum, molydenum disulphide, or other coating approved by the Consultant.

.7 Copy previous erection marks and weight marks on areas that have been shop primed.

2.4 Miscellaneous Metalwork Items

.1 Anchors, chemical adhesive anchors, bolts and inserts:

.1 Provide as required to fasten miscellaneous metal items to concrete or masonry.

.2 Where sizes, kinds and spacing of anchors are not indicated or specified, provide as necessary for the purpose as approved by Consultant.

.3 Hot-dip galvanize all anchors, bolts and inserts.

.2 Miscellaneous steel:

.1 Provide miscellaneous steel as required for equipment supports, angles, and steel framing to shape, size and details required.

.2 Galvanize miscellaneous steel items after fabrication.

.3 Pipe and valve supports: fabricated from steel plate, thickness indicated, galvanize after fabrication. Anchor into concrete floor slab as shown.

.4 Electrical and mechanical equipment supports: fabricate from structural steel channel, and plate to details indicated.

.5 Steel handrails and guards:

.1 Fabricate handrails, guardrails, and posts using diameter pipe formed to the shapes and size on the drawings. Pipe to conform to ASTM A53, grade B (Fy = 240MPa), schedule 80, galvanized.

.2 Make changes in direction with smooth radius curves. Mitre joints and weld flush.

.3 Fabricate posts from same materials as rail. Space and attach posts as shown.

.4 Fabricate kick plate using 6 mm thick plate confirming to CSA G40.21.

.5 Hot-dip galvanized steel assemblies unless otherwise noted.

.6 Safety swing gate: self-closing, spring loaded, single door, galvanized, width to suit guardrail opening. Acceptable product: Kee Gate as manufactured by Kee Safety LTD. or approved equivalent.

.6 Ladders: galvanized access ladders: fabricate ladder from steel sections to CSA G40.21, of shapes and sizes indicated. Galvanize after fabrication to CSA G164. Fasten to concrete with anchors as shown.

.7 Pipe and valve supports: fabricated from steel plate, thickness indicated, galvanize after fabrication. Anchor into concrete.

PART 3 - EXECUTION

3.1 Field Measurements

.1 Verify all dimensions and take whatever field measurements required prior to fabrication to assure that all items function properly when installed.

.2 Details of proposed departures due to field conditions or other causes to be submitted to the Consultant for approval.

3.2 Installation

.1 Install miscellaneous metal items in the locations shown on the Drawings.

.2 Install metalwork square, plumb and true using welded connections wherever possible to provide rigid structures. Provide anchor bolts, bolts and plates as necessary for connecting to structure of types acceptable to Consultant.

.3 Hand over items for casting into concrete to appropriate trades together with setting templates.

.4 Exposed fastening devices to match finish, and to be compatible with material thorough which they pass.

.5 Touch-up field welds, bolts, and burnt or scratched surfaces with primer after installation.

.6 Touch-up galvanized surfaces with zinc-rich primer.

END OF SECTION

PART 1 - GENERAL

1.1 General

.1 This section covers items common to all sections of Division 40, and is intended to supplement the requirements of Division 01.

1.2 Drawings

.1 The Drawings indicate the extent and general arrangement of the various systems and must be read in conjunction with these specifications. The Drawings are not to be considered as detailed as shop drawings but as a guide to the general intent based on the materials specified.

.2 Where field conditions necessitate departures from the Drawings, submit working drawings for the proposed departures to the Consultant for review prior to installation.

.3 Because of the small scale of the Drawings, it is not possible to indicate all offsets and accessories that may be required for the installation.

.4 Investigate carefully the, architectural, electrical, structural and finish conditions affecting this work and arrange details accordingly. Furnish and install items required to meet such conditions.

1.3 Reference Standards

.1 The work under this Section must conform to the applicable requirements of the National Building Code and National Plumbing Code of Canada, National Fire Protection Association, Underwriters Laboratories of Canada, and referenced standards throughout these Specifications of the American Water Works Association (AWWA), American National Standards Institute (ANSI), American Society of Mechanical Engineers (ASME), American Society of Testing and Materials (ASTM), Canadian Standards Association (CSA), the Canadian General Standards Board (CGSB), Canadian Gas Association (CGA) and the Sheet Metal and Air Conditioning Contractors' National Association Inc. (SMACNA).

.2 Equipment assemblies comprised of electro- mechanical components must be CSA approved where possible and bear the appropriate label. If the equipment in question is not CSA approved as an assembly, arrange and pay for "spot approval" and labelling of the equipment prior to installation.

.3 National Building Code of Canada (NBC), 2020 Edition.

1.4 Inspection / Permits

.1 All manufacturing operations and finished pipes, fittings and appurtenances will be subject to inspection by the Consultant. Furnish all labour necessary to assist the Owner or their inspectors in inspecting the materials.

.2 Obtain and pay for all permits required by local codes and regulatory bodies. Provide access and coordinate for inspection by local regulatory bodies at appropriate times during the execution of the Work.

1.5 Equipment Installation

.1 Provide unions and flanges to permit equipment maintenance and disassembly and to minimize disturbance to piping and duct systems without interfering with other equipment.

.2 Provide means of access for servicing equipment including permanently lubricated lifetime bearings.

.3 Pipe equipment drains to floor drains and/or as indicated.

.4 Install equipment, rectangular cleanouts and similar items parallel to or perpendicular to building lines.

1.6 Cutting and Patching

.1 Provide equipment and inserts in time to prevent cutting of new work.

.2 Coordinate and provide sizes of openings and locations (prior to work).

1.7 Anchor Bolts And Templates

.1 Supply anchor bolts and templates for installation by other divisions.

1.8 Protection Of Openings

.1 Protect equipment and systems openings from dirt, dust, and other foreign materials with materials appropriate to system.

1.9 Equipment Supports

.1 Equipment supports specified in Section 40 05 29 or shown on drawings.

1.10 Tests

.1 Give 24 h written notice of date for tests.

.2 Insulate or conceal work only after testing and approval by the Consultant.

.3 Conduct tests in presence of the Consultant or local authority having jurisdiction.

.4 Bear costs including retesting and making good.

.5 Piping:

.1 General: for hydraulic tests maintain test pressure without loss for 10 minutes unless otherwise specified. For tests using compressed gases, maintain test pressure for 2 hours without loss unless otherwise specified.

.2 Test drainage, waste and vent piping to the National Plumbing Code and/or the local authorities having jurisdiction.

.3 Test mechanical piping and service water piping to the National Plumbing Code at 1½ times system operating pressure or minimum 1050 kPa (150 psig), whichever is greater.

.4 Conduct disinfection and bacteria as per relevant AWWA standards.

.6 Equipment: test as specified in relevant sections.

.7 Prior to tests, remove or isolate all equipment or other parts which are not designed to withstand test pressures or test medium. Re-install after test is completed.

1.11 Painting

.1 Apply at least one (1) coat of corrosion resistant primer paint to ferrous supports and site fabricated work, including pipe hangers. Use zinc rich primer on galvanized materials.

.2 Prime and touch up marred finished paintwork to match original.

.3 Restore to new condition, finishes which have been damaged too extensively to be merely primed and touched up.

1.12 Special Tools

.1 Provide one (1) set of special tools required to service equipment as recommended by manufacturers.

1.13 Cooperation With Other Trades

.1 In areas where ducts, piping, and electrical fixtures are in close proximity to each other, cooperate fully with the other

trade in laying out the location of the Work.

.2 Report immediately to the Consultant for his comments areas of conflict. Do not install work until corrective measures are approved.

.3 Take special care with structural coordination.

.4 If required, prepare interference layout drawings prior to construction and submit these to the Consultant for review. These drawings shall clearly indicate all necessary associated trade work such as light fixtures, etc.

.5 Coordinate location and furnish all embedded items for installation in poured-in-place concrete and masonry.

1.14 Operation and Maintenance Manual

.1 Provide operation and maintenance data for incorporation into Maintenance Manuals in accordance with Section 01 78 00.

1.15 Shop Drawings and Product Data

.1 Submit shop drawings and product data in accordance with Section 01 33 00.

1.16 Cleaning

.1 Clean interior and exterior of all systems including piping distribution systems, pumps, process equipment, tanks, etc.

.2 Upon completion of testing, remove all test equipment and cap holes to satisfaction of the Consultant.

.3 In preparation for final acceptance, clean and refurbish all equipment, fixtures and trim and leave in operating condition in preparation for final acceptance.

.4 Leave all areas cleaned of debris and unused materials.

1.17 Guarantee

.1 Guarantee all work in accordance with General Conditions.

.2 Submit manufacturers' written extended guarantees to the Consultant within the Operations and Maintenance Manual.

PART 2 - PRODUCTS

.1 Not Used
.1 Not applicable

PART 3 - EXECUTION

.1 Not Used

.1 Not applicable

END OF SECTION

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 to complete all water, plumbing, and process piping, valves and connections to equipment as indicated on the Project Drawings.

.2 The Work includes, but is not necessarily limited to: the supply and installation of pipes, hangers and supports, fittings, valves, couplings, connections to equipment, pressure gauges, and all other appurtenances, and carrying out all disinfection and hydrostatic leakage tests.

.3 Provide pipes and appurtenances in accordance with details shown on the Drawings and confirm they are suitable for the purpose for which they are specified. Do not install any pipe until the manufacturer's name and test certificate have been submitted to the Consultant for approval.

1.2 Related Work

.1 Metal Fabrications: Section 05 50 00

1.3 Reference Standards

.1 ASME B16.1-2020, Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.

.2 ASME B31.3-2020, Process Piping.

.3 ASTM A126-04(R2019), Standard Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.

.4 ASTM D2564-20, Standard Specification for Solvent Cements for Poly(Vinyl Chloride)(PVC) Plastic Piping Systems.

.5 ANSI B16.1-2020, Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.

.6 ASTM A312/A312M-22, Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel.

.7 NSF 61-2022, Drinking Water System Components - Health Effects.

.8 AWWA C512-15, Air Release, Air/Vacuum, and Combination

Air Valves for Waterwork and Wastewater Service.

1.4 Intent

.1 The intent of these specifications is to provide the works fully complete in every detail for the purpose designated. Furnish any apparatus, appliance, material, or labour not herein specifically mentioned or included but requisite to the operation of the apparatus and equipment specified without additional expense to the Contract.

1.5 Shop Drawings

.1 Provide shop drawings for:
- .1 Pipe and fittings.
- .2 All valves.
- .3 Pressure gauges and accessories.

1.6 Product Data

.1 Submit product data in accordance with Section 01 33 00.

PART 2 - PRODUCTS

2.1 Stainless Steel (SS)

.1 Pipe material: stainless steel.

.2 Fabricate pipe from stainless steel to ASTM A312/A312M, Type 304L. Fabricate pipe and fittings for service up to 1000 kPa operating pressure and maximum 95°C, and supply in the following nominal wall thicknesses:
- .1 Up to 200 mm I.D. Schedule 10S.

.3 Fittings: elbows must be smooth flow I.D. design. Use fittings made from 304L stainless steel conforming to ASTM A312/A312M and with a wall thickness equal or greater than the pipe to meet working pressure requirements of the intended system. Elbows, tees, and other fittings to be flanged, butt-welded, or pre-fabricated grooved fittings compatible with specified groove-end couplings.

.4 Van-stone rings: 316L stainless steel conforming to ASTM A240 and pressed type with minimum 11 USS gauge thickness for pipe up to 300 mm.

.5 Backing flanges stainless steel to ANSI B16.1, Class 125.

.6 Joints: butt-welded, flanged, or grooved end.

.7 Minimize field welding of pipe.

.8 Grooved end couplings: victaulic style 89.
- .1 Coupling gaskets to be suitable for drinking water.
- .2 Use RX light-wall pipe roll set grooving tool to prepare pipe ends as recommended by the coupling manufacturer.

.9 Bolt assemblies must be stainless steel (bolts, nuts, washers).

.10 All materials that come into contact with water must be NSF approved.

2.2 Ball Valves

.1 Ball valves:
- .1 Size 25mm and smaller (stainless steel): three (3) piece body, 4150 kPa rated, full port ball valve with stainless steel balls and with threaded end connections.

2.3 Butterfly Valves

.1 Butterfly valves:
- .1 Cast iron or ductile iron with factory applied corrosion resistant coating. Seats of EPDM, suitable for use with drinking water (NSF-61 certified). Shafts to be one piece of 416 stainless steel, finish ground and polished with EPDM shaft seals. Provide shaft bushings above and below disk. Discs to be stainless steel or nylon-coated ductile iron. Disc to shaft connections to be type 316 stainless steel. Pins, shaft and disc of all valves to be individually machined and completely interchangeable.
  - .1 Provide lever handle for manual isolation valves.

PART 3 - EXECUTION

3.1 General

.1 Install pipe in accordance with ASME B31.3.

.2 Install piping in the locations indicated, and to the elevations and lines as shown on the Drawings.

.3 Cut pipes where necessary to obtain the exact location of

fittings or valves.

.4 Run piping as directly as practical and make provisions for expansion, jarring, vibrations and settling.

.5 In the installation of piping, do not cut girders, beams or other members of building in such a manner as to reduce strength of the girder, beam, or other member of the building below that required for the purpose for which it was intended.

.6 Run pipes to avoid conflicts between pipes of different functions. Where conflicts between pipe locations occur, process pipe will have precedence over plumbing and heating pressure pipes, gravity pipes will have precedence over pressure pipes and large diameter pressure pipes will have precedence over smaller diameter pipes. Notify the Consultant of conflicts. The Consultant will provide the resolution.

.7 Accomplish the loading, hauling, unloading of pipes and appurtenances without damage to the same. Dropping of pipe and appurtenances on the ground will not be permitted. The Contractor will be liable for any damage to the pipe or appurtenances until they are accepted in the completed work.

.8 Do not install any pipe until the manufacturer's name and test certificate have been submitted to the Consultant for approval.

.9 Provide clearance around systems, equipment and components for observation of operation, inspection, servicing, maintenance and as recommended by manufacturer.

.10 Provide space for disassembly, removal of equipment and components as recommended by manufacturer or as indicated (whichever is greater) without interrupting operation of other system, equipment, components.

3.2 Jointing Of Pipe and Fittings

.1 Where pipe is to be connected to equipment, fit pipe so that neither pipe nor equipment is strained during the joining procedure.

.2 Where flanged pipe and fittings are used, make joints with 3 mm Buna N or neoprene gaskets and bolts and nuts conforming to ASTM A307 for Grade B steel machine bolts and nuts. Tighten nuts alternately to a uniform torque to achieve even distribution of pressure on joint gasket and to

avoid unequal stresses in flanges. Provide sleeve coupling, flanged adapter, victaulic coupling or vic-flange couple where shown on the Drawings or where required to install pipe or to permit future equipment or pipe removal for maintenance purposes.

.1 Provide 304 stainless steel machine nuts and bolts for joints involving stainless steel pipe or in areas where nuts and bolts will not be painted.

.2 Provide EDPM gaskets on low pressure air piping subject to temperatures in excess of 65°C. This includes but is not limited to piping on the discharge side of blowers.

.3 Install grooved end product in accordance with the manufacturer's written installation instructions. Clean grooved ends so they are free from indentations, projections. Verify gaskets as suitable for the intended service prior to installation. Gaskets to be molded and produced by the coupling manufacturer. The grooved coupling manufacturer's factory trained representative must provide on-site training for Contractor's field personnel in the use of grooving tools, application of groove, and installation of grooved joint products. Have the manufacturer's representative periodically visit the jobsite and review installation. Remove and replace any joints deemed improperly installed.

.4 Install PVC pipe and fittings and join with solvent welding method in accordance with the manufacturer's instructions, using the correct solvent cement for the type of pipe used. Only use threaded joints at screwed end valves.

.5 Screwed pipes to be NPT. Make joints with graphite and oil filler and adequate unions provided for ease of future uncoupling. Ream cut ends of pipe to remove burrs.

.6 Install specialties and other like items in accordance with the manufacturer's written instructions. Provide small piping, or tubing, with fittings where required for their proper operation and servicing whether shown on the Drawings or not.

.7 Where PVC pipe joints or fitting joints have failed under test or during operation, repair the entire joint and repair with new material. Re-cementing failed joints will not be accepted.

3.3 Drains

.1 Install piping with grade in direction of flow except as indicated.

.2 Install drain valve at low points in piping systems, at

equipment and at section isolating valves.

.3 Pipe each drain valve discharge separately to above floor drain. Discharge to be visible.

.4 Drain valves: NPS 3/4 SS ball valves unless indicated otherwise, with hose end male thread, cap and chain.

3.4 Air Vents

.1 Install air vents at high points in piping systems.

.2 Install isolating valve at each automatic air valve.

.3 Install drain piping to approved location and terminate where discharge is visible.

.4 Equip automatic air vents with NPS 1/2 stainless steel isolation ball valves unless indicated otherwise.

3.5 Pipe Support

.1 Provide permanent support in accordance with Section 40 05 29.

.2 Restrain all pipe and fittings so that all thrusts are supported independent of the piping system.

.3 Coordinate support work. Confirm permanent supports are complete before any temporary support is removed.

.4 Provide pipe pads on piping as required for permanent supports.

3.6 Pipe Cleaning, Testing & Start-Up

.1 Flush and clean pipes upon completion and prior to testing.

.2 Pressure test piping as specified in Section 40 05 10.

.3 Remove air from system. Check air vents and drains for proper operation.

.4 Bring system up to pressure or temperature slowly. Monitor pipe movement. Adjust pipe supports, hangers, expansion joints as required. Re-tighten bolts or replace gaskets where necessary.

.5 Continue to monitor piping throughout start-up and commissioning.

3.7 Piping For Gauges and Instruments

.1 Fabricate and install piping, accessories and valve assemblies for pressure sensing gauges and transducers as indicated on the drawings.

.2 Provide isolation valves for all devices and run piping to prevent air pockets or sediment from accumulating in sensing lines.

.3 Unless otherwise indicated piping to be stainless steel schedule 10.

.4 Coordinate locations for gauges and instruments on piping layouts.

3.8 Cleanup

.1 Upon completion of testing, remove all test equipment and cap holes to satisfaction of the Consultant.

.2 Clean and refurbish all equipment and fixtures and leave in operating condition in preparation for final acceptance.

3.9 Non- Destructive Weld Examination

.1 Visually examine all welds for compliance with applicable codes.

END OF SECTION

PART 1 - GENERAL

1.1 Work Included

.1 This section specifies requirements for providing all labour, tools, equipment and materials to complete all identification for Division 40.

1.2 References

.1 CAN/CGSB-1.60-97 Interior Alkyd Gloss Enamel.

.2 CAN/CGSB-24.3-92, Identification of Piping Systems.

.3 Provide ULC and CSA registration plates as required by respective agency and inspection authority.

1.3 Samples

.1 Submit samples and lists of proposed wording for approval before engraving in accordance with Section 01 33 00.

PART 2 - PRODUCTS

2.1 Manufacturers Nameplates

.1 Provide metal nameplate on each piece of equipment, mechanically fastened complete with raised or recessed letters.

.2 Indicate size, equipment model, manufacturer's name, serial number, voltage, cycle, phase and HP of motors

2.2 System Nameplates and Process Equipment

.1 Colour:
- .1 Black letters, white background except where required otherwise by applicable codes.

.2 Construction:
- .1 3 mm thick, lamicoid plastic, square corners, letters accurately aligned and machine engraved into core.
- .2 Use size 17 mm x 100 mm for terminal cabinets and control panels with 5 mm letters.
- .3 Use size 35 mm x 150 mm with 17 mm letters for process equipment as specified.

2.3 Piping

.1 General:
- .1 To CAN/CGSB 24.3.
- .2 Identify medium by lettered legend, classification by primary and secondary colours, direction of flow by arrows.

.2 Material:
- .1 Paint: to CAN/CGSB for stencils.
- .2 Legend markers (labels), arrow and colour bands: plastic coated cloth material with protective overcoating and waterproof contact adhesive undercoating, suitable for 100% RH and continuous operating temperature of 150°C and intermittent temperature of 200°C. Apply to prepared surfaces. Wrap tape around pipe or pipe covering with ends overlapping one (1) pipe diameter.
- .3 Waterproof and heat resistant plastic marker tags: for pipes and tubing 19mm nominal and smaller.

.3 Sizes: legend and stencilled letters to be block capitals sized as follows:

Outside Pipe (Dia.)	Letter Size
Up to 30mm	13mm
50mm	19mm
150mm	32mm
250mm	63mm
Above 250mm	88mm

- .1 Arrows to be 150mm long to be 150mm long x 37 mm for pipes/insulation 40mm diameter, and greater; and 100mm long x 19mm high for pipes/insulation under 40mm diameter.
- .2 Color code of labelling described in this section to be as follows:
  - .1 Process streams:
    - .1 Well water: green label with white lettering.

.4 Provide identification at intervals not exceeding 3.0m and after valves and fittings and on common headers of packaged treatment skid piping.

2.4 Controls Identification

.1 Identify all systems, equipment, components, controls and sensors.

.2 Inscription to identify function and, where applicable fail-safe position.

PART 3 - EXECUTION

3.1 General

.1 Do identification work in accordance with CAN/CGSB-24.3 except where specified otherwise.

.2 Secure nameplates with aluminum or stainless steel pop-rivets or other mechanical fasteners. Do not use adhesives.

3.2 Location of Nameplates

.1 In conspicuous location to facilitate easy reading from operating floor and to properly identify equipment and/or system.

.2 Provide stand-offs for nameplates on hot surfaces and insulated surfaces.

.3 Do not insulate or paint over plates.

END OF SECTION

PART 1 - GENERAL

1.1 Work Included

.1 The Work of this Section consists of furnishing all materials, labour, tools and equipment and performing all operations necessary to complete insulation of process piping where indicated on the Drawings or as specified herein.

1.2 Related Sections

.1 Process Mechanical General Requirements: Section 40 05 10.

1.3 References

.1 ASTM C335/C335M-17, Standard Test Method for Steady-State Heat Transfer Properties of Pipe Insulation.

.2 ASTM C547-22a, Standard Specification for Mineral Fiber Pipe Insulation.

.3 CAN/CGSB 51-GP-52Ma-1989, Vapour Power, Jacket, Facing Material for Pipe, Duct and Equipment Thermal Insulation.

PART 2 - PRODUCTS

2.1 Pipe Insulation

.1 Application: for pipe sizes 25 mm and under: 25 mm insulation thickness, for pipe sizes over 25 mm use 38mm thick insulation.

.2 Material:

- .1 To ASTM C547, rigid mineral fiber sleeving for piping and CGSB 51-GP-52Ma, vapour barrier jacket and facing material.
- .2 Acceptable material: Owens Corning SSL-II; Knauf ASJ; Manson Alley-K-APT; Manville Micro Lok-AP-T; Fattal Fat-lock ASJ; Schuller.

.3 Thermal conductivity "k" must not exceed 0.035 watt/meter °k at 24°C mean temperature when tested in accordance with ASTM C335. Thickness:

	Nominal Pipe Sizes (NPS)	
	25mm under	32mm and over
Insulation Thickness	25mm	38mm

.4 Exterior surface to be enclosed with preformed 0.38 mm thick PVC (white) jacket complete with pre-formed elbows, sealant tape.

.1 Acceptable product: Manville-Zeston or approved equivalent.

2.2 Removable Pre-Fabricated Insulation And Enclosures

.1 Use removable pre-fabricated insulation and enclosures expansion joints, valves, and couplings.

.2 Design the removable pre-fabricated insulation and enclosures to permit the movement of expansion joints and periodic removal and replacement without damage to adjacent insulation.

.3 Insulation to be preformed, at a thickness to meet application requirements, to fit components. Enclosure to match adjacent pipe jacketing.

PART 3 - EXECUTION

3.1 Application

.1 Apply material in accordance with the manufacturer's specifications by skilled tradesmen regularly engaged in this type of work.

.2 Clean all surfaces to be insulated. Where paint has been applied, clean and dry the painted surface.

.3 All nameplates, code inspection plates or stampings must remain visible after the insulation has been applied. Bevel the surrounding insulation to suit.

.4 All jacketing must overlap by at least 40 mm, longitudinally and peripherally. Position all exterior jacketing to shed water. Caulk joints where necessary to eliminate ingress of water including atall joints with wall and floor penetrations.

.5 Prior to the supplier proceeding with the insulation, complete all hydrostatic testing, and have results approved by the

Consultant

3.2 Pipe and Fittings

.1 Straight Pipe Runs:
  .1 Use factory fabricated sections of insulation on all straight pipe runs. Firmly butt the ends together and seal.

.2 Fittings:
  .1 Fittings in general must be insulated either with pre-formed fitting covers or mitered segments, thickness of which is equal to that of the adjoining pipe insulation. Secure the segments with stainless steel banding. Firmly butt all ends together and seal.

.3 Flanges/couplings:
  .1 Insulate with removable sections so that the coupling or flange bolts and nuts can be removed without damage to the insulation.

.4 Valves:
  .1 Insulate with the mitered moulded sectional insulation or pre-formed coverings equivalent in thickness to the adjacent insulation. Taper the insulation on the valves at the top of the bonnet to expose the packing gland so that the gland bolts and nuts can be removed without damage to the insulation

3.3 Equipment

.1 Insulation:
  .1 Grooved or mitered to fit the shape of the equipment and held in place using banding. Use weld pins and speed washers on equipment only if written consent has been given by the equipment Vendor. Use insulating cement to cover high points of all irregularities and trowelled smooth.

.2 Jacketing: insulation to be covered with canvas cloth jacketing fabricated to the shape of the equipment.

3.4 Installation

.1 Preformed insulation must be sectional.

.2 Multi-layered insulation to have a staggered butt joint construction.

.3 Insulation for vertical pipe over NPS 3 to have insulation supports welded or bolted directly to the pipe above the

lowest pipe fitting. Thereafter, locate supports on 4.5 m centres.

.4 Terminate insulation for expansion joints in straight cut. Leave a void of 25 mm between terminations. Lightly pack this void with P3 flexible mineral insulation.

.5 Seal exposed ends and termination points and finish with insulating cement.

.6 Insulation on expansion joints and flexible hoses in piping must provide for adequate movement of expansion joints without damage to insulation or finishes.

.7 Install insulation and finish to permit easy disassembly and replacement to flanges, valves and other fittings without damage to adjacent insulation and finishes.

.8 Gouge out insulation where interferences prevent tight fit to pipe.

.9 Provide guides, saddles and shields with a full thickness of insulation.

.10 Trim saddles, supports, hangers, clamps and guides closely and seal with insulating cement.

.11 Do not damage insulation, finishes and jackets by pipe movement.

3.5 Fastenings

.1 Secure pipe insulation by tape at each end and the centre of each section, but not greater than 900 mm on centres.

END OF SECTION

PART 1 - GENERAL

1.1 Work Included

.1 The work includes providing all labour, tools, and additional equipment and materials necessary to complete the installation of two (2) ultraviolet disinfection systems. The Owner has purchased the ultraviolet systems from the Equipment Supplier. The system is to be installed by the Contractor and tested and commissioned by Equipment Supplier.

1.2 Intent

.1 The intent of these specifications is to provide the mechanical and electrical works fully complete in every detail for the purpose designated. Provide any apparatus, appliance, material, or labour not herein specifically mentioned or included but requisite to the installation of the equipment specified without additional expense to the Owner.

.2 Shop drawings are available for viewing upon request to the Consultant. Information contained in the shop drawings is to be considered supplemental to the contract documents.

1.3 Design Criteria (For Info)

.1 UV system to include two (2) UV reactors, operating in a duty/standby configuration, and may include either a single control panel or two (2) control panels as required by the system design. The UV reactors will contain low-pressure high output (LPHO) lamps and sleeves to achieve a 3rd party validated dose of 40 mJ/cm² at the design flow and UVT provided. The unit shall be equipped with online intensity monitoring, but may not include dose calculation. The unit will serve as the primary disinfection system for three municipal groundwater wells, and will be suited for this application based on previous successful reference applications and based on meeting all requirements of the Nova Scotia Treatment Standards for Municipal Drinking Water Systems (Appendix G.1). The operation of the wells will be continuous at a variable flow rate. The UV unit will receive a start/stop signal from the wellhead PLC, and provide a ‘ready’ signal to the main PLC to enable well pump operation. The UV unit will start and stop in conjunction with the wellhead. Should a lamp warm-up or cool down period be required, the well pump PLC will include a sufficient start/stop delay to allow the UV system to be fully functional before pumping begins. The UV unit will return single, minor, major and critical alarms to the main plant PLC and have detailed local alarm displays.

1.4 Submittals

.1 Provide submittals for any equipment ancillary or necessary for the operation to the UV disinfection system that is to be installed and supplied as a part of this Work.

PART 2 - PRODUCTS

2.1 Design

.1 The UV disinfection system has been pre-purchased by the Owner. Shop drawings are available for viewing upon request to the Consultant. Information contained in the shop drawings is to be considered supplemental to the contract documents.

PART 3 - EXECUTION

3.1 Delivery

.1 Owner-supplied equipment has been shipped to the Owner and is in off-site storage. The equipment will be delivered to the Place of Work at a mutually agreeable time by the Owner. Upon delivery to the Place of Work, the Contractor will be responsible for handling, protection and installation of the Equipment.

3.2 Installation

.1 Install the Owner-Supplied Equipment in strict adherence to the installation instructions provided in the Equipment O&M manual (Appendix A) shop drawings. Installation components include but are not limited to:

.1 UV reactors (x2)
.2 Control panels (x2)
.3 Mechanical connections (flanges, threaded connections, sanitary seals)
.4 Electrical connections (power and control cabling to panels, panel terminations, vendor cabling between reactors and panels).
.5 UV lamps and sleeves.

.2 Coordinate with the Equipment Supplier to confirm installation instructions and sequence.

.3 Refer to specification section 05 50 00 – METAL FABRICATIONS, Project Drawings and Equipment Supplier shop drawings for details on support structure fabrication, installation and mounting requirements for control panels and UV reactors.

3.3 Inspection and Start-up

.1 Each unit shall be “dry” commissioned by the Equipment Supplier prior to operation to confirm reactor, lamp and sleeve installation, followed by “wet” commissioning to confirm hydraulic operation, I/O and fouling trends. Coordinate with the

Equipment Supplier to provide on-site support during commissioning work, ensuring that wiring and mechanical connections are acceptable and correcting deficient work immediately to avoid rescheduling of commissioning work and associated costs. If the contractor fails to provide onsite support during the agreed commissioning period and deficient work delays the completion of commissioning, arrange and pay for the Equipment Supplier's representative to return to site once the deficiencies are corrected at no additional cost to the Owner.

END OF SECTION

Appendix A: Owner Supplied Equipment Details (UV Disinfection Systems)

AVAILABLE UPON EMAIL REQUEST:

CONTACT BBICKERTON@CBCL.CA

Tender No. T-MCC-2405

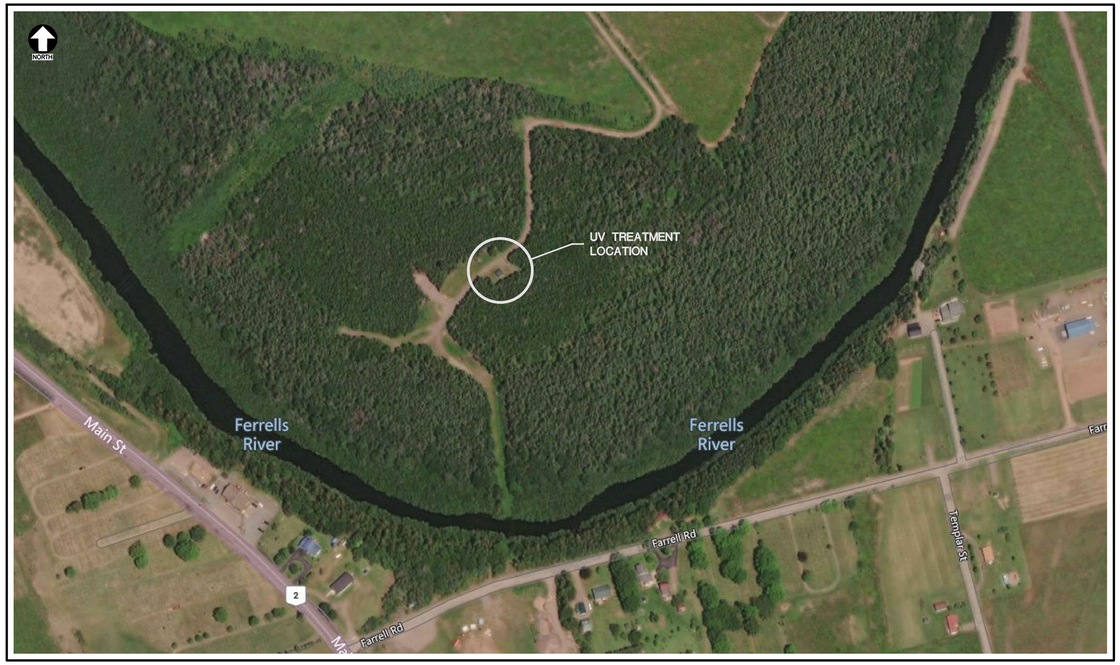
municipality of cumberland

PARRSBORO WATER SYSTEM

UV TREATMENT UPGRADE

DRAWING LIST

Dwg.	Drawing Title
COVER SHEET	
000	COVER SHEET
PROCESS	
P01	PIPING LAYOUT
ELECTRICAL	
E1	PLAN, DETAILS, SCHEDULE, BLOCK DIAGRAM AND LEGEND
E2	ELECTRICAL & INSTRUMENTATION SPECIFICATIONS

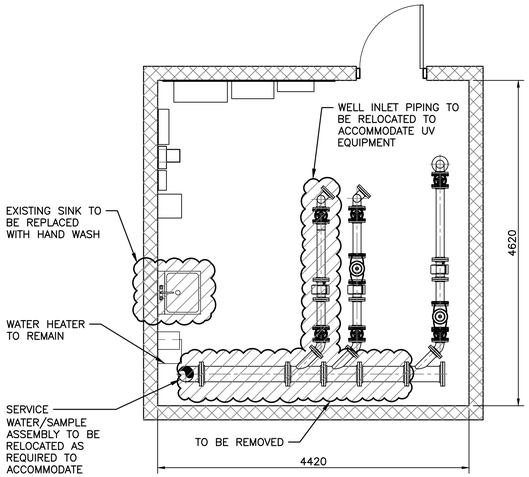


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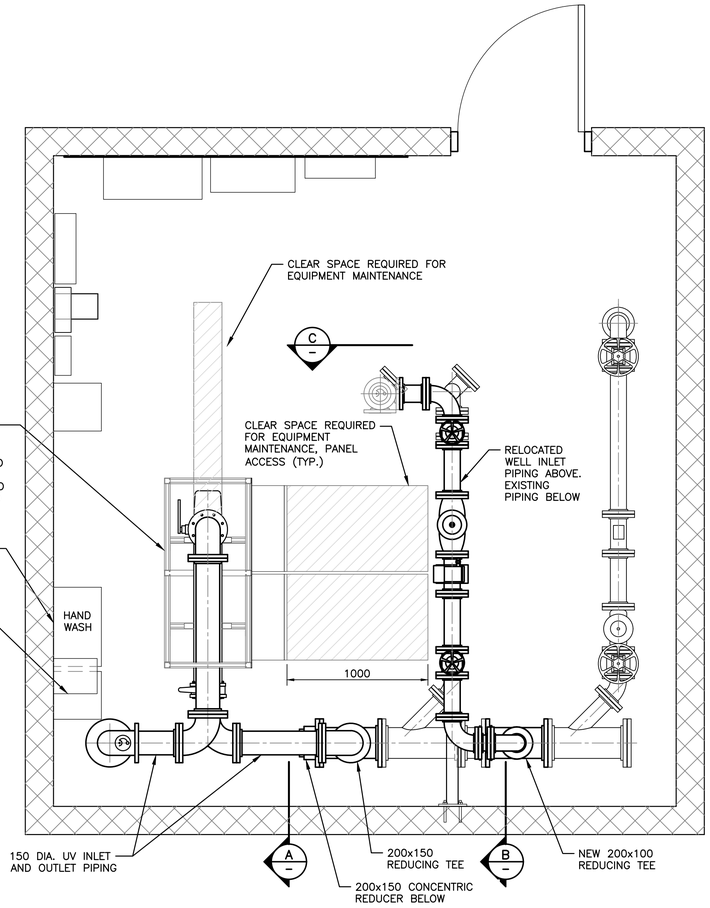
ISSUED FOR TENDER

JUL 04, 2024

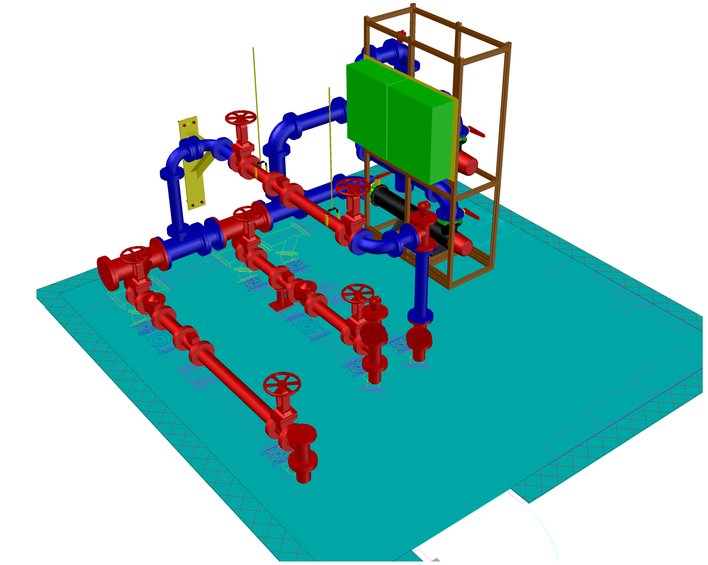
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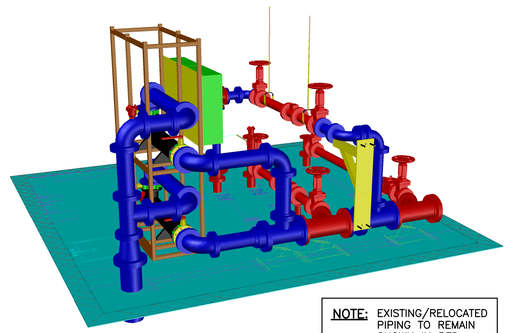


PLAN – EXISTING
1:40

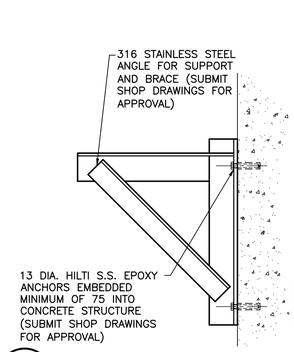


PLAN – NEW
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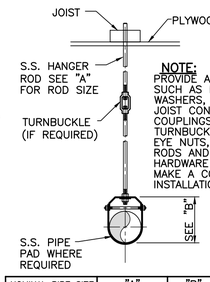




NOTE: EXISTING/RELOCATED PIPING TO REMAIN SHOWN IN RED



1 – DETAIL – PIPE SUPPORT
N.T.S. STAINLESS STEEL ANGLE BRACKET

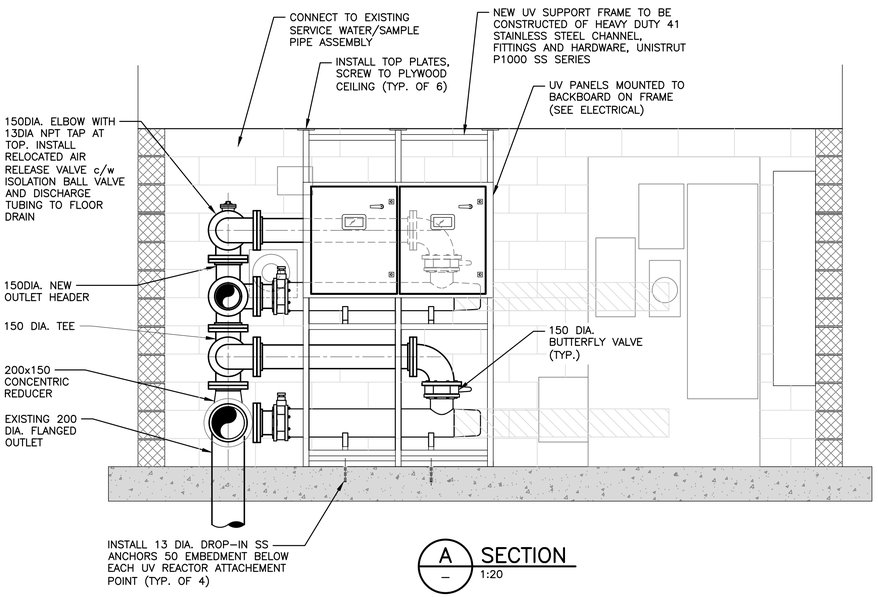


NOTE: PROVIDE ALL HARDWARE SUCH AS NUTS, WASHERS, BEAM LUGS, JOIST CONNECTORS, COUPLINGS, TURNBUCKLES, WELDLESS EYE NUTS, THREADED RODS AND ALL OTHER HARDWARE REQUIRED TO MAKE A COMPLETE INSTALLATION.

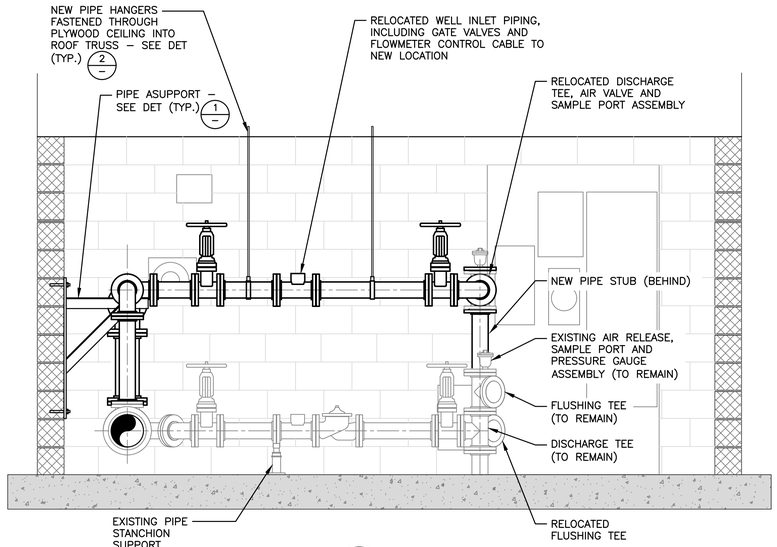
NOMINAL PIPE SIZE (NPS) SUPPORTED	"A" DIA.	"B" REF.	RECOMMENDED HANGER SPACING
100 (4")	16 (5/8")	191	4200 (14'–0")

USE PIPE PAD FOR S.S. I.D. GAUGE PIPE (SEE DETAIL)

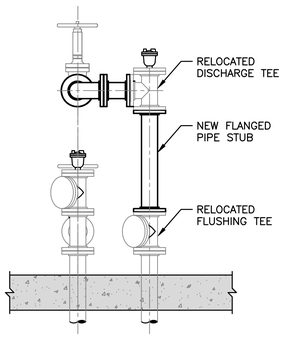
2 – DETAIL – CLEVIS HANGER
N.T.S. LIGHT DUTY PIPE HANGER



A – SECTION
1:20



B – SECTION
1:20



C – SECTION
1:20

NOTES:

1. DRAWINGS IN GENERAL ARE TO SCALE BUT FIGURED DIMENSIONS TAKE PRECEDENCE. THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR THE ACCURACY OF INFORMATION SCALED FROM THE DRAWINGS.
2. ALL DIMENSIONS USE METRIC UNITS. DIMENSIONS SHOWN IN MILLIMETERS AND POINT ELEVATIONS AS METERS (UNLESS NOTED OTHERWISE).
3. THE CONTRACTOR IS TO VISIT THE SITE AND REVIEW ALL SITE CONDITIONS. THE CONTRACTOR IS RESPONSIBLE TO CHECK AND VERIFY THAT ALL DIMENSIONS, ELEVATIONS, PIPE SIZES AND EQUIPMENT LOCATIONS ARE CORRECT, AND TO REPORT, IN WRITING, ANY DISCREPANCIES OR OMISSIONS TO THE ENGINEER PRIOR TO PROCEEDING WITH ANY WORK.
4. ALL WORK IS TO BE EXECUTED IN A SAFE AND ORDERLY MANNER. CONTRACTOR IS TO MAINTAIN A CLEAN JOBSITE AND REMOVE DEBRIS AND WASTE FROM THE SITE ON A DAILY BASIS. WASTE DISPOSAL TO BE IN ACCORDANCE WITH ENVIRONMENTAL REGULATIONS, AND IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. NO CHANGES OR REVISIONS TO THE WORK SHALL BE EXECUTED WITHOUT THE APPROVAL OF THE ENGINEER.
6. SHOP DRAWINGS FOR ALL COMPONENTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE PURCHASE OR USE.
7. ALL DISTURBED AREAS SHALL BE REINSTATED TO ORIGINAL CONDITION TO THE APPROVAL OF THE ENGINEER. ANY REPAIR TO EXISTING INFRASTRUCTURE DAMAGED DURING CONSTRUCTION SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
8. ALL SUPPORTS, HANGERS, BRACKETS AND ASSOCIATED HARDWARE WITHIN TANKS SHALL BE 316 STAINLESS STEEL UNLESS NOTED OTHERWISE.
9. DRAWINGS DO NOT INDICATE ALL EXISTING SITE SERVICES, PIPING, VALVES, CONDUIT, FITTINGS, ETC. AND LOCATION AS INDICATED ARE APPROXIMATE ONLY, CONTRACTOR TO VERIFY AS REQUIRED. TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGING OR DISTURBING EXISTING SYSTEMS AND SERVICES.
10. FOR DRAWING CLARITY, NOT ALL PIPING AND EQUIPMENT SUPPORTS ARE SHOWN.
11. ALL NEW PIPING TO BE 316L SS SCH10. JOINTS AND FITTINGS BE WELDED, FLANGED OR USING ROLL–GROOVED COUPLINGS WITH MATERIALS TO MATCH PIPING.
12. ALL MATERIALS SUPPLIED BY CONTRACTORS SHOULD BE NEW, UNLESS OTHERWISE NOTED.

No.	Description	Date	By
0	ISSUE FOR TENDER	JUL 04/24	EP

Revision or Issue

municipality of cumberland

PARRSBORO WATER SYSTEM

UV TREATMENT UPGRADE

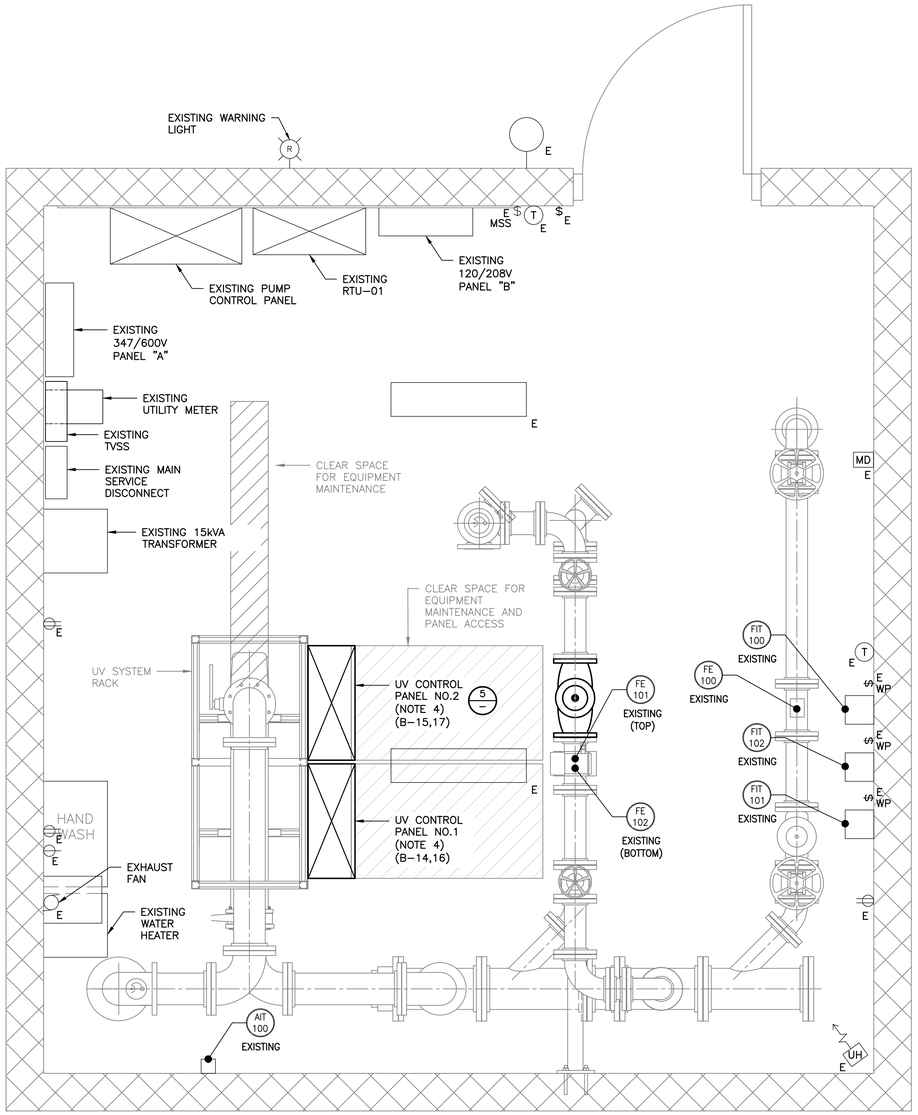
PROCESS

PIPING LAYOUT

CBCL

REGISTERED PROFESSIONAL ENGINEER – PROVINCE OF NOVA SCOTIA – DATE: June 4, 2024 – B. J. BICKERTON – 11131

CBCL No 230808.00	Contract No
Date	Scale AS NOTE
Designed IPC	Drawn DB
Checked BB	Approved
Sheet No 1 of 1	
Drawing No P01	



1 PLAN – EQUIPMENT LAYOUT

1:15

0 300 600 900 1200 1500mm

1:15

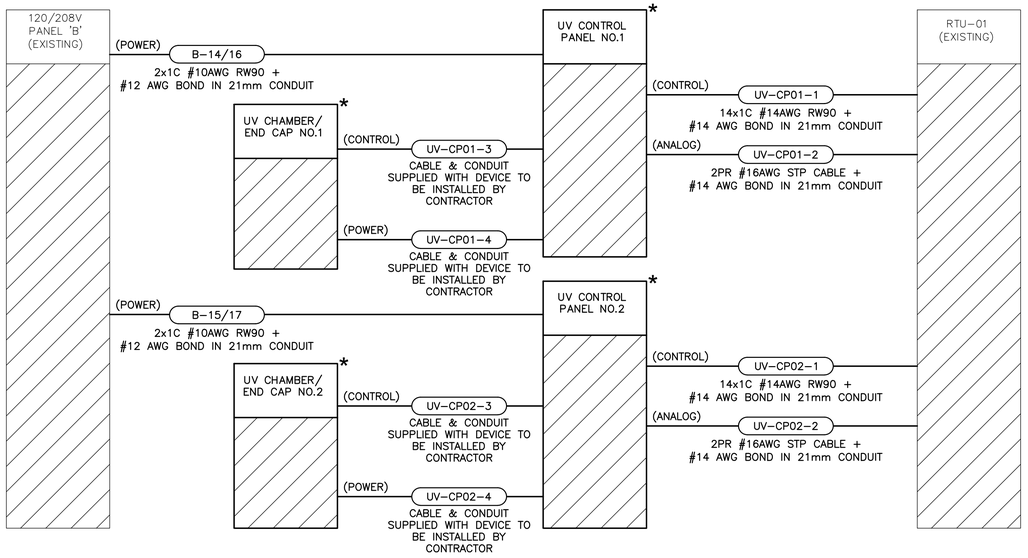
REMARKS	DESIGNATION	LOAD PH A	LOAD PH B	LOAD PH C	CIR. No.	BKR	A B C	BKR	CIR. No.	LOAD PH A	LOAD PH B	LOAD PH C	DESIGNATION	REMARKS
2	LIGHTING				1	15A		15A	2				BENCH RECEPTACLES	2
2	EXHAUST FAN				3	15A		15A	4				RECEPTACLES	2
2	CONTROL PANEL RECEPTACLE				5	15A		30A	6				UNIT HEATER	2
2	PUMP FAIL ALARM				7	20A		2P	8					2
2	FIT 100, 101, 102				9	15A		15A	10				RTU–01	2
2	HOT WATER TANK				11	20A		15A	12				TURBIDITY (AIT–100)	2
	SPARE				13	15A		20A	14	650W			UV CONTROL PANEL NO.1	3
3	UV CONTROL PANEL NO.2		650W		15	20A		2P	16		650W			
				650W	17	2P		–	18				SPACE	
	SPACE				19	–		–	20				SPACE	
	SPACE				21	–		–	22				SPACE	
	SPACE				23	–		–	24				SPACE	
	SPACE				25	–		–	26				SPACE	
	SPACE				27	–		–	28				SPACE	
	SPACE				29	–		–	30				SPACE	

POWER: 120/208V, 3PH., 4W, 60Hz
No. OF CCTS.: 30
PANEL: EXISTING PANEL 'B'
LOCATION: UV TREATMENT BLDG.
FED FROM: –
SYM. I.C.: – AMPS
MAINS: 225A AMPS
ENTER AT: TOP/BOTTOM MTG. SURFACE

PHASE A – _____
PHASE B – _____
PHASE C – _____

TOTAL LOAD: _____ KW. _____ AMP.

REMARKS: 1. EXISTING PANEL IS EATON CUTLER–HAMMER POW–R–LINE PRL1a
2. EXISTING CIRCUIT.
3. SUPPLY AND INSTALL NEW BREAKERS IN SPARE SLOTS.



2 BLOCK DIAGRAM – INSTRUMENTATION AND CONTROLS CABLING

N.T.S.

ANNOTATIONS / ABBREVIATIONS:

AI = ANALOG INPUT
AO = ANALOG OUTPUT
AIT = ANALYZER TRANSMITTER
DI = DIGITAL INPUT
DO = DIGITAL OUTPUT
E = EXISTING
FE = FLOW ELEMENT (SENSOR)
FIT = FLOW TRANSMITTER
RTU = REMOTE TERMINAL UNIT

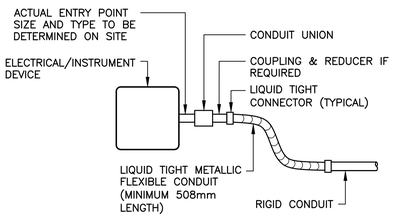
* INDICATES INSTRUMENTATION & CONTROLS EQUIPMENT PROVIDED BY OWNER AND FREE ISSUED TO THE SITE CONTRACTOR, FOR INSTALLATION, CABLING, TERMINATING & TESTING AS REQUIRED. CONTRACTOR TO REFER TO APPROVED VENDOR SHOP DRAWINGS. TO VERIFY CABLING REQUIREMENTS AND TERMINATION DETAILS.

NOTES:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS & SITE CONDITIONS.
2. ALL EQUIPMENT IS NEW UNLESS OTHERWISE NOTED. NOT ALL EXISTING EQUIPMENT ARE SHOWN ON THIS DRAWING.
3. ALL DIMENSIONS ARE SHOWN IN MILLIMETERS UNLESS NOTED OTHERWISE.
4. CONTRACTOR TO VERIFY FINAL EQUIPMENT LOCATION WITH OWNER'S REPRESENTATIVE.

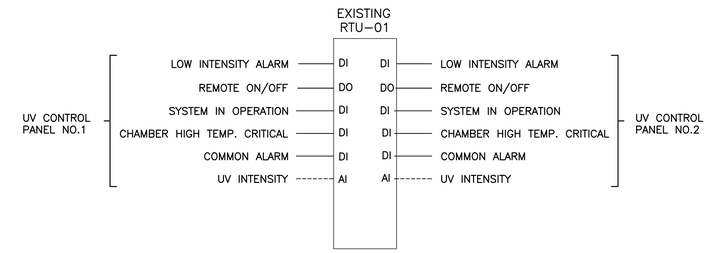
LEGEND:

- MOTOR (SINGLE PHASE)
- CONTROL PANEL
- MISCELLANEOUS EQUIPMENT (TYPE AS INDICATED)
- $^{MSS} MANUAL STARTER
- UH UNIT HEATER
- 15A, 120V, DUPLEX RECEPTACLE: TYPE 5–15R
- MD MOTORIZED DAMPER
- LIGHTING FIXTURE, WALL–MOUNTED
- LIGHTING FIXTURE, SURFACE–MOUNTED
- X WARNING LIGHT ("X"=COLOR AS INDICATED, G=GREEN; R=RED)
- $ SINGLE POLE, LINE VOLTAGE TOGGLE SWITCH
- T THERMOSTAT (LOW VOLTAGE)
- XXX YYY INSTRUMENT TAG NUMBER XXX = INSTRUMENT TYPE YYY = INSTRUMENT NUMBER



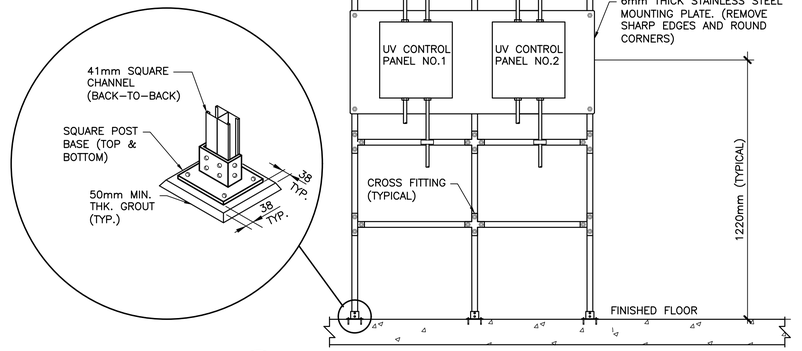
3 DETAIL – EQUIPMENT CONDUIT ENTRY (NON–HAZARDOUS)

N.T.S. TYP. FOR: GENERAL



4 DETAIL – PARTIAL I/O LIST (EXISTING RTU–01)

N.T.S.



5 DETAIL – EQUIPMENT MOUNTING STRUCTURE

N.T.S.

No.	Description	Date	By
0	ISSUED FOR TENDER	JUL 04/24	BF

Revision or Issue

municipality of cumberland

PARRSBORO WATER SYSTEM

UV TREATMENT UPGRADE

ELECTRICAL

PLAN, DETAILS, SCHEDULE, BLOCK DIAGRAM AND LEGEND

CBCL

REGISTERED PROFESSIONAL ENGINEER 2024-JUN-04 R. W. Kerr 12009 PROVINCE OF NOVA SCOTIA

CBCL No 230808.00	Contract No
Date APR 2024	Scale AS NOTED
Designed SG	Drawn GS
Checked JRK	Approved
Sheet No 1 of 2	
Drawing No E01	

ELECTRICAL SCOPE

1 GENERAL:

.1 THE SCOPE OF THE ELECTRICAL WORK INCLUDES, BUT IS NOT NECESSARILY LIMITED TO, THE SUPPLY, INSTALLATION AND PLACING INTO SERVICE OF THE WORK DESCRIBED ON THE DRAWINGS AND SPECIFICATIONS.
.2 ELECTRICAL DRAWINGS AND SPECIFICATIONS ARE TO BE READ IN CONJUNCTION WITH THOSE OF OTHER TRADES.
.3 ELECTRICAL CONTRACTOR SHALL REVIEW WORK DESCRIBED IN OTHER TRADE PACKAGES AND IDENTIFY AND INCLUDE ALL ELECTRICAL INTERCONNECTIONS TO EQUIPMENT PROVIDED BY OTHERS.
.4 PROVIDE ALL LABOUR, MATERIALS, EQUIPMENT, HARDWARE, TOOLS AND CONSUMABLES AS REQUIRED, DELIVERING A COMPLETE, FUNCTIONAL AND SAFE ELECTRICAL INSTALLATION.
.5 PLAN, SCHEDULE AND PERFORM WORK IN CO-OPERATION WITH OTHER TRADES.
.6 ALL EQUIPMENT, MATERIAL AND HARDWARE SHALL BE NEW AND APPROVED FOR THE PURPOSE BY A STANDARDS COUNCIL OF CANADA ACCREDITED AGENCY.
.7 GIVE ALL NOTICES, OBTAIN ALL PERMITS AND ARRANGE FOR ALL INSPECTIONS AS REQUIRED TO COMPLETE THE ELECTRICAL INSTALLATION.
.8 ELECTRICAL INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE CANADIAN ELECTRICAL CODE AND THE AUTHORITY HAVING JURISDICTION.
.9 EQUIPMENT AND MATERIAL TO BE CSA APPROVED OR CERTIFIED BY AN AGENCY APPROVED BY THE ELECTRICAL INSPECTION DEPARTMENT HAVING JURISDICTION.
.10 PROVIDE ALL LABOUR, TOOLS, INSTRUMENTS AND CONSUMABLES REQUIRED TO PERFORM THE TESTING, COMMISSIONING AND PLACING INTO SERVICE OF ALL ELECTRICAL EQUIPMENT AND SYSTEMS INCLUDING THE ELECTRICAL PORTIONS OF SYSTEMS PROVIDED BY OTHERS.
.11 PROVIDE SHOP DRAWINGS INDICATING PRODUCT INFORMATION. IN PARTICULAR, SUBMIT INFORMATION FOR:
  .1 CIRCUIT BREAKERS
  .2 CONTROL PANELS
.12 PROVIDE OWNER'S MANUALS.
.13 MAINTAIN ON SITE DRAWINGS ANNOTATED TO INDICATE ALL DEVIATIONS FROM THE CONSTRUCTION DRAWINGS. AT THE COMPLETION OF THE WORK, NEATLY TRANSFER THE INFORMATION TO ANOTHER SET OF DRAWINGS AND STAMP AS "AS BUILT", PROVIDE ONE SET OF 'AS BUILT' DRAWINGS IN OWNER'S MANUAL AND TWO (2) SETS TO THE OWNER.
.14 PROVIDE WARRANTY FOR WORKMANSHIP AND MATERIALS.
.15 RELOCATE ANY NEW DEVICE UP TO 1m AT NO ADDITIONAL COST OR CREDIT PROVIDED THE INFORMATION IS PROVIDED PRIOR TO INSTALLATION.
.16 SUBMIT TO THE ELECTRICAL INSPECTION AUTHORITY, MUNICIPAL AND SUPPLY AUTHORITY, THE DRAWINGS AND SPECIFICATIONS FOR EXAMINATION AND APPROVAL PRIOR TO START OF THE WORK. PROVIDE THE PLANS REVIEW REPORT IMMEDIATELY UPON RECEIPT.
.17 CONTROL SYSTEM INTEGRATION TO BE INCLUDED IN THE CONTRACT. CONTRACTOR TO ENGAGE OWNER'S SYSTEM INTEGRATOR (PENNECON).

WIRING METHODS

1 CONDUCTORS AND CABLING:

.1 ALL CONDUCTORS TO BE ELECTRICAL GRADE COPPER, STRANDED FOR #12AWG SIZES AND LARGER.
.2 INSULATION TO BE RW90 XLPE 600 V WITHOUT JACKET UNLESS OTHERWISE NOTED.
.3 ACCEPTABLE WIRING TYPES:
  .1 BUILDING WIRE MINIMUM SIZE #12AWG TYPE RW90.
  .2 BARE CONDUCTOR AND TYPE RW90 GREEN INSULATION FOR GROUNDING.
  .3 TYPE RW90 GREEN INSULATION FOR BONDING
  .4 FOR INSTRUMENTATION/SIGNAL, USE SINGLE OR MULTI-PAIRED (OR TRIAD) ACIC. INDIVIDUALLY AND OVERALL SHIELDED. #16 AWG STRANDED COPPER CONDUCTORS, 300V, XLPE INSULATION, WITH OVERALL PVC JACKET. FOR INSTRUMENTATION SIGNAL CABLES IN CONDUIT, USE SINGLE OR MULTI-PAIRED (OR TRIAD), INDIVIDUALLY AND OVERALL SHIELDED, #16 GAUGE COPPER CONDUCTORS, 600V, XLPE INSULATION, WITH OVERALL PVC JACKET.
  .5 FOR DIGITAL CONTROL USE MULTICONDUCTOR INDUSTRIAL CONTROL CABLE #14 AWG STRANDED COPPER CONDUCTORS 300V, TYPE RW90 WITH OVERALL PVC JACKET. ALTERNATIVELY, USE SINGLE CONDUCTOR #14 AWG STRANDED COPPER RW90, 600V.FOR 120VAC INSTRUMENTATION DIGITAL CONTROL WIRING IN CONDUITS, USE MULTICONDUCTOR INDUSTRIAL CONTROL CABLE, #14 GAUGE COPPER CONDUCTORS, 600V, TEW OR RW90 WITH OVERALL PVC JACKET.
  .6 TECK 90 CABLE CONDUCTORS TO BE, STRANDED COPPER, SIZE AND QUANTITY AND INDICATED., CHEMICALLY CROSS-LINKED THERMOSETTING POLYETHYLENE RATED RW90 100V, POLYVINYL CHLORIDE JACKET, ALUMINUM INTERLOCKING ARMOUR. OVERALL COVING TO BE POLYVINYL CHLORIDE (PVC), HEAT, FLAME AND MOISTURE RESISTANT MATERIAL, FT4 RATED, UV RESISTANT, BLACK COLOR.

2 RACEWAYS:

.1 ACCEPTABLE RACEWAY TYPES:
  .1 LIQUID TIGHT FLEXIBLE METAL CONDUIT.
  .2 THREADED RIGID ALUMINUM CONDUIT.
  .3 RIGID PVC CONDUIT, FT4 RATED.
  .4 ELECTRICAL METALLIC TUBING (EMT) LISTED BELOW.
.2 PROVIDE APPROPRIATE FITTINGS, COUPLINGS, BUSHINGS, ACCESSORIES AND SUPPORTS FOR EACH RACEWAY SYSTEM AS REQUIRED TO PROVIDE A COMPLETE INSTALLATION.
.3 ALL CONDUITS TO BE MINIMUM 21mm DIAMETER.

3 CONNECTORS FOR ARMOURED CABLES:

.1 CONNECTORS FOR ARMOURED CABLES TO BE DIE CAST ALUMINUM CONNECTORS SUITABLE FOR TECK 90 / ACIC CABLES AND COMPLETE WITH ALUMINUM LOCKNUT.

4 INSTALLATION:

.1 INSTALL CABLING AND RACEWAYS IN A NEAT AND PROFESSIONAL MANNER SO AS TO CONSERVE HEADROOM AND NOT INTERFERE WITH WORK OF OTHER TRADES.
.2 WHERE PRACTICABLE, ALL WIRING AND CONDUIT IS TO BE CONCEALED.
.3 INSTALL ABOVE GRADE WIRING PARALLEL OR PERPENDICULAR TO BUILDING STRUCTURE.
.4 USE STEEL FITTINGS AND COUPLINGS ON EMT. DIE CAST FITTINGS NOT ACCEPTABLE.
.5 INSTALL BONDING CONDUCTOR IN ALL RACEWAYS.
.6 USE EMT FOR ALL WIRING UNLESS NOTED OTHERWISE.
.7 USE LIQUID TIGHT FLEXIBLE CONDUIT FOR FINAL CONNECTION TO ALL MOTORS, INSTRUMENTS, TRANSFORMERS AND VIBRATING EQUIPMENT.
.8 USE RAIN TIGHT CONNECTORS AND COUPLINGS ON ALL VERTICAL RUNS OF EXPOSED CONDUIT.
.9 USE RIGID ALUMINUM CONDUIT FOR ALL EXTERIOR APPLICATIONS AND IN WET/DAMP LOCATIONS.
.10 USE RIGID PVC CONDUIT UNDERGROUND.
.11 MEGGER TEST CIRCUITS FOR SHORT CIRCUITS.
.12 TERMINATE WIRING AT MOTORS WITH CSA APPROVED MOTOR LEAD PIGTAIL SPLICE KIT COMPLETE WITH CRIMP TYPE COMPRESSION CONNECTORS.
.13 INSTALL CONDUIT EXPANSION FITTINGS WHERE CONDUITS EXIT GRADE.
.14 PROVIDE MINIMUM 300mm SPACING BETWEEN INSTRUMENTATION/CONTROLS CONDUITS AND 600V POWER CONDUITS. WHERE POSSIBLE, INSTRUMENTATION/CONTROLS CONDUIT ARE TO CROSS AT RIGHT ANGLES TO 600V POWER CONDUITS.

CIRCUIT BREAKERS

1 GENERAL:

.1 BOLT-ON MOULDED CASE CIRCUIT BREAKER, QUICK MAKE QUICK BREAK TYPE FOR MANUAL AND AUTOMATIC OPERATION.
.2 THERMAL AND MAGNETIC OPERATION.
.3 SIZED AS INDICATED ON THE DRAWINGS.
.4 MINIMUM INTERRUPTING RATING AS INDICATED.
.5 SAME MANUFACTURERS AS ASSOCIATED PANELBOARD.

2 INSTALLATION:

.1 INSTALL CIRCUIT BREAKERS IN PANELBOARDS AS INDICATED ON THE DRAWINGS.
.2 INSTALL CIRCUIT BREAKER LOCKS WHERE INDICATED.
.3 CIRCUIT BREAKERS TO BE APPROVED FOR INSTALLATION IN SPECIFIED PANELBOARD.

IDENTIFICATION

1 GENERAL

.1 ALL EQUIPMENT SHALL BE IDENTIFIED WITH A LAMICOID NAMEPLATE, BLACK LETTERING ON WHITE BACKGROUND AS DESCRIBED HEREIN INCLUDING BUT NOT LIMITED TO: CONTROL PANELS, TERMINATION JUNCTION BOXES AND INSTRUMENTS.

2 IDENTIFICATION

.1 CONTROL PANELS
  .1 INDICATE NAME OF PANEL, TAG NUMBER, SOURCE PANEL AND CIRCUIT FROM WHICH IT IS FED.

FIELD QUALITY CONTROL:

1 FIELD QUALITY CONTROL

.1 ALL ELECTRICAL WORK TO BE CARRIED OUT BY QUALIFIED, LICENSED ELECTRICIANS OR APPRENTICES AS PER THE APPLICABLE PROVINCIAL ACT.
.2 LOAD BALANCING:
  .1 MEASURE PHASE CURRENT TO PANELBOARD WITH NORMAL LOADS OPERATING AT TIME OF ACCEPTANCE. ADJUST BRANCH CIRCUIT CONNECTIONS AS REQUIRED TO OBTAIN BEST BALANCE OF CURRENT BETWEEN PHASES. RECORD CHANGES.
  .2 MEASURE PHASE VOLTAGES AT LOADS AND ADJUST TRANSFORMER TAPS TO WITHIN 2% OF RATED VOLTAGE OF EQUIPMENT.
.3 INSULATION RESISTANCE TESTING:
  .1 TEST CIRCUITS, FEEDERS, AND EQUIPMENT UP TO 300V WITH A 500V INSTRUMENT.
  .2 TEST 300-750V CIRCUITS, FEEDERS, AND EQUIPMENT WITH A 1000V INSTRUMENT.
  .3 TEST CIRCUITS, FEEDERS, AND EQUIPMENT OVER 750V WITH A 5000V INSTRUMENT, UNLESS INDICATED OTHERWISE.
  .4 CHECK RESISTANCE TO GROUND BEFORE ENERGIZING.
.4 PROVIDE INSTRUMENTS, METERS, EQUIPMENT, AND PERSONNEL REQUIRED TO CONDUCT TESTS DURING AND AT CONCLUSION OF PROJECT.
.5 SUBMIT TEST RESULTS FOR OWNER AND ENGINEER'S REVIEW.

JUNCTION, AND PULL BOXES

1 PRODUCTS

.1 JUNCTION AND PULL BOXES:
  .1 RATINGS AS INDICATED ON DRAWINGS.
  .2 BOXES IN EXTERIOR OR DAMP/WET LOCATIONS SHALL BE NEMA 4X APPROVED FOR THE APPLICATION AND SHALL HAVE A SEALING GASKET BETWEEN COVER AND CASE.
  .3 WELDED STEEL WITH SCREW-ON FLAT COVERS FOR SURFACE MOUNTING.
  .4 COVERS WITH 25mm EXTENSION ALL AROUND FOR FLUSH MOUNTING.
  .5 SIZE BOXES AS PER CEC REQUIREMENTS.

2 INSTALLATION

.1 INSTALL EQUIPMENT AS INDICATED.
.2 ENSURE EQUIPMENT IS SECURE, PLUMB, AND TRUE.
.3 INSTALL JUNCTION AND PULL BOXES IN INCONSPICUOUS BUT ACCESSIBLE LOCATIONS.
.4 INSTALL PULL BOXES WHERE REQUIRED TO ENSURE CABLE RUNS DO NOT EXCEED 30m OR TWO (2) 90 DEGREE BENDS BETWEEN BOXES.
.5 INSTALL TERMINAL LUGS IN SPLITTERS AND JUNCTION BOXES WHERE INDICATED.
.6 MAKE ALL CONNECTIONS INCLUDING GROUNDING AND BONDING.

CONTROL PANELS

1. GENERAL
  .1 REFER TO DRAWINGS FOR CONTROL PANEL BLOCK DIAGRAM.
  .2 EXISTING CONTROL PANEL TO BE RE-CERTIFIED AFTER MODIFICATIONS.
  .3 EXISTING CONTROL PANEL TO BE MODIFIED TO ADD THE FOLOWING:
    .1 MICRO850 DIGITAL INPUT AND OUTPUT PLUG-IN MODULE OR APPROVED EQUIVALENT.
    .2 MICRO850 ANALOG INPUT PLUG-IN MODULE OR APPROVED EQUIVALENT.
    .3 CONTROL FUSES: 300V, 30A ELECTRONIC FUSE MUST BE USED (MURR, PHEONIX CONTACT OR EQUIVALENT).
    .4 TERMINAL BLOCKS: 30A, 600V, #10-#26AWG WIRE RANGE, WEIDMULLER TYPE WDU4 SERIES OR APPROVED EQUIVALENT C/W MANUFACTURER ACCESSORIES. IDENTIFY TERMINAL BLOCKS.
    .5 PLASTIC WIRE DUCT, MINIMUM 50mm, SLOTTED, C/W REMOVABLE COVER.
  .4 MODIFICATIONS INSIDE EXISTING CONTROL PANELS TO BE COMPLETED BY OWNER'S SYSTEM INTEGRATOR (PENNECON).
.2 INSTALLATION
  .1 MAKE POWER AND CONTROL CONNECTIONS.
  .2 RE-TEST AND RE-COMMISSION CONTROL PANELS FOR A COMPLETE AND OPERATIONAL SYSTEM.
  .3 TEST AND VERIFY COMPLETED RTU I/O.
  .4 DOCUMENT AND PROVIDE HARDCOPY OF TEST RESULTS.

HANGERS AND SUPPORTS

1 GENERAL:

.1 PROVIDE AND INSTALL ALL INSERTS, HANGERS, ANCHORS, AND SUPPORTS REQUIRED FOR WORK TO BE INSTALLED BY THIS TRADE.
.2 SUPPORT EQUIPMENT, CABLES, AND CONDUIT USING CLIPS, SPRING-LOADED BOLTS, OR CABLE CLAMPS DESIGNED FOR PURPOSE AS ACCESSORIES TO BASIC CHANNEL MEMBERS.
.3 DO NOT USE SUPPORTS OR EQUIPMENT FOR CONDUIT OR CABLE SUPPORT THAT WERE INSTALLED BY OTHERS FOR OTHER PURPOSES.

No.	Description	Date	By
0	ISSUED FOR TENDER	JUL 04/24	BG

Revision or Issue

municipality of cumberland

PARRSBORO WATER SYSTEM

UV TREATMENT UPGRADE

ELECTRICAL

ELECTRICAL & INSTRUMENTATION SPECIFICATIONS

CBCL

REGISTERED PROFESSIONAL ENGINEER 2024-JUN-04 H. W. Kerr 12009 PROVINCE OF NOVA SCOTIA

CBCL No 230808.00	Contract No
Date APR 2024	Scale AS NOTED
Designed SG	Drawn GS
Checked JRK	Approved
Sheet No 2 of 2	
Drawing No E02	