TENDER
MILTONVALE WELLFIELD DEVELOPMENT
PHASE 2A: PRV CHAMBER UPGRADE
CITY OF CHARLOTTETOWN
SPECIFICATIONS

Consultant
Coles Associates Ltd.
Charlottetown, PEI
Project #131043

File #2019-159

January 21, 2020
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## Division 01 - GENERAL REQUIREMENTS

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1 General

1.1 LIST OF DRAWINGS

.1 C203a Pressure Reducing Valve Sections & Details (Kent Building Supplies)
.2 C203b Pressure Reducing Valve Sections & Details (Kent Building Supplies)

END OF SECTION
General

1.1 SUMMARY OF WORK

1. The work of this Phase of the Project includes the supply, installation and commissioning of equipment inside an existing Pressure Reducing Valve Chamber located along the east side of Route #2 (in front of Kent Building Supplies) as indicated and specified. This will include but not limited to:

1. Excavation and backfilling, sand bedding, sandstone, etc. as required for piping, electrical and communication conduits and as indicated;
2. Provision for site work, drain piping and other related site services;
3. Removal of exiting redundant components from inside the chamber and turn over to CW&SU;
4. Provision for piping, valving, metering, controls, communication and other miscellaneous items related to the operation of the Pressure Reducing Valve Chamber;
5. All the components are purchased and supplied by CW&SU except those listed and identified on the drawings, including miscellaneous parts to complete the work, are to be supplied by the Contractor;
6. Provision for testing and commissioning for a complete and fully operational system;
7. Provision for SCADA system, programming and radio communication will be provided by a separate contractor working directly for CW&SU;
8. Traffic control and traffic management during construction;
9. Environmental Protection;
10. All related sitework and other miscellaneous items associated with this Phase of the Project including reinstatement of pavement and landscaping.

2. All in accordance with the requirements of the specifications and drawings listed on the Index of Specifications and Drawings.

3. The work included under this Phase of the Project is subject to various permitting and approval from Authorities Having Jurisdiction including but not limited to:

1. Approval from the PEI Department of Environment, Water & Climate Change as it relates to the upgrades of the PRV Chamber and associated work;
2. City of Charlottetown Council Approval.

4. All charges by utility companies including but not limited to: Maritime Electric Company Ltd, BellAliant, Eastlink, and Charlottetown Water & Sewer Utility, relating to the relocation and/or connection to existing services, etc. shall be included in the Tender Price.

1.2 ENQUIRIES

1. Direct all enquiries during the tender period to:
   City of Charlottetown
   Attention: Stephen Wedlock, Controller
   E-mail: swedlock@charlottetown.ca

2. All enquiries must be directed in writing via email no less than three (3) business days prior to tender close.

1.3 TENDERING PROCEDURE

1. General Contractors: Submit their tender for the entire work of this Contract, INCLUDING the work of all subcontractors, directly to the Owner in accordance with the requirements of the Invitation to Tender and this specification.

2. Tenders shall be submitted by completing the Bid Form and placing it in a sealed
envelope, clearly marked on the outside, "Tender for Miltonvale Wellfield Phase 2A: PRV Chamber Upgrade; Attention Controller; 3rd Floor City Hall," and must be delivered to the 3rd Floor of City Hall, 199 Queen Street, Charlottetown PE, C1A 4B7, and received by the Controller before 2:00:00 pm local time on February 4, 2020. The City of Charlottetown will not be obligated in any way by the Proponent's response to the Request for Tender. The Proponent's submission and all supporting documents will remain with the City and will not be returned. Proponent costs related to preparing and issuing the Tender response are entirely the responsibility of the Proponent. All such documentation may be reproduced by the City, provided that such reproduction is made solely for internal use or for any purpose required by law. This Tender creates no obligation on the part of the City of Charlottetown to award the contract or to reimburse proponents for tender preparation expenses. The City of Charlottetown reserves the right to accept or reject any and all submissions, in whole or in part, received as a result of this request, and to negotiate in any manner necessary to best serve the interest of the project.

3 Any addenda will be posted on the City of Charlottetown website: www.charlottetown.ca/tenders
Bidders are responsible for checking the website for proposal/quote/tender notices, documents, and addenda. The City is not responsible for ensuring bidders have obtained addenda.

4 No telegraph/fax/e-mail quotation forms will be considered.

1.4 SPECIFICATION EXPLANATION

1 Whenever the words "as shown," "as noted," "as called for," "indicated," or similar phrases are used, they shall be understood to refer to this specification and/or the accompanying drawings and addenda.

2 The words "provided", "install" or similar words shall mean the work described shall be completely supplied, and erected or installed by the Contractor, unless otherwise noted.

3 All materials are to be new unless noted otherwise.

1.5 EXAMINATION OF SITE

1 All bidders submitting tenders for this work shall first examine the site and all conditions thereon and/or therein, including:

1 Existing site conditions visually evident at the time of tender upon which the Work of this Contract will be installed.

2 Conditions attached to, abutting against, or in any other way affected by existing conditions.

2 All tenders shall take into consideration all such conditions as may affect the work under this Contract.

3 No extra payment will be made to the Contractor, above the Contract Price, for costs resultant from failure to determine the conditions that affect the Work.

1.6 EXISTING CONDITIONS

1 If in the performance of the contract, subsurface or latent conditions at the site are found to be materially different from those indicated by the drawings and specifications, or unknown conditions not usually inherent in work of the character shown and specified, the attention of the Owner shall be called immediately in writing to such conditions before they are disturbed. Upon such notice or resulting from his own observation of such conditions the Consultant shall promptly make such changes in the drawings and specifications as he finds necessary to conform to the different conditions. There shall be no changes in the tender price as a result of site conditions.

1.7 DOCUMENT INTERPRETATION

1 The Consultant's interpretation of Contract Documents shall be final.
2 Should the Bidder find discrepancies in, or omissions from the drawings, specifications or other tender documents, or be in doubt as to their meaning or interpretation, the Bidder should at once notify the Consultant in writing for clarification.

3 Any instructions or clarifications to Bidders issued during the period of bidding will be in the form of Addenda and are to be included in the tender. Addenda will form part of the Contract Documents.

4 The Owner, User Groups or Consultant will not be responsible for verbal instructions.

5 Every effort will be made to issue addenda not less than THREE (3) business days prior to the time for the closing of tenders, at the Owner's discretion.

1.8 PREPARATION AND SUBMISSION OF BIDS

1 Contractors shall submit their bids on the Bid Form provided which will be received at the time and place indicated on the Invitation to Tender. Late tenders will not be accepted and will be returned unopened to the bidder.

2 Bidders shall fill in all information requested on the Bid Form.

1 This form must be completely filled out in ink, or be typewritten with the signature in longhand. The completed forms shall be without interlineation, alteration or erasure.

2 Failure to fill in the Bid Form, as provided, in its entirety may result in the rejection of the bid; however, bidders are not obligated to provide alternative prices to products listed on the Appendix provided for that specific purpose, as part of the Bid Form.

3 Tender amount shall be stated both in writing and in figures.

4 Signatures shall be without alteration or erasure.

5 Additions, alterations, deletions or other irregularities in the bid form may, but will not necessarily, result in the Owner's rejection of the bid. The bidder acknowledges that it shall have no claim against, or entitlement to damages from, the Owner by reason of the Owner's rejection of its bid or of all bids.

6 Tenders that contain prices which appear to be so unbalanced as likely to adversely affect the interests of the Owner may be rejected. Wherever in a tender, that an amount tendered for an item does not agree with the extension of the estimated quantity and the tendered unit price, the unit price shall govern and the amount shall be corrected accordingly. If a Bidder has not entered a price for an item or work set out in the Form of Tender, he shall, unless he has specifically stated otherwise in his tender, be deemed to have allowed elsewhere in the Form of Tender for the cost of carrying out the said item or work, unless agreed by the Owner no increase shall be made in the total tender price on account of such omission.

3 Each tender submitted will be accepted on the understanding that it covers all the Work called for in the specifications and on the drawings, regardless of any notations by Bidder that certain parts of the required Work are omitted from their proposal.

4 Each bid must:

1 Give the full business address of the Bidder and must be signed by him with his usual signature.

2 Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name followed by the signature and designation of the person signing.

3 Bids by corporations must be signed with the legal name of the corporation, followed by the name of the Province of incorporation, and by the signature designation of the president, secretary, or other person authorized to bind it in the matter. The name of each person signed shall also be typed or printed below the signature.

4 A bid by a person who affixes to his signature the word "president," "secretary,"
or "agent," or other designation, without disclosing his principal, may be held to be the bid of the individual signing on behalf of the corporation.

.5 A bid of any individual or any group of individuals operating as co-partners or the bid of any corporation which may be submitted shall be executed and authorized so that it shall be and it will constitute a legal binding act of the persons, co-partners, or corporate entity making the bid.

.5 Bidders shall include with their tender, in the space designated in Section 00 41 13 - Bid Form, Appendix A, the name of each Subcontractor and/or Supplier, as designated, whose price has been included in their tender and who will perform the trade work. Substitution for another Subcontractor in the event that the listed Subcontractor is unable to do the work shall be subject to the approval of the Owner and contingent on evidence satisfactory to the Owner that the original Subcontractor's price was legitimately carried in the Tender, and that the original Subcontractor is now incapable of carrying out the work required under the subcontract, or that he refuses to carry out the work and provides documented reasons for such incapacity or refusal.

.6 The term "Own Forces," as a Subcontractor, may be used by a Bidder where the Bidder is equipped to and in fact normally carries out the trade work using employees in the direct employment of the Contractor or a wholly owned subsidiary company. Other designations such as "Own Estimate" are unacceptable and may be cause for rejection of the tender by the Owner.

.7 When a Bidder indicates "Own Forces" as a Subcontractor, the Bidder may be required to demonstrate to the Owner that he has the resources, experience and employees necessary, available and qualified to perform the trade work in a manner and quality satisfactory to fulfill the obligations of the Contract Documents and that the trade work is a normal and continual part of his business operation.

.8 A Bidder, whose tender is accepted, that included "Own Forces" for a subcontract will if requested, provide the Owner with payroll records verifying that the employees carrying out the "Own Forces" subcontract work are direct employees of the Contractor or of a wholly owned subsidiary company of the Contractor.

.9 Each bidder shall be prepared, if so requested by the Owner, prior to the award of the Contract to present evidence of his experience, qualifications and financial ability to carry out the terms of the Contract.

.10 Bidders may, at their own discretion, submit Alternatives to items identified as "Acceptable Material".

.1 All proposed Alternatives shall be listed in Appendix "B", ALTERNATIVE PRICES and be identified by name and model number where applicable and each Alternative shall have an associated tender price change "INCREASED BY" $_______ or "DECREASED BY" $_______ or "N/A," as compared with the "Acceptable Material" item carried in the tender amount.

.2 Alternate prices will include ALL related costs associated with charges from Accepted Material. No additional costs will be accepted for failure of the Contractor to identify the full impact of using alternate systems.

.3 Alternate prices will NOT be used in determining the tender price or as the basis for awarding the tender.

.11 Bidders are to complete any other Appendices forming part of the Bid Form as directed under Section 00 41 13 - Form of Tender.

.12 Tender Forms and accompanying documents shall be enclosed in a sealed envelope marked "TENDER" and bearing the following identification.

.1 Name of project.

.2 Name of Contractor submitting tender.

.13 Envelope to be addressed to the recipient of tenders indicated in the Invitation to Tender and delivered by hand, registered mail or courier.

.14 Two (2) copies of the submission document is required. No fax, email or electronic
documents will be accepted as the sole method of submission although an electronic copy (PDF or Microsoft WORD) of the proposal would be appreciated either included in the envelope noted above or e-mailed following the closing date and time. It is the proponent's responsibility to ensure that the hard copies of their submission are received prior to the deadline noted above.

1.15 Accompanying the Bid Form shall be:

1.1 One (1) copy of Bid Guarantee, together with Surety's Letter of Consent, as specified.

1.2 One (1) copy of a preliminary schedule demonstrating the full scope of work to be completed within the identified time allowed for the completion of the contract work.

1.16 Tender forms and securities must bear original signatures.

1.17 Where the bid amount is shown in both written words and number and the two are in conflict, written words will take precedence.

1.9 BID GUARANTEES

1.1 Each tender submitted shall be accompanied by the following Security:

1.1 For a General Contract Tender including all Subtrades:

1.1 A Security Deposit in the form a Certified Cheque, in an amount not less than ten per cent (10%) of the Bid Amount including applicable taxes; OR

1.2 A Bid Bond only issued by a recognized bonding company, in an amount not less than ten per cent (10%) of the Bid Amount including applicable taxes.

1.2 The Certified Cheque or Bid Bond shall be made payable to the Owner (Charlottetown Water & Sewer Utility).

1.3 The Certified Cheque or Bid Bond will guarantee that:

1.1 The Bidder will not withdraw the bid for the period indicated on the Bid Form, following the schedule closing time of the receipt of bids, and

1.2 The Bidder will enter into a formal agreement with the Owner in accordance with the agreement included as part of the Contract Documents, and

1.3 The required Certified Cheque or Bid Bond as Contract Security will be provided to the Owner, and

1.4 In the event of withdrawal of said bid within said period, or the failure to enter into said Agreement and give said contract security within ten (10) days after notice of the acceptance of the bid, the Bidder shall be liable to the Owner for the full amount of the bid guarantee as representing the liquidating damages to the Owner on account of the default of the Bidder in any particular hereof and shall not be construed as a penalty.

1.4 Bid Bonds or Security Deposits will be returned to all except the three (3) lowest Bidders within three (3) days after the opening of tenders. The remaining non-successful Bid Bonds or Security Deposits will be mailed to Bidders the earlier of sixty (60) days of opening the tenders and two (2) days after Council has awarded the tender.

1.5 Bonds and Letters of Surety, provided by General Contractors to the Owner shall be from a recognized Surety Company.

1.6 Only Bid Bonds issued by insurers, licensed in Canada and authorized to do business in the Province of Prince Edward Island, will be accepted.

1.7 Security Deposits provided by General Contractors:

1.1 Must be in the form of a Certified Cheque or Canadian Bank Draft drawn on a bank to which the Bank Act applies or a Credit Union, payable to the Owner, OR

1.2 Security Deposits submitted by Subcontractors to General Contractors, shall be in a form satisfactory to the General Contractor.

1.3 No interest will be paid to either the successful or unsuccessful bidders for any
form of Bid Guarantee.

1.10 CONTRACT SECURITY

.1 Upon award of a Contract, the Contractor shall provide the following Contract Security:
   .1 A Performance Bond and a Labour and Materials Bond, each in the amount of fifty per cent (50%) of the total Bid Amount, including applicable taxes, or
   .2 A Security Deposit in the form of a Certified Cheque, in an amount not less than ten per cent (10%) of the total Bid Amount, including applicable taxes.

.2 All Bonds provided by General Contractors, are to be made payable to the Owner.

.3 Bonds shall be from a recognized Surety Company, licensed in Canada and authorized to do business in the Province of Prince Edward Island.

.4 If a Performance Bond is utilized, it shall be maintained in force for a period of not less than twelve (12) months after the issuance of the Total Performance Certificate.

.5 Security Deposits, provided by the General Contractor:
   .1 Must be in the form of a Certified Cheque drawn on a bank to which the Canadian Bank Act applies, or a Credit Union, payable to the Owner.

.6 Contract Security shall be provided at the expense of the General Contractor. Cheques or Bank Drafts shall be drawn on an account with recognized Financial Institutions.

.7 Contract Security submitted by Subcontractors to General Contractors, shall be in a form acceptable to the General Contractor.

.8 No interest will be paid to the successful Contractor on any form of Contract Security.

.9 If in accordance with the Contract Security requirements the successful Contractor has used a certified cheque as Contract Security, at the request of the Contractor the cheque will either be deposited in a safety deposit box in a bank without interest or cashed and deposited in an account to which the Canadian Bank Act applies and held with interest until the date of Substantial Performance for the Contract as defined under Definition Definition 19 of CCDC2-2008. Subject to the Work being acceptable to the Owner and Consultant it will be returned to the Trade Contractor.

1.11 RECEIPT AND OPENING OF BIDS

.1 Bids will be opened publicly at the time and place stated in the Invitation to Tender. The officer whose duty it is to open them will decide when the specified time has arrived. No responsibility will attach to any officer for the premature opening of a bid not properly addressed and identified.

.2 Telegraphed, telephoned, emailed or facsimile transmitted bids will not be considered.

1.12 ADJUSTMENT AND WITHDRAWAL OF BIDS

.1 A Bidder who has already submitted a bid may submit a further bid at any time up to the official closing time. The last submission received shall supersede and invalidate all submissions previously submitted by that bidder for this tender. Any bidder may withdraw or qualify his/her submission at any time up to the official closing time by re-submitting a new bid to the City. The time and date of receipt will be marked thereon and the new submission will be placed in the tender box. The new submission shall be marked on the sealed envelope by the Bidder as “Resubmission #” along with the name of the tender and to the attention of the Controller, as noted above in the tender. Bids may be withdrawn at any time prior to opening upon written request from the bidder. Negligence on the part of the bidder in preparing his/her bid shall not constitute a right to withdraw a bid subsequent to the bid opening.

1.13 AWARD OF CONTRACT

.1 The Contract, if awarded, will be awarded by City Council as promptly after the opening of bids as is possible, and at the discretion of the Owner. The award date will not extend beyond the period indicated on the Bid Form following the scheduled time of tender.
closing, without first obtaining permission of the three (3) low bidders, or low bidder only, at the discretion of the Owner.

.2 The Form of Agreement, (Contract) which the successful Bidder will be required to enter into with the Owner, may be seen on application to the Consultant. The drawings, specifications and any addenda issued during the tender period, will be suitably marked for identification at the time the Form of Agreement is signed by both parties, shall be considered as being included in the Contract, together with the completed Bid Form and are hereinafter referred to as the "Contract Documents." All of these documents shall be read together and construed as one document. Following execution of the Contract, the Contractor shall receive from the Owner one (1) complete signed set of Contract Documents.

.3 Final award of Contract shall be subject to approval of all agencies having direct interest in the project.

.4 The award will be posted on the City's tender site.

1.14 REJECTION OF BIDS

.1 The Owner reserves the right to reject any and all bids.

.2 The lowest of any bid will not necessarily be accepted.

.3 Bids submitted which indicate "own forces" for subcontract work, that in the opinion of the Owner cannot be successfully completed by the Contractor's employees will not be accepted.

.4 Bids not submitted on the required form will be rejected.

.5 Bids which are incomplete or qualified will be rejected.

.6 All Bidders acknowledge that they shall have no claim against, or entitlement to damages from the Owner or Consultant by reason of the Owner's rejection of their individual bids or all bids.

.7 At the election of the Owner, whether or not a bid or bidder otherwise satisfies the requirements of a tender, the Owner may reject summarily any bid received from a corporation or other person which has been anywise involved in litigation, arbitration or alternative dispute resolution with the Owner within the five (5) year period immediately preceding the date on which the request for tender was published.

.8 Submissions will not be evaluated if the Bidder's current or past corporate or other interests may, in the City's opinion, give rise to a conflict in connection with this project.

.9 The Owner's evaluation may include information provided by the bidder's references and may also consider the proponent's past performance on previous contracts with the Owner or other institutions.

.10 The Owner may prohibit a bidder from participating in a procurement process based on past performance or based on inappropriate conduct in a prior procurement process, and such inappropriate conduct shall include but not be limited to the following: (a) the submission of bids containing misrepresentations or any other inaccurate, misleading or incomplete information; (b) the refusal of the bidder to honour its pricing or other commitments made in its bid; or (c) any other conduct, situation or circumstance, as solely determined by the Owner.

.11 The Owner may, by written notice to a bidder, reject any submission if it is found by the Owner that gratuities, in the form of entertainment, gifts, or otherwise, were offered or given by the bidder, or the agent or representative of the bidder, to any employee or agent of the project that in the Owner's opinion have been offered or provided with a view toward securing favorable treatment with respect to the awarding or amending, or making any determinations with respect to being selected as the successful bidder. Bidders must declare to the Owner where there is a potential or real conflict of interest. The Owner will take whatever steps it deems necessary to manage the potential or real conflict of interest up to and including rejection of a bid. If, during the term of the Contract, a conflict or risk of conflict of interest arises, the Contractor will notify the City...
immediately in writing of that conflict or risk and take any steps that the City reasonably requires to resolve the conflict or deal with the risk.

.12 The Owner specifically reserves the right to reject all tenders if none is considered to be satisfactory and, in that event, at its option, to call for additional tenders. No term or condition shall be implied, based upon any industry or trade practice or custom, any practice or policy of the Owner or otherwise, which is inconsistent or conflicts with the provisions contained in these conditions.

1.15 CANCELLATION OF TENDER

.1 The Owner reserves the right to cancel any request for tender at any time without recourse by the contractor. The Owner has the right to not award this work for any reason including choosing to complete the work with the Owners' [sic] own forces.

1.16 SUBCONTRACT WORK

.1 Contractor is to ensure that all Subcontractors understand the full extent of their responsibilities in order to complete the entire work of the project. Subcontract work may appear in various Sections of Specifications and on various Drawings.

.2 Contractors and their Subcontractors are advised to become familiar with all specifications and drawings.

.3 The Owner reserves the right to approve or reject any subcontracting agent or reject bids based on the use of subcontracted work if not in the best interest of the project. The bid should document the justification for using the services of professionals other than those of the lead contractor.

1.17 CONFIDENTIALITY

.1 The successful proponent agrees not to release or, in any way, cause to release any confidential information of the City of Charlottetown unless an appropriate official of the City has specifically approved them to do so in writing. The Bidders agree to treat all information contained in this Tender as confidential, to use such information only for purposes of responding to this Tender, and not to disclose any such information, in whole or in part, to any other party without the express prior written consent of either party or pursuant to legal power, other than: a) to an agent who in the City's reasonable opinion, is seeking information on behalf of the Bidder, b) to a party used by the City to evaluate the Bidder's creditworthiness. Each party agrees to allow the other party to store contact information, such as names, phone numbers, and email addresses for its business representatives, in any country where that party does business and to use such information internally and to communicate with the other party for the purposes of their business relationship. Bidders agree to handle any personal information that it may gain access to through this Tender in accordance with the requirements of privacy laws, and in a manner consistent with the City's published privacy policies, as amended from time to time.

1.18 ASSIGNMENT

.1 This tender and any resulting contract may not be assigned by either party without the prior written consent and approval of the other party, which consent may not be unreasonably withheld; provided however, either party, without such consent, may assign or sell the same in connection with the transfer or sale of substantially its entire business to which this contract pertains or in the event of its merger or consolidation with another company. Any permitted assignee shall assume all obligations of its assignor under this contract. No assignment shall relieve any party of responsibility for the performance of any accrued obligation that such party then has hereunder.

1.19 CONDITIONS OF WORK AND EMPLOYMENT IN PEI

.1 All Construction Companies and Contractors and subcontractors submitting tenders for
this work, or a portion thereof, are advised, in their own interest, to contact the
Construction Association of Prince Edward Island, the accredited association for
commercial and industrial sectors of the construction industry, to inquire and determine
the terms and conditions of work and employment in the Province of Prince Edward
Island.

1.20 LAWS OF PRINCE EDWARD ISLAND
.1 This Tender will be governed by and will be construed and interpreted in accordance
with the laws of the Province of Prince Edward Island.

1.21 LABOUR
.1 No prospective employee in the Province of Prince Edward Island shall, with relation to
his employment or eligibility for employment, be discriminated against or favored by
reason of sex, racial origin, religious views, or political affiliations.
.2 Contractors, to the extent possible, are encouraged to maximize the employment of the
local labour force for the Work of this Contract.

1.22 HARMONIZED SALES TAX REQUIREMENTS (TYPICAL PROJECTS)
.1 The Owner for this project must account for the Harmonized Sales Tax (HST).
.2 All tenders submitted for the work of this Contract shall be calculated on the basis that
the Owner is not exempt from HST. The bid will include HST but will show it as a
separate line item.

1.23 ACCEPTABLE PRODUCTS
.1 The Bidder shall carry in his tender the base bid product(s) identified in the specifications
as "Acceptable Materials", or approved equals as they are identified throughout the
tender period.
.2 The Bidder is also encouraged to carry the products of other manufacturers, that are not
considered equals, as "Alternatives Prices," listing them by name on the Appendix
provided for that specific purpose, as part of the Bid Form, together with the price
difference compared to the specified products, when such Appendix is identified under
Section 00 41 13 - Bid Form.

1.24 APPROVED EQUALS
.1 Submission for an Approved Equal is to contain literature and descriptive information
with full specification data. Where the requested item is contained on a printed
document with other items, it is to be clearly identified.
.2 The Consultant will not search catalogs, e-mails or websites or contact suppliers to
obtain the necessary information for proper evaluation.
.3 Submission by Bidders for evaluation of products requested to be considered as equal
must be submitted to Owner no less than five (5) working days prior to closing of
tenders. No consideration will be given to approving equals after the close of tenders,
except when the specified product is found to have been discontinued by the
manufacturer.
.4 The consideration of a product(s) for Approved Equal status and the acceptance of
individual products as approved equals is entirely at the discretion of the Consultant.
.5 When products are given Approved Equal status these products may, at the discretion of
bidders, be carried in their tender price, provided that ALL costs related to changes to
the contract work required to incorporate the Approved Equal product are included in the
tender price.
.6 The acceptance of a product by the Consultant as an "Approved Equal," even where not
specifically indicated on the Approved Equals listing in the Addendum, is to be
understood as being contingent upon the provision of the particular series, model and/or
type, complete with all options to meet the specified requirements of the Acceptable
Material product.

.7 Products given approved status that are found, during construction period, to not have all specified options available, or to have discontinued production of same, or to have made other design changes since the time of approval, will not be accepted for use on this project, except when financial compensation has been mutually agreed upon between the Contractor and the Owner and deemed acceptable by the Consultant. Compensation will not be paid to the Contractor for products acknowledged by the Consultant to be superior to the specified products.

1.25 ALTERNATIVES

.1 Alternative products, when requested under Section 00 41 13 - Bid Form, must be listed in Appendix "B" provided as part of the Bid Form, and are to be understood as being offered only for the Owner's consideration as substitutes for the specified Acceptable Material products, at the amount of increase or decrease in the tender amount indicated in the Appendix. These products and related prices are not to be included in the tender amount.

.2 Alternative products and their related increase or decrease in the base bid amount are not used as the basis for awarding tenders.

.3 When alternative products are listed in Appendix "B", ALL costs related to changes to the contract work required to incorporate the alternative product into the work are to be included in the amount stated in Appendix "B".

.4 Alternative products may or may not be accepted at the discretion of the Owner at the price difference quoted, without any other monetary consideration. If requested, bidders shall promptly supply full details of any or all Alternatives listed. Specific written direction from the Consultant must be given to the Contractor to substitute an alternative product.

.5 Alternative prices shall include all fees, taxes and markups.

1.26 UNIT PRICES

.1 Unit Prices, when requested under Section 00 41 13 - Bid Form, must be listed in Appendix "C", as part of the Bid Form and are to be understood as being offered only for the Owner's consideration; to be accepted or not accepted, at the Owner's discretion in a timely manner during the Work of the Contract, ONLY as a method of adjustment to the Contract Work for changes in the Work, should the Owner opt for the Unit Price Method.

.2 Unit prices shall include all fees, taxes and markups.

1.27 SEPARATE PRICES

.1 Separate Prices, when requested under Section 00 41 13 - Bid Form, must be listed in Appendix "D", as part of the Bid Form and are to be understood as being offered only for the Owner's consideration; to be accepted or, not accepted, in whole or in part, at the Owner's discretion. If used the Separate Prices may be incorporated into the Contract Work either at the time of Award of Contract or in a timely manner during the Work of the Contract, at the Owner's discretion.

.2 Separate Prices shall include all fees, taxes (HST) and markups.

1.28 CASH ALLOWANCES

.1 Cash Allowances as requested under Section 00 41 13 - Bid Form, are to be understood as being expended only on Consultant's / Owner's written instructions.

1.29 GUARANTEES

.1 The Contractor will be required to guarantee the work of this Contract in accordance with the requirements of GC12.3 of the Agreement.

.2 Not withstanding the above, the bidder's attention is directed to the fact that certain individual items on this project may be required to be guaranteed by the manufacturer for periods in excess of twelve months. These specific requirements are to be found in
various sections of the specifications for this project.

1.30 PAYMENT OF WORKERS

.1 The Contractor shall, in addition to any fringe benefits, pay the workers employed by the Contractor on the work at wage rates, not less than those established by the Minimum Wage Order, issued under authority of the Labour Act, which is in effect. The Contractor shall pay workers employed on the work at intervals of not less than twice per month.

.2 The Contractor shall require each Subcontractor, or person doing any part of the work, to covenant with the Owner that workers are employed at the wage rates and in the manner required by this provision.

.3 Where any person employed by the Contractor or any Subcontractor, or other person engaged on the Work of this Contract, is paid less than the amount required to be paid under the provisions of this Contract, the Owner may deduct from any monies payable to the Contractor, under this or any other Contract, and pay to such person, a sum sufficient to bring the person's wages up to the amount required to be paid under this Contract.

.4 No claim for extra payment from the Contractor will be considered by the Owner concerning any change in the Minimum Wage Order which may occur during prosecution of the Contract.

1.31 TIMING REQUIREMENTS

.1 This project will require the achievement of the following project milestones:

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<thead>
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<tbody>
<tr>
<td>.1</td>
<td>Tender Call</td>
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<td>.2</td>
<td>Tender Close</td>
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<td>.3</td>
<td>Tender Award</td>
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<td>.4</td>
<td>Construction Start</td>
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<tr>
<td>.5</td>
<td>Substantial Completion</td>
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</tbody>
</table>

.2 The above are planned project milestones. While this is ideal, timing is subject to change.

END OF SECTION
1 General

1.1 TENDER

SUBMITTED BY:
______________________________________________________(Name)
______________________________________________________(Address)
______________________________________________________(Contact)

DATE: ______________________________________________________

FOR: MILTONVALE WELLFIELD DEVELOPMENT
PHASE 2A: PRV CHAMBER UPGRADE

TO: CITY OF CHARLOTTETOWN

Having examined ALL the drawings and specifications for this project, as well as any
addenda issued, as prepared by Coles Associates Ltd. and/or their consultants; WE
HEREBY OFFER to furnish all materials, plant and labour necessary for the full and
proper completion of the Contract work for:

MILTONVALE WELLFIELD DEVELOPMENT
PHASE 2A: PRV CHAMBER UPGRADE

INCLUDING all prime cost allowances and Government sales or other taxes in force at
this date, INCLUDING Harmonized Sales Tax (HST) but not any other additional or
deductible allowances or taxes which may be applicable subsequent to this date, and
which shall be payable by or to the Owner, in accordance with the above mentioned
Documents, for the bid amount of:

______________________________________________________________(Dollars
($                              )
in lawful money of Canada.

The following is the total amount of money INCLUDED in our bid amount for the
Harmonized Sales Tax (HST):

______________________________________________________________(Dollars
($     )

In submitting this Tender we recognize the necessity to complete the information
requested by any appendices, as well as, the right of the Owner to reject all Tenders or
to accept any Tender at the price submitted, on the condition that revised Tenders will
not be called for if minor changes are made.

Bid Prices are valid for up to 60 days. In the event of this Tender being accepted within
earlier of sixty (60) days of opening the tender and two days after Council has awarded
the tender, and our failing or declining to enter into a Contract, then our Bid Guarantee,
submitted with our Tender shall be forfeited to the Owner in lieu of any damages which
the Owner may suffer by reason of our failure or refusal to enter into such Contract.
In the event of our Tender not being accepted within earlier of sixty (60) days of opening the tender and two days after Council has awarded the tender, our Bid Guarantee, submitted with our Tender will be returned to us forthwith, unless a satisfactory arrangement is made with us covering its retention for a further stated period.

If we are notified of the acceptance of this Tender within the above specified time, we will:

1. Enter into a formal Contract Agreement with the Owner.
2. Furnish the Performance Bond and Labour and Materials Payment Bonds, or other form of Contract Security, when specifically permitted, as Contract Security in accordance with the requirements of the specifications.
3. Furnish a cost breakdown of the Contract sum, the total aggregating the amount of our Tender, in accordance with the requirements of the specifications.
4. Furnish a certified copy of all insurance policies.
5. Furnish a certified copy of all insurance policies carried by the named subtrades.
6. Complete the entire work on or before the dates stated.
7. Provide and update as required a Construction Schedule which clearly shows the state of progress required to complete the work on the date specified.
8. Enter into subcontract agreements where applicable.

COMPANY: _____________________________________________

AUTHORIZED SIGNATURE: ________________________________________

1.2 FORM OF TENDER APPENDICES

.1 Appendix ‘A’ must be completed by bidders.
.2 Appendix ‘B’ (only the items indicated) may be completed by bidders, any other items are at the bidder’s discretion.
.3 Appendix ‘C’ must be completed by bidders.
.4 Appendix ‘D’ must be completed by bidders
1.3 **APPENDIX ‘A’**

.1 **ASSIGNMENT OF WORK**

The Bidder’s attention is drawn to the General Conditions of the Contract - Assignment and Sub-Contracting. The Bidders shall enter the name and address of each Sub-Contractor used in making up the tender. Only one Sub-Contractor shall be named for each part of the work to be sublet.

After the tender has been accepted by the Owner, the Contractor shall not be allowed to substitute other Sub-Contractors in place of those named in the tender without written approval from the Consultant.

Herewith are identified the Subcontractors we propose to use on this project:

- Excavation Work: ____________________________
- Piping and Valving: ____________________________
- Electrical: ____________________________
- Communications: ____________________________
- Controls: ____________________________
- Commissioning: ____________________________
- Other: ____________________________
- Other: ____________________________
- Other: ____________________________

**COMPANY:** __________________________________________________________

**AUTHORIZED SIGNATURE:** ____________________________________________
.2 CONTRACTOR'S EXPERIENCE AND PROJECT PERSONNEL
The Bidders shall include below the names, qualifications and previous experience of those individuals who will be directly involved with the project, including but not limited to foreman, superintendent, project manager, project engineer, etc.

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
<th>RELATED EXPERIENCE</th>
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<tbody>
<tr>
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COMPANY: _______________________________________________________

AUTHORIZED SIGNATURE: ___________________________________________
1.4  APPENDIX ‘B’

.1  ALTERNATIVE PRICES

We herewith submit for consideration by the Owner the following systems or products as Alternatives to the Base Bid items indicated below and identify the increase or decrease, as applicable, in our tender price, for each item should it be selected by the Owner for installation in lieu of the Base Bid item. The change in tender price includes for all necessary modifications to the base bid systems.

Alternative prices shall include all fees, taxes and markups.

<table>
<thead>
<tr>
<th>SECTION</th>
<th>ITEM</th>
<th>BASE BID ALTERNATIVE:</th>
<th>TENDER PRICE INCREASED BY:</th>
<th>TENDER PRICE DECREASED BY:</th>
</tr>
</thead>
<tbody>
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</tr>
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</table>

COMPANY:  ____________________________________________________________

AUTHORIZED SIGNATURE:  _____________________________________________
1.5 **APPENDIX 'C'**

.1 **CASH ALLOWANCES**

The undersigned hereby acknowledges that the sum of:

FIVE THOUSAND DOLLARS - $5,000.00

is included in the total tender amount as a Cash Allowance, to perform the following work: This money to be expended in accordance with the requirements of CCDC2 2008 General Condition GC4.1 - Cash Allowances, only on consultant's written instructions.

.2 **WORK**

Unspecified additional construction elements relating to the work of this Contract. The nature and extent of this work to be determined by the Owner during the construction period for this contract.

Contractors are advised to carry sufficient overhead and administration cost to administer and coordinate this work.

The undersigned hereby acknowledges that the sum of:

SEVEN HUNDRED FIFTY DOLLARS - $750.00

is also included in the total tender amount as a separate amount to cover the cost of the Harmonized Sales Tax (HST) related to the above Cash Allowance.

Contractors are advised that the Owner is under no obligation to commit to any or all of the unspecified elements.

In the event that the Owner decides not to proceed with any or all of this work, we agree to credit the Contract with the unused portion of the full amount of this Cash Allowance, as applicable, and the related HST.

COMPANY: _____________________________________________________

AUTHORIZED SIGNATURE: _______________________________________

______________________________________________________________
1.6 **APPENDIX 'D'**

.1 **COST BREAKDOWN**

We submit herewith our cost breakdown for the work to be performed on this Project and in accordance with the requirements of the appropriate specifications herein.

<table>
<thead>
<tr>
<th>Class of Labour, Materials, Plant (as applicable) and/or Equipment:</th>
<th>Unit</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Requirements (incl. insurance, permits, O/H, Profit, etc.)</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Work</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piping, Valving &amp; Appurtenances</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Wiring &amp; Equipment</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control &amp; Communications</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commissioning</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (Specify)</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (Specify)</td>
<td>LS</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash Allowance</td>
<td>LS</td>
<td>1</td>
<td>$5,000.00</td>
<td>$5,000.00</td>
</tr>
<tr>
<td>As-Builts &amp; Maintenance Manuals</td>
<td>LS</td>
<td>1</td>
<td>$1,000.00</td>
<td>$1,000.00</td>
</tr>
</tbody>
</table>

**SUBTOTAL**

**TAXES**

**TOTAL**

COMPANY: _____________________________________________________

AUTHORIZED SIGNATURE: _______________________________________

END OF SECTION
1 General

1.1 FORM OF AGREEMENT

.1 The Form of Agreement between Contractor and Owner shall be Canadian Construction Documents Committee CCDC2-2008, "Stipulated Price Contract", including the Definitions and General Conditions therein dated 2008 including items GC1.1 inclusive to GC12.3, and the modifications to items GC1.1 to GC12.3 incorporated into Section 00 73 00 - Supplementary Conditions of this Specification.

.2 Document CCDC2-2008 may be examined at the Construction Association office in Charlottetown, PEI.

END OF SECTION
1 General

1.1 GENERAL

.1 The Definitions and General Conditions governing the Work shall be those specified in the following amendments and supplements to those provisions, and shall apply to all Sections of this Specification.

.2 Where any Article or portion of Article conflicts with the Laws of the Province concerned, such Article or portion of the Article is hereby stricken.

1.2 DEFINITIONS

.1 The following amendments shall apply to the Definitions of CCDC2 Stipulated Price Contract 2008.

.2 Paragraph 4 Consultant, add the following:

.1 The Consultant shall be the Owner's Prime Consultant, Coles Associates Ltd., 85 Fitzroy Street, Suite 201, Charlottetown, PEI.

.3 Paragraph 12 Owner, add the following:

.1 The Owner shall be the City of Charlottetown.

.4 Paragraph 19 Subcontractor, add the following:

.1 All dealings with the Subcontractor shall be through the medium of the Contractor, who will be responsible for the proper coordination and execution of the Sub-contractor's work.

.5 New Paragraph 27 Engineer:

.1 This shall mean the designated engineering representative(s) of the Consultant.

1.3 ARTICLE GC1.1 CONTRACT DOCUMENTS

.1 Paragraph 1.1.8 - Delete as written and substitute:

.1.8 Drawings and specifications are posted on the City's website for use by the Bidders.

.2 Paragraph 1.1.11 - Add new Paragraph as follows:

.11 The Contract Documents are prepared solely for use by the party with whom the Consultant has entered into a Contract and there are no representations of any kind made by the Consultant to any party with whom the Consultant has not entered into a Contract.

.3 Paragraph 1.1.12 - Add new Paragraph as follows:

.12 Electronic documents are and shall remain the Consultant's property.

1.4 ARTICLE GC3.1 CONTROL OF THE WORK

.1 Paragraph 3.1.1 - add new Sub-Clause 3.1.1.1 as follows:

.1.1 The Contractor shall co-ordinate his own work and the work of all Subcontractors so as to facilitate and expedite the progress of the work.

.2 Paragraph 3.1.1 Add new Sub-Clause 3.1.1.2 as follows:

.1.2 It is the responsibility of the Contractor to immediately notify the Consultant of any signs of distress or any other indications of actual or potential damage to the contract work, without regard to his awareness of any errors, inconsistencies or omissions in the Contract Documents.

.3 Add new Paragraph 3.1.3 as follows:

.1 Before ordering any materials or doing any Work, Contractor shall verify all compensation has been allowed on account of differences between actual site dimensions and the measurements indicated on the drawings. Any difference, which may be found, shall be submitted to the Consultant for consideration before proceeding with the work.

.4 Add new Paragraph 3.1.4 as follows:
The Contractor will be responsible for effecting the removal from the site of any trade, firm, group or person who is delaying the Work, or whose Work is unsatisfactory. The Contractor will arrange for other competent trades people to complete the Work at no expense to the Owner.

1.5 ARTICLE GC3.6 SUPERVISOR
.1 Add new Paragraph 3.6.3 as follows:
.1 The Consultant may require the Contractor to inform him, in writing, of the name and experience of the supervisory personnel he intends to use on the project.

1.6 ARTICLE GC3.8 LABOUR AND PRODUCTS
.1 Add new Paragraph 3.8.4 as follows:
.1 All manufactured articles, materials and equipment shall be installed, applied, connected, erected, used, cleaned, conditioned and commissioned as directed by the manufacturer unless specified to the contrary.

1.7 ARTICLE GC3.9 DOCUMENTS AT THE SITE
.1 Add new Paragraph 3.9.2 as follows:
.1 Maintain at job site, one copy each document as follows:
.1 Contract Drawings.
.2 Specifications.
.3 Addenda.
.4 Reviewed Shop Drawings.
.5 List of outstanding Shop Drawings.
.6 Notice of Change.
.7 Change Orders.
.8 Other modifications to Contract.
.9 Field Test Reports.
.10 Approved Work Schedule.
.11 Health and Safety Plan and other safety related documents.
.12 Other documents as specified.

1.8 ARTICLE GC4.1 CASH ALLOWANCES
.1 Article GC4.1 - Delete this article.

1.9 ARTICLE GC4.2 CONTINGENCY ALLOWANCE
.1 Article GC4.2 - Delete this article.

1.10 ARTICLE GC5.2 APPLICATIONS FOR PROGRESS PAYMENT
.1 Paragraph 5.2.2 - add two new Sentences as follows:
.1 Payment shall be less any holdback release, which may have been made in accordance with the specific terms of this Agreement as dictated by GC 5.6. Any such holdback release by the Owner to the Contractor shall be a payment to the Contractor in trust for the specific Subcontractor in respect of whose work the release is made.
.2 Payments shall be less 15% Mechanics' Lien Holdback amount claimed against each progress claim.
.2 Add new paragraph 5.2.6 as follows:
.1 Authorized Change Orders shall be listed on the application for payment indicating the amount claimed against each to date of claim.
.3 Paragraph 5.2.7 - Add new sentences as follows:
.1 Payment for materials will be considered only if such materials are properly
stored on site in a secure enclosure acceptable to the Consultant. Security of materials so stored is the responsibility of the Contractor.

4. Add new Paragraph 5.2.8 as follows:

1. With the second and all subsequent applications for payment the Contractor shall include a statutory declaration form CCDC 9B, or other similar form acceptable to the Consultant, declaring that all labour and materials entering into the work, including Subcontractors, covered by the previous application, have been paid. With application for release of lien holdback, the Contractor shall include a statutory declaration form CCDC 9A, or other similar form acceptable to the Consultant.

1.11 ARTICLE GC5.3 PROGRESS PAYMENT

1. Paragraph 5.3.1 - Add new Sentence as follows:

1. When any claim for payment during the course of construction includes for completed or partially completed Work, which in the opinion of the Consultant is defective or otherwise unacceptable, a sum of monies determined by the Consultant to be ten (10) times the value of the defective or unacceptable Work, or ten (10) times the value of the Work required to correct the defect or an amount solely at the Consultant's discretion, will be withheld from the claim.

2. Paragraph 5.3.1 - Add three (3) new Sentences as follows:

1. Deficiency monies may be held back at any time during the course of the project for Work deemed incomplete or unacceptable.

2. It remains the Contractor's responsibility to undertake his own deficiency reviews and ensure the entire Work conforms to the Contract including quality, completeness and commissioning.

3. Two (2) final deficiency reviews will be conducted by the Consultant. The first review with the Owner and Contractor will identify any minor items which may remain outstanding, and the second review will confirm that these items have been completed. All other deficiency reviews where deficiencies are incomplete or not ready for requested inspections, will be charged at cost to the Contractor. The invoice for the additional reviews will be submitted to the Owner with a corresponding amount deducted from the Contractor's progress payment.

1.12 ARTICLE GC5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

1. Paragraph 5.5.1, Add new Sub-Clauses .3, and .4 as follows:

1. 5.5.1.3 Submit with application for payment letter of clearance from the Department of the Provincial Treasury to the Owner that all Revenue Tax remittances payable to the Department for work of this Contract appear to be in order.

2. 5.5.1.4 Submit with application for payment letter of clearance from The Workers Compensation Board to the Owner stating that the Contractor is in good standing with the Board.

2. Paragraph 5.5.2, Add new sub-clause 5.5.2.1 as follows:

1. Contractor to submit document that declares no Mechanics Liens have been filed on the project.

1.13 ARTICLE GC5.7 FINAL PAYMENT

1. Paragraph 5.7.2 - Add new Sentence as follows:

1. Any delay in delivering the required Project Record Drawings (As-Builts) as described in Section 01 78 00 - Closeout Submittals will have the effect of delaying the final payment to the Contractor until the Consultant has received them complete and in good condition.

Coles Associates Ltd.
1.14 ARTICLE GC6.2 CHANGE ORDER
.1 Add new Paragraph 6.2.3 as follows:
   .1 The method of adjustment or an amount of adjustment for the Contract Price and of adjustment in the Contract Time for a Change Order shall be the same as for a Change Directive as described under GC6.3 Change Directive.

1.15 ARTICLE GC6.3 CHANGE DIRECTIVE
.1 Delete Paragraphs 6.3.6.1, 6.3.6.2 and 6.3.6.3 and replace with the following:
   .2 Change Orders call for normal changes or additions to the Work will be priced in details giving actual material trade prices (not list prices) and actual labour costs (including Employment Insurance, Worker's Compensation, Holiday Pay) and actual equipment rental. To these prices, the Contractor will add:
      .1 For Work involving the General Contractor only, the General Contractor adds 15% to his costs.
      .2 For Work involving a Subcontractor only, the Subcontractor adds 15% to his costs, submits this price to the General Contractor who adds 5%.
      .3 Deletions to Contract: A mark-up shall not be charged nor credited on credit portion of a Change Order.
      .4 Supervision related to Change Orders shall be considered as included in the allowable mark-up, and shall not be included in the labour changes for a Change order.

1.16 ARTICLE GC9.1 PROTECTION OF WORK AND PROPERTY
.1 Add new Paragraph 9.1.5 as follows:
   .1 The Contractor shall be responsible for implementing all necessary security measures required to protect the areas of Work under his control and shall be responsible for damage which may arise from the failure of, or the failure to implement such security measures.

1.17 ARTICLE GC10.1 TAXES AND DUTIES
.1 Paragraph G.C. 10.1.1 - Revise as follows:
   .1 Delete the words ..."at the time of closing except for Value Added Taxes"...and replace with the words ..."at the time of closing including Value Added Taxes"...

1.18 ARTICLE GC10.2 LAWS, NOTICES, PERMITS, AND FEES
.1 Paragraph G.C. 10.2.2 - Delete “the building permit” and add the new sub-clause 10.2.2.1 as follows:
   .1 The Contractor shall apply for, obtain and pay for the building permit.

1.19 ARTICLE GC11.1 INSURANCE
.1 Paragraph 11.1.1
   .1 Add new Clause 11.1.1.1
      .1 11.1.1.1 Policy shall include but not be limited to:
      .2 Injury to persons and damage to or destruction of property belonging to others caused by and relating to the Contractor's activities, including the Owner's Project related activities and the Owner's Consultant's non-professional activities.
      .3 Personal injury liability covering libel, slander, false arrest, etc.
      .4 Non-owned automobile liability providing Third Party Liability and including the Standard Contractual Liability Endorsement.
      .5 The Contractor to add the Province of Prince Edward Island and the City of Charlottetown as an additional insured.
   .2 Add new Paragraph 11.1.9 as follows:
The undersigned is to carry and keep in force Professional Liability Insurance in an amount not less than $2,000,000 per occurrence providing coverage for acts, errors and omissions arising from their professional services performed under this agreement. The policy self-insured-retention / deductible shall not exceed $10,000 per claim and if the policy has an aggregate limit, the amount of the aggregate limit shall be double the required per claim limit. The policy shall be underwritten by a company licensed to conduct business in the Province of Prince Edward Island and be acceptable to the Owner. The policy shall be valid for at least one (1) year after contract is completed.

1.20 ARTICLE GC12.3 WARRANTY

.1 Add new Paragraph 12.3.7 as follows:

.1 When a part of the work is occupied by the Owner, directly or for the use intended prior to Substantial Performance, the warranty for the Work directly related to the construction and normal operation of that part of the Work, shall start on the date of occupancy.

.2 Add new paragraph 12.3.8 as follows:

.1 The Contractor shall ensure that his subcontractors are bound to the requirements of GC12.3 insofar as their work is concerned.

END OF SECTION
1 General

1.1 SCOPE OF WORK

1 The Contractor is to provide each item, and properly execute all work as specified herein, indicated by drawings, addenda, or change orders issued with respect to this project.

2 The Contractor shall coordinate, administer, and supervise all work, material acquisition and labour.

3 Contractor shall coordinate with Owner and facilitate installation of Owner provided equipment.

1.2 WORK BY OTHERS

1 Co-operate and coordinate with other Contractors in carrying out the respective work and carry out instructions from Consultant.

2 Schedule the Work of this Contract in consultation and cooperation with the Work of other Contractors and/or Owners own forces to produce a coordinated construction schedule.

3 Work specifically excluded from this Contract:

1 Not Available.

1.3 WORK SEQUENCE

1 Construct Work to accommodate Owner's continued use of existing systems during construction.

2 Construct Work to provide for continuous public usage. Do not close off public usage of facilities.

3 Maintain fire access/control.

1.4 PARTIAL OWNER OCCUPANCY

1 Schedule and substantially complete designated portions of Work for Owner's occupancy prior to Substantial Performance of entire Work.

2 Execute Certificate of Substantial Performance for each designated portion of Work prior to Owner occupancy.

1.5 EXECUTION

1 Execute work with least possible interference or disturbance to building operations, public and normal use of premises.

1.6 MITIGATION OF IMPACT ON EXISTING SYSTEM

1 This Contractor will recognize that the existing system and infrastructure must remain fully functional with minimal disruption during the course of the Work. Any disruption in services must be brought to the attention of the Consultant and receive prior approval before commencement.

2 This Contractor is responsible to ensure that the existing systems are kept free from any contamination that may result from any of the Work.

1.7 DOCUMENTS

1 The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all.

2 Descriptions of materials or work which have well known technical or trade meanings shall be held to refer to such recognized standards.

3 Should the specifications conflict with the drawings, the specifications shall govern.

4 In the case of discrepancies between drawings, those of larger scale, or if the scale are the same, those of later date shall govern.
1.8 COMMUNICATION
.1 All submissions and inquiries shall be directed to the Consultant for review.
.2 All direction will be transmitted to the Contractor by the Consultant.

1.9 CODES AND REGULATIONS
.1 Perform work in accordance with National Building Code of Canada (NBC) 2015, Atlantic Canada Guidelines for the Supply, Treatment, Storage, Distribution and Operation of Drinking Water Supply Systems, applicable AWWA Standards, and any other code of provincial or local application, provided that in any case of conflict or discrepancy the more stringent requirements shall apply.
.2 Meet or exceed requirements of contract documents and specified standards.
.3 References to standards, including manufacturer's direction for installation shall be the latest edition.
.4 All materials, components and equipment as well as construction methods shall comply with the latest edition of the National Building Code and all other applicable Provincial codes or regulations.
.5 The latest edition of the Canadian Electrical Code shall govern all electrical work, whether pre-wired an/or assembled remote from the site or not.
.6 All equipment supplied or installed shall be CSA approved for the intended use.
.7 The latest edition of the PEI Occupational Health and Safety Act and Regulations shall govern safe construction practices.
.8 Provide a copy of all certificates of acceptance issued by Provincial or local authorities.

1.10 CONTRACTOR'S USE OF SITE
.1 Do not unreasonably encumber site with materials or equipment.
.2 Move stored products or equipment, which interfere with operations of Consultant or other Contractors.
.3 Obtain and pay for use of additional off site storage or work areas needed for operations.
.4 Maintain two way vehicle traffic at all times.
.5 Maintain all roads, walks, driveways, free from mud and debris tracked from Construction site on a daily basis.

1.11 OWNER'S SITE INSPECTOR
.1 There will be an Inspector representing the Owner. No work is to be covered without having received approval from the Inspector. The Inspector will have the authority to cause any part of the work to cease should, in his or her opinion, there be cause to do so.
.2 This work shall be examined by the utility and approval granted to resume when a satisfactory solution has been found out.
.3 The Inspector does not have authority to authorize changes to work. He or she shall confer with the Consultant who, if necessary will authorize any change.
.4 The fact that the Inspector does not reject any work shall not remove the responsibility from the Contractor for completing all work as specified.

1.12 SITE INSPECTOR
.1 No work is to be covered without having received approval from the Consultant. The Consultant will have the authority to cause any part of the work to cease, should in his or her opinion, there be cause to do so.
.2 This work shall be examined by the Consultant and approval granted to resume when a satisfactory solution has been found out.
1.13 SETTING OUT OF WORK
.1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations.
.2 Provide all equipment, materials and devices needed to lay out and construct work.
.3 Supply such devices as straight edges and templates required to facilitate Consultant's inspection of work.

1.14 CONCEALMENT
.1 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

1.15 LOCATION OF EQUIPMENT AND FIXTURES
.1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
.3 Inform Consultant of impending installation and obtain his approval for actual location.
.4 Submit field drawings to indicate relative position of various services and equipment when required by Consultant.

1.16 CUTTING, FITTING AND PATCHING
.1 Execute cutting, core drilling, fitting and patching, required to install and make new work under this contract fit properly.
  .1 Includes all cutting and patching in building for connection of new mechanical and electrical services to service lines.
  .2 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.

1.17 BLOCKING AND BACKING
.1 Provide all blocking, backing, hangers, etc. used for support of all built-in work.

1.18 EXISTING SERVICES
.1 Before commencing work, establish the location and extent of service lines and notify Consultant of findings if in conflict with information or intent shown.
.2 Where unknown services are encountered, immediately advise Consultant and confirm findings in writing.
.3 Contractor shall pay for any or all repairs to existing services that have been damaged due to the Contractor's negligence in the course of his work.
.4 Notify Consultant and utilities of intended interruption of services and obtain permission.
.5 Where Work involves breaking into or connecting to existing services, give Consultant 24 hours notice for necessary interruption. Minimize duration of interruptions. Carry out Work at times as directed by governing authorities or Owner with minimum disturbance.
.6 Provide temporary services when directed by Consultant to maintain critical building and tenant systems.
.7 Provide alternative routes for personnel and vehicular traffic.
.8 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
.9 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by Authorities Having Jurisdiction.
.10 Record locations of maintained, re-routed and abandoned service lines.
.11 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.
1.19 **ACCESS AND SECURITY**
.1 Access and security on the entire job site will be the responsibility of the Contractor.

1.20 **ADDITIONAL DRAWINGS**
.1 The Consultant may furnish as necessary for the execution of the work, additional instructions, by means of drawings or otherwise. All such additional instructions shall be consistent with the contract documents. In giving such additional instructions, the Consultant shall have authority to make minor changes in the work, not inconsistent with the contract.

1.21 **RELICS AND ANTIQUITIES**
.1 Relics and antiquities and items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found during the work, shall remain property of the Owner. Protect such articles and request directives from Consultant.
.2 Give immediate notice to Consultant if evidence of archaeological finds are encountered during construction, and await Consultant's written instructions before proceeding with work in this area.

END OF SECTION
1 General

1.1 SECTION INCLUDES
   .1 Applications for payments.
   .2 Substantial performance procedures.
   .3 Release of holdback procedures.
   .4 Schedule of values.

1.2 REFERENCES
   .1 Owner/Contractor Agreement.
   .2 Canadian Construction Documents Committee (CCDC).
     .1 CCDC 2-2008, Stipulated Price Contract.
     .3 Section 00 73 00 - Supplementary Conditions.

1.3 APPLICATIONS FOR PROGRESS PAYMENT
   .1 The City of Charlottetown has moved to Electronic Funds Transfer and the successful
     bidder will be required to provide the necessary information for registration on the City's
     system.
   .2 Make applications for payment on account as provided in Agreement as Work
     progresses.
   .3 Date applications for payment last day of agreed monthly payment period and ensure
     amount claimed is for value, proportionate to amount of Contract, of Work performed
     and Products delivered to Place of Work at that date.
   .4 Submit to Consultant, at least fourteen (14) days before first application for payment,
     Schedule of Values for parts of Work, aggregating total amount of Contract Price, so as
     to facilitate evaluation of applications for payment.

1.4 SCHEDULE OF VALUES
   .1 Make schedule of values out in such form and supported by such evidence as
     Consultant may reasonably direct and when accepted by Consultant, be used as basis
     for applications for payment.
   .2 Include statement based on schedule of values with each application for payment.
   .3 Support claims for products delivered to Place of Work but not yet incorporated into
     Work by such evidence as Consultant may reasonably require to establish value and
     delivery of products.
   .4 Provide, minimum fourteen (14) days before submitting first application for payment, a
     Schedule of Values, aggregating the Total Contract Price. After approval by the
     Consultant the Schedule of Values will be used as a basis for the application for
     progress payments.
   .5 Contractor shall submit with the Schedule of Values, an itemized list of all trades and
     applicable labour rates for each, which will be used as a basis for labour rates in
     changes to contract Work.

1.5 PREPARING SCHEDULE OF UNIT PRICE TABLE ITEMS
   .1 Submit separate Schedule of Unit Price items of Work requested in Bid form.
   .2 Make form of submittal parallel to Schedule of Values, with each line item identified
     same as line item in Schedule of Values. Include in unit prices only:
     .1 Cost of material.
     .2 Delivery and unloading at site.
     .3 Sales taxes.
     .4 Installation, overhead and profit.
   .3 Ensure unit prices multiplied by quantities given equal material cost of that item in
Schedule of Values.

1.6 PROGRESS PAYMENT
.1 Consultant will issue to Owner, no later than ten (10) days after receipt of an application for payment, certificate for payment in amount applied for or in such other amount as Consultant determines to be properly due. If Consultant amends application, Consultant will give notification in writing giving reasons for amendment.

1.7 SUBSTANTIAL PERFORMANCE OF WORK
.1 Refer to Section 00 73 00 - Supplementary Conditions.
.2 Prepare and submit to Consultant comprehensive list of items to be completed or corrected and apply for a review by Consultant to establish Substantial Performance of Work or substantial performance of designated portion of Work when Work is substantially performed if permitted by lien legislation applicable to Place of Work designated portion thereof which Owner agrees to accept separately is substantially performed. Failure to include an item on list does not alter responsibility to complete Contract.
.3 No later than ten (10) days after receipt of list and application, Consultant will review Work to verify validity of application, and no later than seven (7) days after completing review, will notify Contractor if Work or designated portion of Work is substantially performed.
.4 Consultant shall state date of Substantial Performance of Work or designated portion of Work in certificate.
.5 Immediately following issuance of certificate of Substantial Performance of Work, in consultation with Consultant, establish reasonable date for finishing Work.

1.8 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF WORK
.1 After issuance of certificate of Substantial Performance of Work:
   .1 Submit an application for payment of holdback amount.
   .2 Submit sworn statement that all accounts for labour, subcontracts, products, construction machinery and equipment, and other indebtedness which may have been incurred in Substantial Performance of Work and for which Owner might in any way be held responsible have been paid in full, except for amounts properly retained as holdback or as identified amount in dispute.
.2 After receipt of application for payment and sworn statement, Consultant will issue certificate for payment of holdback amount.
.3 Where holdback amount has not been placed in a separate holdback account, Owner shall, ten (10) days prior to expiry of holdback period stipulated in lien legislation applicable to Place of Work, place holdback amount in bank account in joint names of Owner and Contractor.
.4 Amount authorized by certificate for payment of holdback amount is due and payable on day following expiration of holdback period stipulated in lien legislation applicable to Place of Work. Owner may retain out of holdback amount any sums required by law to satisfy any liens against Work or, if permitted by lien legislation applicable to Place of Work, other third party monetary claims against Contractor which are enforceable against Owner.

1.9 PROGRESSIVE RELEASE OF HOLDBACK
.1 Where legislation permits, if Consultant has certified that Work of subcontractor or supplier has been performed prior to Substantial Performance of Work, Owner shall pay holdback amount retained for such subcontract Work, or products supplied by such supplier, on day following expiration of holdback period for such Work stipulated in lien legislation applicable to Place of Work.
.2 Notwithstanding provisions of preceding paragraph, and notwithstanding wording of such
certificates, ensure that such subcontract Work or products is protected pending issuance of final certificate for payment and be responsible for correction of defects or Work not performed regardless of whether or not such was apparent when such certificates were issued.

1.10 WARRANTY HOLDBACK

.1 The Owner will retain the sum of 5% of the tender price of this contract for a period of one (1) year to cover cost associated with warranty items. The money will be released one (1) year from the date of substantial completion, without interest, when the work is rectified and completed to the satisfaction of the Owner and Consultant.

1.11 FINAL PAYMENT

.1 Submit an application for final payment when Work is completed.
.2 Consultant will, no later than ten (10) days after receipt of an application for final payment, review Work to verify validity of application. Consultant will give notification that application is valid or give reasons why it is not valid, no later than seven (7) days after reviewing Work.
.3 Consultant will issue final certificate for payment when application for final payment is found valid.

END OF SECTION
1 General

1.1 APPOINTMENT AND PAYMENT

.1 The Contractor will arrange and pay for the services of an independent Consultant to carry out the following tests:

.1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
.2 Inspection and testing performed exclusively for Contractor's convenience.
.3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
.4 Mill tests and certificates of compliance.
.5 Tests specified to be carried out by Contractor under the supervision of Consultant.
.6 Additional tests specified in Article 1.3.7 below.
.7 Where tests or inspections reveal work not in accordance with contract requirements, Contractor shall pay costs for additional tests or inspections as Consultant may require to verify acceptability of corrected work.

1.2 CONTRACTOR'S RESPONSIBILITIES

.1 Provide labour, equipment and facilities to:

.1 Provide access to Work for inspection and testing.
.2 Facilitate inspections and tests.
.3 Make good Work disturbed by inspection and test.
.4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.

.2 Notify Consultant sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.

.3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.

.4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by Consultant.

.5 Provide Consultant with two (2) sets of fully documented test reports, submitted immediately following the testing operations.

1.3 CONTRACTOR'S RESPONSIBILITIES - INSPECTION & TESTING REQUIREMENTS

.1 Testing of materials and inspection and testing of placement and compaction will be carried out by testing laboratory appointed and paid for by the Contractor, in accordance with the requirements of this Section.

.2 Existing in-situ material:

.1 Verification of existing compaction densities.
.2 Recommendation of procedures to upgrade compaction densities.
.3 Monitoring of upgrading work.
.4 Verifying the new compaction densities.

1.4 FINAL REPORT

.1 Submit to the Owner at completion of job, three (3) bound copies of inspection report. This report to include:

.1 All copies of test results, indexed to correspond with testing requirements of this Section.

END OF SECTION
1 General

1.1 TIME AND ORDER OF COMPLETION
   .1 The Consultant may direct the Contractor in writing as to the time, precedence or order in which any work to be done under the contract shall be performed.

1.2 TIME OF COMMENCEMENT
   .1 The Contractor shall commence work within three (3) days after the execution of the Contract, unless specifically indicated or directed otherwise by the Consultant, and shall proceed continuously, diligently and with all reasonable dispatch consistent with the Construction Schedule, and the proper execution of the work, until final completion. The rate of progress made with the work shall be such as to ensure its final completion within the specified time.

1.3 TIME OF COMPLETION
   .1 The whole of the work to be done under this contract shall be finally completed in full accordance with all the terms and conditions of this contract on or before the day specified for such completion in the tender which forms part of this contract.

1.4 EXTENSION OF TIME
   .1 An extension of time may be granted in writing by the Consultant in the event of the work being delayed beyond the prescribed time for completion as a result of causes beyond the Contractor's control. Such extensions shall be for such time as the Consultant may prescribe, and the Consultant shall fix the terms on which the said extension may be granted. An application by the Contractor for an extension of time shall be made to the Owner in writing as least fifteen calendar days prior to the date of completion fixed by the contract. Where applicable, all bonds or other surety including Liability Insurance furnished to the Owner by the Contractor shall be amended where necessary at the expense of the Contractor to provide coverage beyond the date of any extension of time granted, and the Contractor shall furnish the Owner with evidence of such amendment of the bonds or other surety and Liability Insurance.
   .2 Any extension of time that may be granted to the Contractor shall be so granted and accepted without prejudice to any rights of the Owner whatsoever under the Contract, and all of such rights shall continue in full force and effect after the time limited in the Contract for the completion of the work and whenever in the Contract, power and authority is given to the Consultant or any person to take any action consequent upon the act, default, breach, neglect, delay, non-observance or non-performance by the Contractor in respect of the work or Contract, or any portion thereof, such powers or authorities may be exercised from time to time and not only in the event of the happening of such contingencies before the time limited in the Contract for the completion of the work but also in the event of the same happening after the time so limited in the case of the Contractor being permitted to proceed with the execution of the work under an extension of time granted by the Consultant.

1.5 LIQUIDATED DAMAGES
   .1 N/A

1.6 SUSPENSION OF WORK
   .1 The Contractor shall, upon written notice from the Consultant, discontinue or delay any or all of the work when, in the opinion of the Consultant, it is unwise to proceed for any reason whatsoever, and the work shall not be resumed until the Consultant shall in writing so direct.
1.7 LABOUR DISPUTE
   .1 Except to the extent that relief is granted under of the Contract, the Contractor shall bear
   the risk and responsibility of any loss, damage or expense to the work or to himself or
   any nature and kind whatsoever arising from strikes or labour disputes other than such
   loss, damage or expense caused by the failure of the Owner to meet its obligations
   under the Contract.

1.8 CHARACTER AND EMPLOYMENT OF WORKERS
   .1 The Contractor shall employ only orderly, competent and skillful workers to do the work.
   Whenever the Consultant shall inform the Contractor in writing that any person or
   persons on the work are, in the opinion of the Consultant, incompetent, unfaithful or
   disorderly, such person or persons shall be discharged from the work and shall not again
   be employed on the work without the consent in writing of the Consultant.

1.9 LIMITATIONS OF OPERATIONS
   .1 The Consultant may, in writing, require the Contractor to cease or limit operations under
   the Contract, on any day or days if the operations are of such nature that the Consultant
   deems it necessary or expedient to do so.
   .2 The Contractor shall cooperate with other contractors, utility companies and the Owner
   and they shall be allowed free access to their work at all times. The Consultant reserves
   the right to alter the method of operations on this Contract to avoid interference with
   other work.
   .3 The Contractor shall have access to their work to allow the incorporation of a double
   shift if the Contractor deems it necessary to meet the obligations under the contract.

END OF SECTION
1 General

1.1 SUBMITTALS
.1 Ten (10) working days after award of contract and prior to commencement of Work, submit to Consultant the following work management documents:
   .1 Work Schedule as specified herein.
   .2 Shop Drawing Submittal Schedule specified in Section 01 33 00 - Submittal Procedures.
   .3 Health and Safety Plan specified in Section 01 35 29 - Health, Safety, and Emergency Response Procedures.
   .4 Environmental Plan specified in Section 01 35 43 - Environmental Procedures.

1.2 WORK SCHEDULE
.1 Upon notification of tender acceptance submit:
   .1 Work schedule submitted within seven (7) calendar days of contract award.
   .2 Schedule to indicate all calendar dates from commencement to completion of all work within the time stated in the accepted tender.
   .3 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of Work on time and permit effective monitoring of Work progress in relation to established milestones.
   .4 Work schedule content to include as a minimum the following:
      .1 Bar (GANTT) Charts, indicating all work activities, tasks and other project elements, their anticipated durations, planned dates for achieving key activities and major project milestones supported with;
      .2 Written narrative on key elements of work illustrated in bar chart, providing sufficient details to demonstrate a reasonable implementation plan for completion of project within designated time.
      .3 Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.
   .5 Work schedule must take into consideration and reflect the required sequence of Work, special conditions and operational restrictions as specified below.
   .6 Schedule Work in cooperation with the Consultant. Consultant's decision is final in regards to time and order of Work. Incorporate within Work Schedule, items identified by Consultant during review of preliminary schedule.
   .7 Completed schedule shall be to the Consultant's approval. When schedule has been approved by Consultant, take necessary measures to complete work within scheduled time. Do not change schedule without Consultant's approval.
   .8 It is the Contractor's responsibility to ensure all subtrades and subcontractors are made aware of the work restraints and operational restriction specified.
   .9 Schedule Updates:
      .1 Submit when requested by Consultant.
      .2 Provide information and pertinent details explaining reasons for necessary changes to implementation plan.
      .3 Identify problem areas, anticipated delays, impaction schedule and proposed corrective measures to be taken.
   .10 Consultant will make interim reviews and evaluate progress of work based on approved schedule. Frequency of such reviews will be as decided by Consultant. Address and take corrective measures on items of work as identified by reviews and as directed by Consultant. Update schedule accordingly.
   .11 In every instance, change or deviation from work scheduling, no matter how minimal the
risk or impact on safety or inconvenience to tenant or public might appear, will be subject to prior review and approval by the Consultant.

1.3 PROJECT PHASING
.1 Be aware that systems must be kept operational for the full duration of work of this contract.

1.4 PROJECT MEETINGS
.1 Schedule and administer project meetings, held on a minimum weekly basis, for entire duration of work and more often when directed by Consultant as deemed necessary due to progress of work of particular situation.
.2 Prepare agenda for meetings.
.3 Notify participants in writing four (4) days in advance of meeting date.
   .1 Ensure attendance of all subcontractors.
   .2 Consultant will provide list of other attendees to be notified.
.4 Hold meetings at project site or where approved by Consultant.
.5 Preside at meetings and record minutes.
   .1 Indicate significant proceedings and decisions. Identify action items by parties.
   .2 Distribute to participants by mail or by facsimile within three (3) calendar days after each meeting.
   .3 Make revisions as directed by Consultant.
   .4 Consultant will advise whether submission of minutes by email is acceptable. Decision will be based on compatibility of software among participants.
.6 Consultant will arrange project meetings and assume responsibility for setting times and recording minutes.

1.5 WORK COORDINATION
.1 The General Contractor is responsible for coordinating the work of the various trades and predetermining where the work of such trades interfaces with each other.
   .1 Designate one person from own employ having overall responsibility to review contract documents and shop drawings, plan and manage such coordination.
.2 The General Contractor shall convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required.
   .1 Provide each trade with the plans and specs of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
   .2 Develop coordination drawings when deemed required illustrating potential interference between work of various trades and distribute to all affected parties.
   .3 Submit copy of coordination drawings and meeting minutes to Consultant for information purposes.
.3 Submission of shop drawings and ordering of prefabricated equipment or prebuilt components shall only occur once coordination meeting for such items has taken place between trades and all conditions affecting the work of the interfacing trades has been made known and accounted for.
.4 Work Cooperation:
   .1 Ensure cooperation between trades in order to facilitate the general progress of the work and avoid situations of spatial interference.
   .2 Ensure that each trade provides all other trades reasonable opportunity for the completion of the work and in such a way as to prevent unnecessary delays, cutting, patching and the need to remove and replace completed work.
.5 Owner will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades
as a result of their not being informed of the areas and extent of interface work shall be the sole responsibility of the General Contractor and shall be resolved by him at no extra cost to the Contract.

.6 Contractor to coordinate location and installation of laterals with private property owners and businesses within this phase of the work.

END OF SECTION
1 General

1.1 GENERAL

.1 Make specified submittals to the Consultant at commencement of Contract (and no later than ten (10) days after award). Include:
  .1 Contract Security
  .2 Cost Breakdown
  .3 Permits as required
  .4 Construction schedule for Trade Package activity
  .5 Name of Project Superintendent
  .6 Proof of Insurance
  .7 Labour and Equipment rates
  .8 Corporate Safety Plan
  .9 Traffic Control Plan
  .10 Site specific safety plan
  .11 Environmental Protection Control Plan
  .12 Shop drawing schedule
  .13 Workers' Compensation clearance letter

.2 During Construction provide:
  .1 Updated trade construction schedule
  .2 Shop drawings as required
  .3 Inspection and test reports
  .4 Request for Information
  .5 Submission required for payment purposes

.3 At completion of Work provide
  .1 Submission at completion of work as specified in Project Close Out, Commissioning, and Operations and Maintenance Data Sections.

1.2 ADMINISTRATIVE

.1 Refer to GC 3.10 Shop Drawings

.2 Submit to Consultant submittals listed for review. Submit ten (10) working days after award of contract in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.

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

.4 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.5 Where items or information is not produced in SI Metric units converted values are acceptable.

.6 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.

.7 Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.8 Verify field measurements and affected adjacent Work are coordinated.

.9 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.

.10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.
1.11 Keep one reviewed copy of each submission on site.

1.3 **SHOP DRAWINGS AND PRODUCT DATA**

.1 The term “shop drawings” means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.3 Allow up to ten (10) days for Consultant's review of each submission.

.4 Adjustments made on shop drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.

.5 Make changes in shop drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of revisions other than those requested.

.6 Submissions include:

.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, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.

.5 Details of appropriate portions of 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 Relationship to adjacent work.

.7 After Consultant's review, distribute copies.

.8 Submit one transparency of shop drawings for each requirement requested in specification Sections and as Consultant may reasonably request.

.9 Submit six (6) copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Consultant where shop drawings will not be prepared due to standardized manufacture of product.

.10 Submit three (3) copies of test reports for requirements requested in specification Sections and as requested by Consultant.

.1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in
accord with specified requirements.

.2 Testing must have been within three (3) years of date of contract award for project.

.11 Submit three (3) copies of certificates for requirements requested in specification Sections and as requested by Consultant.

.1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.

.2 Certificates must be dated after award of project contract complete with project name.

.12 Submit three (3) copies of Manufacturers instructions for requirements requested in specification Sections and as requested by Consultant.

.1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.

.13 Submit three (3) copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Consultant.

.1 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.14 Submit three (3) copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Consultant.

.15 Delete information not applicable to project.

.16 Supplement standard information to provide details applicable to project.

.17 If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, transparency will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.4 SAMPLES

.1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.

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

.3 Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.4 Where color, pattern or texture is criterion, submit full range of samples.

.5 Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.

.6 Make changes in samples which Consultant may require, consistent with Contract Documents.

.7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.5 CERTIFICATES AND TRANSCRIPTS

.1 Immediately after award of Contract, submit Workers' Compensation Board status.

.2 Submit transciption of insurance immediately after award of Contract.

END OF SECTION
1 General

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.
.2 Section 01 41 00 - Bid Form.
.3 Section 02 61 00 - Hazardous Facility Remediation.
.4 City of Charlottetown Contractor List of Documentation

1.2 REFERENCES

.1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
.3 Material Safety Data Sheets (MSDS).
.4 Province of Prince Edward Island
.6 CSA C22.3 No. 1-M87 (R2001) - Overhead Systems.
.7 CSA C22.3 No. 7-94 (R2000) - Underground Systems.
.8 COSH, Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
.9 Fire Protection Standards issued by Fire Protection Services of Human Resources Development Canada as follows:
   .2 FCC No. 302 - June 1982 Standard for Welding and Cutting.
   .3 FCC standards, may be viewed at the Regional Fire Protection Services' office (previously known as the Fire Commissioner of Canada) located at 99 Wyse Road, 8th Floor, Dartmouth, NS, Tel: (902)426-6053.

1.3 SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
.2 Submit site-specific Health and Safety Plan: Within seven (7) days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
   .1 Part 1: List of individual health risks and safety hazards identified by hazard assessments.
   .2 Part 2: List specific measures to control or mitigate each hazard and risk identified in part one of Plan. State engineering controls, personal protective equipment and safe work practices to be used for work having identified hazards (s) or risk(s).
   .3 Part 3: Emergency and Communications Measures as follows:
      .1 Emergency Procedures: standard operating procedures, evacuation measures and emergency response implemented on site during an accident or incident. State step by step procedures, applicable to each identified hazard.
      .2 Emergency Communications: list names and telephone numbers of officials, to be contacted if incident, accident or emergency situation occurs, including:
         .3 General Contractor and all Subcontractors.
         .4 Provincial Departments and resources from local emergency organizations, based on type of hazard, incident or accident which might occur and as stipulated in applicable laws and regulations.
   .3 Submit two (2) copies of Contractor's authorized representative's work site health and
safety inspection reports to Consultant.

.4 Submit copies of incident and accident reports.

.5 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 02 61 00 - Hazardous Facility Remediation.

.6 Consultant will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within five (5) days after receipt of plan. Revise plan as appropriate and resubmit plan to Consultant within two (2) days after receipt of comments from Consultant.

.7 Consultant's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.

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

.9 Maintain Worker's Compensation Coverage for duration of contract. Submit Letter of Good Standing to Consultant.

1.4 DEFINITIONS

.1 Electrical Facility: means any system, equipment, device, apparatus, wiring, conductor, assembly or part thereof that is used for the generation, transformation, transmission, distribution, storage, control, measurement or utilization of electrical energy, and that has an amperage and voltage that is dangerous to persons.

.2 Guarantee of Isolation: means a guarantee by a competent person in control or in charge that a particular facility or equipment is isolated.

.3 De-energize: in the electrical sense, that a piece of equipment is isolated and grounded, e.g. if the equipment is not grounded, it cannot be considered de-energized (DEAD).

.4 Guarded: means that an equipment or facility is covered, shielded, fenced, enclosed, inaccessible by location, or otherwise protected in a manner that, to the extent that is reasonably practicable, will prevent or reduce danger to any person who might touch or go near such item.

.5 Isolate: means that an electrical facility, mechanical equipment or machinery is separated or disconnected from every source of electrical, mechanical, hydraulic, pneumatic or other kind of energy that is capable of making it dangerous.

.6 Live/alive: means that an electrical facility produces, contains, stores or is electrically connected to a source of alternating or direct current of an amperage and voltage that is dangerous or contains any hydraulic, pneumatic or other kind of energy that is capable of making the facility dangerous to persons.

1.5 SITE CONTROL AND ACCESS

.1 Control work site and entry points. Grant and allow entry to only workers and other persons so authorized. Immediately stop non-authorized persons from circulating within construction areas and remove from site.

.2 Prior to gaining access to the site, all contractors, subcontractors and suppliers shall file with the General Contractor their proof of Workers Compensation coverage, proof of required Insurance and proof of contract. Upon request, proof of these documents will be provided to the Owner and Consultant.

.3 Delineate and isolate construction areas from other areas of site by use of appropriate means. Erect barricades, fences, hoarding and temporary lighting as required. See Section 01 50 00 - Facilities and Controls for minimum type of barriers acceptable.

.4 Erect signage at entry points and at other strategic locations around site, clearly identifying construction area(s) as being "off limits" to non-authorized persons. Signage must be professionally made.

.5 Ensure persons granted access are fitted and wear appropriate personal protective equipment (PPE).
1.6 PROTECTION
  .1 Provide temporary facilities for protection and safe passage of building occupants, public pedestrian and vehicular traffic around and adjacent to work site.
  .2 Provide safety barricades, lights and signage on work site as required to provide a safe working environment for workers.

1.7 PERMITS
  .1 Obtain and pay for all permits related to project prior to commencement of Work.
  .2 Obtain permits, licenses and compliance certificates, at appropriate times and frequency as stipulated by authorities having jurisdiction.
  .3 Post all permits on site. Submit copies to Consultant.

1.8 FILING OF NOTICE
  .1 File Notice of Project and other Notices with Provincial authorities prior to commencement of Work.

1.9 SAFETY ASSESSMENT
  .1 Perform site specific safety hazard assessment related to project.
  .2 Perform on-going hazard assessments during the progress of Work identifying new or potential health risks and safety hazards not previously known. As a minimum hazard assessments shall be carried out when:
    .1 New subtrade work, new subcontractor(s) or new workers arrive at the site to commence another portion of work.
    .2 The scope of work has been changed by Change Order.
    .3 Potential hazard or weakness in current health and safety practices are identified by Consultant or by an authorized safety representative.
  .3 Each hazard assessment to be made in writing. Keep copies of all assessments on site for duration of Work. Upon request, make available to Consultant for inspection.
  .4 Contractor to conduct a hazard assessment in conjunction with the Owner's maintenance staff as part of the planning process including isolating existing equipment where applicable and identification of hidden services where anchoring is required. Hazard Assessments to conform with requirements of Health and Safety Section 01 35 29 - Health, Safety, and Emergency Response Procedures.

1.10 MEETINGS
  .1 Prior to commencement of work hold Health and Safety meeting. Have Contractor's Site Superintendent in attendance.
  .2 Provide site safety orientation session to all workers and other authorized persons prior to granting them access to work site. Brief persons on site conditions and on the minimum site safety rules in force at site.
  .3 Conduct site specific occupational health and safety meetings during the entire work as follows:
    .1 Formal meetings on a minimum monthly basis.
    .2 Informal tool box meetings on a regular basis from a predetermined schedule.
  .4 Keep workers informed of anticipated hazards, on safety practices and procedures to be followed and of other pertinent safety information related to:
    .1 Progress of Work;
    .2 New sub-trades arriving on site and;
    .3 Changes in site and project conditions.
  .5 Record and post minutes of meetings. Make copies available to Consultant upon request.
1.11 COMPLIANCE REQUIREMENTS

.1 Comply with Occupational Health and Safety Act, Occupational Health and Safety Act Regulations, PEI.

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

.3 Provide Consultant with Material Safety Data Sheets (MSDS).

.4 Observe and enforce construction safety measures required by National Building Code, 2015 Part 8, Provincial Government, Worker's Compensation Board and municipal statutes and authorities.

.5 Perform lockouts in compliance with:
   .2 Regulations and code of practice as applicable to mechanical equipment or other machinery being de-energized.
   .3 Procedures specified herein.

.6 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Consultant will advise on the course of action to be followed.

1.12 WHMIS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets acceptable to Labour Canada and Health and Welfare Canada and Provincial Department of Labour.

.2 Submit WHMIS data sheets to Consultant in accordance with Section 01 33 00 - Submittal Procedures.

.3 Maintain WHMIS information station and ensure designated personnel are trained in its use.

.4 Submit copies of all Tool Box or Safety Meeting notes.

.5 Submit copies of all Worksite Safety Inspections.

1.13 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.

1.14 HEALTH AND SAFETY COORDINATOR

.1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:
   .1 Have minimum two (2) years site-related working experience specific to activities associated with Construction.
   .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 responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

1.15 CONSTRUCTION SAFETY MEASURES

.1 Observe and enforce construction safety measures required by National Building Code,
2010 Part 8, Provincial Government, Worker's Compensation Board and municipal statutes and authorities.

.2 In event of conflict between any provisions of above authorities the most stringent provision governs.

.3 PEI Occupational Health and Safety Act and regulations, guidelines and code practice, stipulate standard equipment applicable to construction sites such as protective clothing, safety hats and boots, gloves, eye protection.

.4 Provide and maintain first aid equipment, supplied and medications appropriate to the work and its location in accordance with the First Aid Regulations. Obtain and implement recommendations from Occupational Health and Safety Division specific to the project work site.

1.16 OVERLOADING

.1 Ensure no part of work is subjected to a load that will endanger its safety or cause permanent deformation.

1.17 SCAFFOLDING

.1 Design and construct scaffolding in accordance with CSA S269.2-M87 and maintain in a secure and safe manner.

1.18 TESTING AND MONITORING

.1 Test and monitor for hazardous conditions, as required to demonstrate compliance with provincial regulations.

.2 If multiple locations are being worked simultaneously, provide monitoring at all locations where work is being carried out, including providing additional monitoring instruments.

1.19 RECORD KEEPING

.1 ALL activities associated with Health and Safety shall be recorded daily in a bound notebook. Include as a minimum; activity date, time, location of occurrence, mitigation action taken and results. Records shall be assessed by the Consultant.

1.20 ISOLATION OF EXISTING SERVICES

.1 Obtain Consultant's written authorization prior to conducting work on an existing active, energized service or facility required as part of the work and before proceeding with lockout of such services or facility.

.2 To obtain authorization, submit to Consultant following documentation:

.1 Written Request for Isolation of the service or facility and;

.2 Copy of Contractor's Lockout Procedures.

.3 Make a Request for Isolation for each event, unless directed otherwise by Consultant, and as follows:

.1 Fill-out standard forms in current use at the Facility when so directed by Consultant or;

.2 Where no form exist at Facility, make request in writing identifying:

.1 Identification of system or equipment to be isolated, including it's location;

.2 Time duration, indicating Start time & date and Completion time & date when isolation will be in effect.

.3 Voltage of service feed to system or equipment being isolated.

.4 Name of person making the request.

.3 Document to be in typewritten format.

.4 Do not proceed until receipt of written notification from Consultant granting the Isolation Request and authorization to proceed with the isolation of designated equipment or facility. Consultant may designate other individual at the Facility as the person
authorized to grant the Isolation Request.

.5 Conduct safe, orderly shut down of equipment or facilities, de-energize and isolate power and other sources of energy and lockout items in accordance with requirement of clause 1.8 below.

.6 Plan and schedule shut down of existing services in consultation with the Consultant and the Facility Manager. Minimize impact and downtime of facility operations.

.7 Determine in advance, as much as possible, in cooperation with the Consultant, the type and frequency of situations which will require a Request for Isolation. Follow Consultant's directives in this regard.

.8 Conduct hazard assessment as part of the planning process of isolating existing equipment and facilities. Hazard Assessments to conform with requirements of Health and Safety Section 01 35 29 - Health, Safety and Emergency Response Procedures.

1.21 LOCKOUTS

.1 Isolate and lockout electrical facilities, mechanical equipment and machinery from all potential energy sources prior to starting work on such items.

.2 Develop and implement lockout procedures to be followed on site as an integral part of the Work.

.3 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.

.4 Use industry standard lockout tags.

.5 Provide appropriate safety grounding and guards as required.

.6 Prepare Lockout Procedures in writing. Describe safe work practices, work functions and sequence of activities to be followed on site to safely isolate all potential energy sources and lockout/tagout facilities and equipment.

.7 Include within procedures a system of worker request and issuance of individual lockout permit by a person, employed by Contractor, designated to be "in-charge" and being responsible for:

.1 Controlling issuance of permits or tags to workers.

.2 Determining permit duration.

.3 Maintaining record of permits and tags issued.

.4 Submitting a Request for Isolation to Consultant when required in accordance with Clause 1.7 above.

.5 Designating a Safety Watcher, when one is required based on type of work.

.6 Ensuring equipment or facility has been properly isolated, providing a Guarantee of Isolation to worker(s) prior to proceeding with work.

.7 Collecting and safekeeping lockout tags, returned by workers, as a record of the event.

.8 Clearly establish, describe and allocate, within procedures, the responsibilities of:

.1 Workers.

.2 Designated person controlling issuance of lockout tags/permits.

.3 Safety Watcher.

.4 Subcontractors and General Contractor.

.9 Procedures shall meet the requirements of Codes and Regulations specified in clause 1.5 above.

.10 Generic procedures, if used, must be edited, supplemented with pertinent information and tailored to reflect specific project conditions. Clearly label as being the procedures applicable to this contract.

.1 Incorporate site specific rules and procedures established by Facility Manager and in force at site. Obtain such procedures through Consultant.

.11 Procedures to be in typewritten format.
.12 Submit copy of Lockout Procedures to Consultant, in accordance with submittal requirements of clause 1.6 herein, prior to commencement of work.

1.22 CONFORMANCE

.1 Ensure that lockout procedures, as established for project on site, are stringently followed. Enforce use and compliance by all workers.

.2 Brief all persons working on electrical facilities, mechanical and other equipment fed by an energy source on requirements of this section.

.3 Failure to perform lockouts in accordance with regulatory requirements or follow procedures specified herein may result in the issuance of a Non-Compliance Notification at Consultant's discretion with possible disciplinary measures imposed as specified in section 01 35 28.

1.23 FIRE SAFETY REQUIREMENTS

.1 Comply with requirements of latest standard for Building Construction Operations issued by the Fire Commissioner of Canada and Fire Safety Regulations of Local Authority.

.2 Implement and follow fire safety measures during Work. Comply with following:

  .2 Fire Protection Standards FCC 301 and FCC 302.

.3 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Consultant will advise on the course of action.

1.24 WELDING AND CUTTING

.1 Use noncombustible shields for electric and gas welding or cutting executed within two (2) meters of combustible material or in occupied space.

.2 Place tanks supplying gases as close to work as possible. Fix in upright position, free from exposure to sun or high temperatures.

.3 Locate fire extinguishing equipment near all welding and cutting operations.

1.25 OPEN FLAMES, SPARKS, EXPLOSION PROTECTION

.1 Keep open flames and sparks to minimum. When flame or sparks are required, follow proper procedures to prevent fire or explosion.

1.26 HOT WORK AUTHORIZATION

.1 Obtain Consultant's written "Authorization to Proceed" before conducting any form of Hot work on site.

.2 To obtain authorization submit to Consultant:

  .1 Contractor's typewritten Hot Work Procedures to be followed on site as specified below.
  .2 Description of the type and frequency of Hot Work required.
  .3 Sample Hot Work Permit to be used.

.3 Upon review and confirmation that effective fire safety measures will be implemented during performance of hot work, Consultant will provide authorization to proceed as follows:

  .1 Issue one written "Authorization to Proceed" covering the entire project for duration of work or;
  .2 Separate work, or segregate certain parts of work, into individual entities. Each entity requiring a separately written "Authorization to Proceed" from Consultant. Follow Consultant's directives in this regard.
.4 Requirement for individual authorization based on:
   .1 Nature or phasing of work;
   .2 Risk to Facility operations;
   .3 Quantity of various trades needing to perform hot work on project or;
   .4 Other situation deemed necessary by Consultant to ensure fire safety on
      premises.

.5 Do not perform any Hot Work until receipt of Consultant's written "Authorization to
   Proceed" for that portion of work.

.6 In tenant occupied Facility, coordinate performance of Hot Work with Facility Manager
   through the Consultant. When directed, perform Hot Work only during non-operative
   hours of Facility. Follow Consultant's directives in this regard.

1.27 HOT WORK PROCEDURES

.1 Develop and implement safety procedures and work practices to be followed during the
   performance of Hot Work.

.2 Procedures to include:
   .1 Requirement to perform hazard assessment of site and immediate hot work area
      for each hot work event in accordance with Hazard Assessment and Safety Plan
      requirements of section 01 35 29.
   .2 Use of a Hot Work Permit system for each hot work event.
   .3 The step by step process of how to prepare and issue permit.
   .4 Permit shall be issued by Contractor's site Superintendent, or other authorized
      person designated by Contractor, granting permission to worker or subcontractor
      to proceed with hot work.
   .5 Maintain a fire extinguisher in the immediate area where hot work is being
      undertaken.
   .6 Provision of a designated person to carryout a Fire Safety Watch for a minimum
      of 2 hours immediately upon completion of the hot work.
   .7 Compliance with fire safety codes and standards specified herein and
      Occupational Health and Safety regulations specified in Section 01 35 29 -
      Health, Safety, and Emergency Response Procedures.

.3 Generic procedures, if used, must be edited and supplemented with pertinent
   information tailored to reflect specific project conditions. Clearly label as being the Hot
   Work Procedures applicable to this contract.

.4 Hot Work Procedures shall clearly establish worker instructions and allocate
   responsibilities of:
   .1 Worker(s),
   .2 Authorized person issuing the Hot Work Permit,
   .3 Fire Safety Watcher,
   .4 Subcontractors and Contractor.

.5 Brief all workers and Subcontractors on Hot Work Procedures and Permit system
   established for project. Stringently enforce compliance.
   .1 Failure to comply with the established procedures may result in the issuance of a
      Non-Compliance Notification at Consultant's discretion with possible disciplinary
      measures imposed as specified in Section 01 35 29 - Health, Safety, and
      Emergency Response Procedures.

1.28 HOT WORK PERMIT

.1 Hot Work Permit to include, as a minimum, the following data:
   .1 Project name and project number.
   .2 Building name, address and specific room or area where hot work will be
      performed.
.3 Date when permit issued.
.4 Description of hot work type to be performed.
.5 Special precautions required, including type of fire extinguisher needed.
.6 Name and signature of person authorized to issue the permit.
.7 Name of worker (clearly printed) to which the permit is being issued.
.8 Time Duration that permit is valid (not to exceed 8 hours). Indicate start time & date and completion time & date.
.9 Worker signature with date and time upon hot work termination.
.10 Specified time period requiring safety watch.
.11 Name and signature of designated Fire Safety Watcher, complete with time & date when safety watch terminated, certifying that surrounding area was under his continual surveillance and inspection during the full watch time period specified in Permit and commenced immediately upon completion of Hot Work.

.2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.
.3 Each Hot Work Permit to be completed in full and signed as follows:
   .1 Authorized person issuing Permit before hot work commences.
   .2 Worker upon completion of Hot Work.
   .3 Fire Safety Watcher upon termination of safety watch.
   .4 Returned to Contractor's Site Superintendent for safe keeping.

1.29 FIRE PROTECTION AND ALARM SYSTEMS
.1 Fire protection and alarm systems shall not be:
   .1 Obstructed.
   .2 Shut-off, unless approved by Consultant.
   .3 Left inactive at the end of a working day or shift.
.2 Do not use fire hydrants, standpipes and hose systems for purposes other than fire fighting.
.3 Costs incurred, from the fire department, Facility owner and tenants, resulting from negligently setting off false alarms will be charged to the Contractor in the form of financial progress payment reductions and holdback assessments against the Contract.

1.30 FIRE SAFETY
.1 The Sub-Contractors are to participate on the Fire Safety Committee under the Joint Health and Safety Committee. The Fire Safety Committee under the direction of the Contractor is responsible for implementation and maintenance of the Construction Fire Safety Plan.
.2 Construction Fire Safety Plan:
   .1 The Construction Fire Safety Plan will include the following:
      .1 Introduction of plan and purpose.
      .2 Fire Safety Committee.
      .3 Terms of reference.
   .2 Committee composition.
   .3 Emergency Procedures.
   .4 Fire protection equipment.
   .5 Building description.
   .6 Provisions for fire fighting.
   .7 Portable extinguishers.
   .8 Exits.
   .9 Emergency Lighting.
   .10 Reduced drawings.
Fire safety maintenance schedule:

1. General.
2. Maintenance levels.
3. Skill categories.
4. Frequency.
5. Checklists.

Other information:

1. Instruction on use of fire extinguishers.
2. Emergency Fire Drill procedures.

Portable Fire Extinguishers:

1. During construction, Contractor is to provide and maintain on the site at all times, ULC listed 25 lb ABC dry chemical type portable fire extinguishers.

Blockage of Roadways:

1. The Fire Department shall be advised of any work that would impede fire apparatus response. This includes violation of minimum overhead clearance, as prescribed by the Fire Department, erecting of barricades and the digging of trenches.

Rubbish and Waste Materials:

1. Rubbish and waste materials are to be kept to a minimum.
2. The burning of rubbish is prohibited.
3. Removal:
   1. All rubbish shall be removed from the work site at the end of the workday or shift or as directed by Consultant.

Storage:

1. Extreme care is required where it is necessary to store oily waste in work areas to ensure maximum possible cleanliness and safety.
2. Greasy or oily rags or materials subject to spontaneous ignition shall be deposited and kept in an approved receptacle and removed as required in 1.7.3.1.

Flammable Liquids:

1. The handling, storage and use of flammable liquids are to be governed by the current National Fire Code of Canada.
2. Flammable liquids such as gasoline, kerosene and naphtha may be kept for ready use in quantities not exceeding 45 liters provided they are stored in approved safety cans bearing the Underwriter's Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable liquids exceeding 45 liters for work purposes, requires the permission of the Fire Department.
3. Transfer of flammable liquids having a flash point below 38°C is prohibited within buildings.
4. Transfer of flammable liquids shall not be carried out in the vicinity of open flames or any type of heat-producing devices.
5. Flammable liquids having a flash point below 38°C, such as naphtha or gasoline, shall not be used as solvents or cleaning agents.
6. Flammable waste liquids, for disposal, shall be stored in approved containers located in a safe ventilated area. Quantities are to be kept to minimum and the Fire Department is to be notified when disposal is required.

Fire Inspection:

1. The Fire Department shall be allowed unrestricted access to the work site.
2. The Contractor shall cooperate with the Fire Department during routine inspections of the work site.
3. The Contractor shall immediately remedy all unsafe fire situations observed by
the Fire Department.

1.31 POSTING OF DOCUMENTS
   .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Consultant.

1.32 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.

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

1.34 POWDER ACTUATED DEVICES
   .1 Use powder actuated devices only after receipt of written permission from Consultant.

1.35 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.

1.36 SITE SAFETY MEETINGS
   .1 An orientation meeting shall be held with all workers at the start-up of the work, with the presence of the Consultant to review the Health and Safety aspects of the work.
   .2 An orientation meeting shall be held by the Contractor for each new worker on the site following the initial orientation meeting.
   .3 Attend Health and Safety meetings as directed by Consultant.

1.37 HANDLING AND TRANSPORTATION OF DANGEROUS GOODS
   .1 Observe and enforce all measures required by the regulatory agencies including but not limited to Environment Canada, Prince Edward Island Department of Environment, and Transport Canada.
   .2 Most current regulatory guidelines and Acts will apply to the work.
   .3 In case of any conflict, the more stringent requirements will apply.

1.38 OPEN EXCAVATIONS
   .1 If open foundations or demolition areas are to be left at the end of a work day, protective fencing must be placed around the entire perimeter to limit access by others. Fencing to be self-supporting, approved by the Department of Labour and the Construction Safety and Industrial Safety Regulations.

1.39 POTENTIAL HAZARDS
   .1 Hazards include, but are not limited to, toxic, flammable and explosion hazards associated with cleaning solvents.
   .2 The Contractor shall become familiar with all potential hazards associated with the work, and shall take necessary measures to avoid injury or damage of any kind.

1.40 HEALTH AND SAFETY PLAN
   .1 Prior to commencement of the work, submit to the Construction Manager a detailed
Health and Safety Plan for review. The Health and Safety Plan shall comply with the provisions of this section, and shall illustrate the Contractor's knowledge and understanding of health and safety aspects of the work, the Contractor's intention to maintain a high level of safety on-site, and shall include, but not be limited to:

1. Description of Work
2. Description of Site-specific hazards:
   1. Physical
   2. Chemical
   3. Environmental
3. Protective Equipment:
   1. Respiratory
   2. Contact
4. Decontamination Procedures:
   1. Personal protective equipment (PPE)
   2. Equipment
   3. Infection Control personal protective equipment required by CSA Z317.13-03.
5. Medical - Monitoring:
   1. Workers medical profile and suitability to work at the site.
6. Air - Monitoring Procedures:
   1. Action levels
   2. Site monitoring
   3. Perimeter monitoring
7. Emergency Procedures:
   1. Emergency Equipment
   2. Contingency Plans:
8. General Safety:
   1. Designation of site-safety officer
   2. Safety log
   3. Trenching, digging, excavations
   4. Storage of flammables, compressed gases
   5. Safety inspections
9. Site Training:
   1. Initial hazard
   2. Daily safety

All workers shall be trained and be familiar with the Health and Safety Plan and the use of personal protective equipment.

1.41 SITE SAFETY OFFICER

1. Each Trade Contractor shall appoint a responsible member of the work force as Site Safety Office (SSO). The selection of the SSO will be subject to the approval of the Consultant, and changes shall be made as requested by the Consultant. The SSO shall be responsible for ensuring that all provisions of the Health and Safety Plan and relevant legislation are implemented. The SSO shall ensure that all monitoring and testing, as specified and at the direction of the Consultant, are conducted. The SSO shall maintain records of all readings that are taken by the Contractor report and any abnormal or dangerous situation to the Consultant and the Municipality, after having implemented emergency measures, as required, work shall not continue or proceed until the situation has been rectified.

2. The SSO shall be authorized to act on behalf of the Contractor on all matters related to Health and Safety.
1.42 PERSONAL PROTECTIVE EQUIPMENT

.1 Use personal protection equipment as required by Occupational Health and Safety Act.
.2 Training of workers in the proper use, fitting, inspection and storage of personal protective equipment shall be done prior to use of the equipment.

1.43 SANITATION/DECONTAMINATION PRACTICES

.1 After each use, all disposable protective equipment shall be collected in a dedicated container for disposal.
.2 All respiratory equipment shall be decontaminated daily after use.
.3 All tools, pumps and equipment used during cleanup should be dedicated to the handling of contaminants and labeled as such and thoroughly decontaminated at the completion of the project.
.4 Contaminated work clothing shall not be worn outside of regulated areas.
.5 Workers shall wash their hands and exposed skin before eating, drinking, smoking or using toilet facilities during work shift, and at the completion of a work shift.
.6 Food, drink and tobacco products shall not be permitted in regulated areas.

1.44 WORK PRACTICES AND ENGINEERING CONTROLS

.1 Access to work areas shall be regulated and limited to authorized persons. A daily roster shall be kept of persons entering such areas.
.2 Handling Contaminants and General Work Practices.
   .1 Transportation and handling of contaminants to meet applicable local, provincial and federal regulations.
   .2 Emergency respiratory equipment shall be located in readily accessible locations which will remain minimally contaminated with contaminants in an emergency.
   .3 Containers and systems shall be handled and opened with care. Approved protective clothing shall be worn by all employees engaged in regulated areas.
   .4 All wastes and residues containing contaminants shall be collected in appropriate containers.
.3 Confined or Enclosed Spaces
   .1 Entry into confined or enclosed spaces, where there is limited egress, shall be controlled by a permit system. Permits shall be signed by an authorized representative of the employer and shall certify that appropriate measures have been taken to prevent adverse effects on the worker's health as a result of his or her entry into such space.
   .2 Confined or enclosed spaces which have contained contaminants shall be thoroughly ventilated to assure an adequate supply of oxygen, tested for contaminants, and inspected for compliance with these requirements prior to each entry. Adequate ventilation shall be maintained while workers are in such spaces. Each individual entering such confined or enclosed space shall be furnished with appropriate personal protective equipment and clothing and be connected by a lifeline harness to standby worker stations outside of the space. The standby worker shall also be equipped for entry with approved personal protective equipment and clothing and have contact with a third person. The standby person shall maintain communication (visual, voice, signal line, telephone, radio, or other suitable means) with the employee inside the confined or enclosed space.
   .3 Workers entering confined spaces and standby workers shall be trained at a recognized confined space training program.

1.45 RECORD KEEPING

.1 ALL activities associated with Health and Safety shall be recorded daily in a bound notebook. Include as a minimum: activity date, time, location of occurrence, mitigation
action taken and results. Records shall be assessed by the Consultant.

1.46 SUSPENSION OF ACTIVITIES

.1 Exposure to contaminants shall be controlled so that no worker is exposed to contaminants at a concentration greater than the Time Weighted Average (TWA) concentration for the contaminant, for up to a 10 hour workday, 40 hour work week.

.2 The Contractor will halt activities immediately during unsafe conditions. All costs relating to suspension of work for Contractor’s failure to maintain Health and Safety procedures shall be borne by the Contractor.

END OF SECTION
1 General

1.1 FIRES
.1 Fires and burning of rubbish on site not permitted.

1.2 DISPOSAL OF WASTES
.1 Do not bury rubbish and waste materials on site.
.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

1.3 DRAINAGE
.1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
.2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.4 SITE CLEARING AND TREE PROTECTION
.1 Protect trees and plants on site and adjacent properties where indicated. Trees shall be carefully preserved as far as possible during construction. Trees marked on the drawings for removal shall be transplanted or replaced back to their original position.
.2 Before work commences, the Contractor shall inspect the site along with the Owner and their representative to indicate the extents of construction impact on the trees. Any additional work which may impact the trees shall only commence after written consent.
.3 Minimize stripping of topsoil and vegetation.
.4 Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of two (2) m.
.5 Protect roots of trees to drip line during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
.6 Provide adequate protection in the form of planks and/or barricades to prevent damage to trunk, branches or roots of existing trees designated to remain.
.7 Protection of trees from compaction and mechanical injury or ground which is not excavated will be provided for by this Contractor. A protective fence shall be erected 1.5m from the tree trunk to keep materials, equipment, soils, fuels, etc., away from the tree.
.8 Open trenches can be mechanically dug between trees up into the drip line till where roots 50mm in diameter are uncovered. A similar trench shall be dug on the opposite side of the tree. Hand digging or tunneling is required between the two trenches.
.9 Any damaged roots will be cut back to uninjured tissue and kept from drying until the trench is refilled with soil. If roots larger than 100mm in diameter are damaged, the top of the tree will be thinned proportionally after monitoring for one year.
.10 The line and depth of the trench and tunnel shall be given by the minimum dimensions given in the following table.
1.5 WORK ADJACENT TO WATERWAYS

.1 Do not operate construction equipment in waterways.
.2 Do not use waterway beds for borrow material.
.3 Do not dump excavated fill, waste material or debris in waterways.
.4 Design and construct temporary crossings to minimize erosion to waterways.

1.6 POLLUTION CONTROL

.1 Maintain temporary erosion and pollution control features installed under this contract.
.2 Control emissions from equipment and plant to local authorities emission requirements.
.3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
.4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
    Provide dust control for temporary roads.
    .1 Control emissions from equipment and plant to local authorities emission requirements.
        .1 Place construction equipment so that dust, smoke, fumes and odours do not move toward or enter air intakes or windows of the adjacent building. If dust, smoke, fumes or odours are found to be entering adjacent buildings by any means, the Contractor will be required to stop work at the Contractor's own expense and work will not be allowed to recommence until problem is rectified to satisfaction of Owner and Consultant.
    .2 Maintain noise level of construction work to minimum practical to avoid unnecessary disturbance of adjacent residences.
    .3 Provide dust control for building demolition and site work. Refer to Section 02242 - Dust Control for requirements relating to work of this project.
    .4 Cover or wet down dry materials and rubbish, while awaiting or during removal, to prevent blowing dust and debris.
    .5 Protect with straw erosion control blankets or uniform open weave straw matting properly secured by steel wire staples and hydro seeded any inclined exposed embankments as soon as possible after removal of embankments.
    .6 Construct and maintain ditch and silt screens. The fence/ditch dams should be installed in such a manner to prevent siltation of the existing storm sewers and surfaces.
    .7 Prepare and submit for approval, by Consultant and Owner, a detailed schedule indicating the sequence and duration of each construction activities along with an environmental protection plan specifying measures that would be incorporated in the work to minimize the impact.
of the construction activities on the adjacent waterway and the environment.

1.7 SMOKING RESTRICTIONS
1.8 ENVIRONMENTAL PERMIT APPROVAL

- Smoking is not permitted inside the building at any time or at any stage of construction.
- Comply with requirements contained in the PEI Department of Transportation, Infrastructure and Energy Environmental Management Division environmental approval permit for the project and any other permits in force during the construction phase of this project.

END OF SECTION
1 General

1.1 REFERENCES AND CODES
.1 Perform Work in accordance with National Building Code of Canada (NBC) 2010 including all amendments up to tender closing date, Atlantic Canada Standards and Guidelines Manual for the supply, treatment, storage, distribution and monitoring of drinking water systems and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
.2 Meet or exceed requirements of:
.1 Contract documents.
.2 Specified standards, codes and referenced documents.

1.2 HAZARDOUS MATERIAL DISCOVERY
.1 Asbestos: Demolition of spray or trowel-applied asbestos is hazardous to health. Should material resembling spray or trowel-applied asbestos be encountered in course of demolition work, immediately stop work and notify Consultant.
.2 Should material suspected of containing PCB’s be encountered in the course of demolition work, immediately stop work and notify Consultant.

END OF SECTION
General

1.1 RELATED SECTIONS
.1 Section 01 33 00 - Submittal Procedures.
.2 Section 01 78 00 - Closeout Submittals.

1.2 REFERENCES
.1 Canadian Construction Documents Committee (CCDC)
   .1 CCDC 2-2008, Stipulated Price Contract.

1.3 INSPECTION
.1 Allow Consultant access to Work. If part of Work is in preparation at locations other than
   Place of Work, allow access to such Work whenever it is in progress.
.2 Give timely notice requesting inspection if Work is designated for special tests,
   inspections or approvals by Consultant instructions, or law of Place of Work.
.3 If Contractor covers or permits to be covered Work that has been designated for special
   tests, inspections or approvals before such is made, uncover such Work, have
   inspections or tests satisfactorily completed and make good such Work.
.4 Consultant may order any part of Work to be examined if Work is suspected to be not in
   accordance with Contract Documents. If, upon examination such work is found not in
   accordance with Contract Documents, correct such Work and pay cost of examination
   and correction. If such Work is found in accordance with Contract Documents, Owner
   shall pay cost of examination and replacement.

1.4 INDEPENDENT INSPECTION AGENCIES
.1 Independent Inspection/Testing Agencies are to be engaged by Contractor for purpose
   of inspecting and/or testing portions of Work. Cost of such services will be borne by
   Contractor.
.2 Provide equipment required for executing inspection and testing by appointed agencies.
.3 Employment of Inspection/Testing Agencies does not relax responsibility to perform
   Work in accordance with Contract Documents.
.4 If defects are revealed during inspection and/or testing, appointed agency may request
   additional inspection and/or testing to ascertain full degree of defect. Correct defect and
   irregularities as advised by Consultant at no cost to Owner. Pay costs for re-testing and
   re-inspection.

1.5 PROCEDURES
.1 Notify appropriate agency and Consultant in advance of requirement for tests, in order
   that attendance arrangements can be made.
.2 Submit samples and/or materials required for testing, as specifically requested in
   specifications. Submit with reasonable promptness and in an orderly sequence so as not
   to cause delay in Work.
.3 Provide labour and facilities to obtain and handle samples and materials on site. Provide
   sufficient space to store and cure test samples.

1.6 REJECTED WORK
.1 Remove defective Work, whether result of poor workmanship, use of defective products
   or damage and whether incorporated in Work or not, which has been rejected by
   Consultant as failing to conform to Contract Documents. Replace or re-execute in
   accordance with Contract Documents.
.2 Make good other Contractor's work damaged by such removals or replacements
   promptly.
.3 If in opinion of Consultant it is not expedient to correct defective Work or Work not
performed in accordance with Contract Documents, Owner may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Consultant.

1.7 REPORTS
   .1 Submit three (3) copies of inspection and test reports to Consultant.
   .2 Provide copies to Subcontractor of work being inspected or tested.

1.8 TESTS AND MIX DESIGNS
   .1 Furnish test results and mix designs as may be requested.
   .2 The cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by Consultant and may be authorized as recoverable.

1.9 MOCK-UPS
   .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of all Sections required to provide mock-ups.
   .2 Construct in all locations acceptable to Consultant.
   .3 Prepare mock-ups for Consultant's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.
   .4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
   .5 If requested, Consultant will assist in preparing a schedule fixing dates for preparation.
   .6 Remove mock-up at conclusion of Work or when acceptable to Consultant.
   .7 Mock-ups may remain as part of Work as directed by Consultant.

1.10 MILL TESTS
   .1 Submit mill test certificates as requested.

1.11 EQUIPMENT AND SYSTEMS
   .1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.
1 General

1.1 RELATED SECTIONS
.1 Section 01 50 00 - Facilities and Controls.
.2 Section 01 52 00 - Construction Facilities.
.3 Section 01 56 00 - Temporary Barriers and Enclosures.

1.2 CONTRACTORS SITE OFFICE
.1 The Contractors site office will be located in an area designated by the Consultant following the Award of Contract.
.2 If required, the Contractor will provide, at not cost to the Owner, an office heated to 22° C, lighted 750 Lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table, table and chairs for site meetings.
.3 The Contractor will provide private washroom facilities in or adjacent to office complete with chemical type toilet, lavatory and mirror and maintain supply of paper towels, toilet tissue and soap.
.4 The Contractor will provide telephone and internet access on separate line independent of telephone for use by Contractor, Consultant and Owner. All toll charges will be the responsibility of the user.

1.3 INSTALLATION AND REMOVAL
.1 Provide temporary utilities controls in order to execute work expeditiously.
.2 Remove from site all such work after use.

1.4 DEWATERING
.1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.
.2 Filter water containing silt through geofabric prior to discharge into municipal storm water system or water course.

1.5 WATER SUPPLY
.1 Water supply will be the financial responsibility of the Contractor for construction usage, pressure testing of piping and other work. Make arrangements and pay costs for the use and transportation of such services to work area.

1.6 SANITARY FACILITIES
.1 The Contractor will provide, at no cost to the Owner, sanitary facilities for work force in accordance with governing regulations and ordinances for entire duration of project.
.2 The Contractor will post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.
.3 Sanitary facilities must be located within the limits of the construction.

1.7 POWER
.1 Provide and pay all costs to supply and install temporary cabling, panel boards, switching devices and other equipment as required to connect into power source, provide adequate ground fault protection and extend power supply from existing source to work areas. Perform work and make all connections in accordance with the Canadian Electrical Code, in compliance with the federal and provincial Occupational Health and Safety Regulations as specified in section 01 35 28 and to lockout requirements specified in section 01 35 25.
.2 Provide and maintain temporary lighting to conduct work. Ensure illumination level is not less than 162lx in all locations.
.3 Electrical power and lighting systems installed under this Contract can be used for
construction requirements provided that guarantees are not affected thereby. Re-instate all damaged systems. Replace lamps which have been used over period of three (3) months.

1.8 TEMPORARY HEATING AND VENTILATION

.1 Provide temporary heating required during construction period, including attendance, maintenance and fuel.

.2 Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted.

.3 Provide temporary heat and ventilation in enclosed areas as required to:
   .1 Facilitate progress of Work.
   .2 Protect Work and products against dampness and cold.
   .3 Prevent moisture condensation on surfaces.
   .4 Provide temperatures and humidity levels for storage, installation and curing of materials.
   .5 Provide adequate ventilation to meet health regulations for safe working environment.

.4 Maintain temperatures of minimum 10°C in areas where construction is in progress.

.5 Ventilating:
   .1 Prevent accumulations of dust, fumes, mists, vapors or gases in areas occupied during construction.
   .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
   .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
   .4 Ventilate storage spaces containing hazardous or volatile materials.
   .5 Ventilate temporary sanitary facilities.
   .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.

.6 Ensure Date of Substantial Performance and Warranties for heating system do not commence until entire system is in as near original condition as possible and is certified by Consultant.

.7 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
   .1 Conform with applicable codes and standards.
   .2 Enforce safe practices.
   .3 Prevent abuse of services.
   .4 Prevent damage to finishes.
   .5 Vent direct-fired combustion units to outside.

.8 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

1.9 FIRE PROTECTION

.1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies, authorities having jurisdiction, governing codes, regulations and bylaws.

END OF SECTION
1 General

1.1 RELATED SECTIONS
.1 Section 01 50 00 - Facilities and Controls.
.2 Section 01 51 00 - Temporary Utilities.
.3 Section 01 56 00 - Temporary Barriers and Enclosures.

1.2 REFERENCES
.1 Canadian Construction Documents Committee (CCDC)
   .1 CCDC 2-2008, Stipulated Price Contract.
.2 Canadian General Standards Board (CGSB)
   .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
.3 Canadian Standards Association (CSA International)
   .1 CAN3-A23.1-/A23.2-94, Concrete Materials and Methods for Concrete
      Construction/Method of Test for Concrete.

1.3 INSTALLATION AND REMOVAL
.1 Provide construction facilities in order to execute work expeditiously.
.2 Remove from site all such work after use.

1.4 SCAFFOLDING
.1 Provide and maintain scaffolding.
.2 Design, construct and maintain scaffolding in rigid, secure and safe manner in
   accordance with CAN/CSA-S269.2-M87(R1998).
.3 Erect scaffolding independent of walls. Remove when no longer required.

1.5 HOISTING
.1 Provide, operate and maintain hoists and cranes required for moving of workers,
   materials and equipment. Make financial arrangements with Subcontractors for use
   thereof.
.2 Hoists and cranes shall be operated by qualified operator.

1.6 SITE STORAGE/LOADING
.1 Confine work and operations of employees by Contract Documents. Do not
   unreasonably encumber premises with products.
.2 Do not load or permit to load any part of Work with a weight or force that will endanger
   the Work.

1.7 SECURITY
.1 Contractor is responsible for security on site and within limits of this Contract.
.2 Where required, provide and pay for responsible security personnel to guard site and
   contents of site after working hours and during holidays.

1.8 EQUIPMENT, TOOL AND MATERIALS STORAGE
.1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for
   storage of tools, equipment and materials.
.2 Locate materials not required to be stored in weatherproof sheds on site in a manner to
   cause least interference with work activities.
.3 Provide adequate weather tight, heat and ventilation appropriate for the use and storage
of equipment, tools and materials.

1.9 CONSTRUCTION SIGNAGE
   .1 Project signs are provided in a location designated by Owner.
   .2 No other signs or advertisements, other than warning signs, are permitted on site.
   .3 Maintain approved signs and notices in good condition for duration of project.

END OF SECTION
1 General

1.1 REFERENCES
  .2 General provisions and contract specifications for highway construction, PEI TIE.

1.2 PROTECTION OF PUBLIC TRAFFIC
  .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
  .2 Review with Provincial Traffic Authority and City Public Works Manager all precautions to be taken and safety measures to be put in place and obtain acceptance before proceeding with work.
  .3 Provide and maintain, as a minimum, two way traffic (one lane of traffic in each direction) on all roads, adjacent streets, and access to businesses at all times during the construction period.
  .4 When working on traveled way:
     .1 Place equipment in position to present minimum of interference and hazard to traveling public.
     .2 Keep equipment units as close together as working conditions permit and preferably on same side of traveled way.
     .3 Do not leave equipment on traveled way overnight.
  .5 Do not close any lanes of road without approval of Provincial Traffic Authority and City Public Works Manager. Before re-routing traffic erect suitable signs and devices in accordance with instructions contained in Part D of UTCD.
  .6 Keep traveled way graded, free of pot holes and of sufficient width for required number of lanes of traffic.
     .1 Provide minimum 7 m wide temporary roadway for traffic in two-way sections through Work and on detours.
     .2 Provide minimum 5 m wide temporary roadway for traffic in one-way sections through Work and on detours.
     .3 Maintain two way traffic at all times.
  .7 As indicated, provide graveled detours or temporary roads to facilitate passage of traffic around restricted construction area.
  .8 Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, unless other means of road access exist that meet approval of Consultant.
  .9 As part of their submission, the bidders shall submit a detailed Traffic Management Plan. The Plan is to be provided to the City and Consultant for review prior to any commencement of work. The Traffic Plan shall be approved by the City and/or their representatives.
     .1 The scope of the Plan includes the provision for the safe movement of vehicular and pedestrian traffic, the protection of workers from passing traffic, the provision for access to properties located within the limits of the Project, the design, construction, maintenance and removal of any necessary temporary roadways and detours, the provision of traffic devices and controllers, the installation of temporary signs, road markings, lighting and safety barriers.
     .2 It shall also cover maintenance of the existing road corridor, including the existing road, road shoulder, sidewalks, landscaping, etc. that may be used for the temporary diversion of traffic, over the duration of construction.
     .3 City's objectives with respect to the Traffic Management Plan are to:
        .1 Ensure the safety of the general public, pedestrians, cyclists, City's
employees, contractors, and traffic.

.2 Keep traffic delays to a minimum.
.3 Maintain satisfactory property access.
.4 Minimize disruption to businesses.
.5 For works near traffic lights:
   .1 Protect the equipment and loops.
   .2 Coordinate with City operation of the traffic lights.
   .3 When work impacted or interrupt the operation of traffic signals, make suitable arrangements, notify and obtain approval from City.
.6 Provide environmental protection and minimize disturbance to the environment.
.7 Design temporary roadways in accordance with approved Plan.
.8 Meet with Consultant and City on a regular basis to review and update the Plan during the course of construction.
.9 City and Consultant will review the Plan to ensure it is appropriate and is being implemented effectively. Changes may arise from a change of scope or from opportunities for improvement. The Plan will then be updated to reflect any changes which have occurred.

.4 As part of the Traffic Management requirement, the Contractor will have for the duration of this project a properly trained supervisor on-site at all times, whose sole responsibility is traffic management.

1.3 INFORMATIONAL AND WARNING DEVICES

.1 Provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Work which requires road user response.
.2 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Part D, Temporary Conditions Signs and Devices, of UTCD manual and PEI TIE manual.
.3 Place signs and other devices in locations recommended in UTCD manual.
.4 Meet with Consultant prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Consultant.
.5 Continually maintain traffic control devices in use by:
   .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
   .2 Removing or covering signs which do not apply to conditions existing from day to day.

1.4 CONTROL OF PUBLIC TRAFFIC

.1 Provide competent flag persons, trained in accordance with, and properly equipped as specified in, UTCD manual in the following situations:
   .1 When public traffic is required to pass working vehicles or equipment that block all or part of traveled roadway.
   .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
   .3 When workmen or equipment are employed on traveled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
   .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
.5 Provide full time flag person during daylight hours to control both construction activities and public traffic and to permit pedestrians safe passage.
.6 For emergency protection when other traffic control devices are not readily available.
.7 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
.8 Delays to public traffic due to contractor's operators: maximum ten (10) minutes.
.9 Flag person to have two-way radio communications at all times.

END OF SECTION
1 General

1.1 RELATED SECTIONS
   .1 Section 01 50 00 - Facilities and Controls.
   .2 Section 01 51 00 - Temporary Utilities.
   .3 Section 01 52 00 - Construction Facilities.
   .4 Section 01 55 26 - Traffic Control.

1.2 REFERENCES
   .1 Canadian General Standards Board (CGSB)
     .1 CGSB 1.189M-84, Primer, Alkyd, Wood, Exterior.
     .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
   .2 Canadian Standards Association (CSA International)

1.3 INSTALLATION AND REMOVAL
   .1 Provide temporary controls in order to execute Work expeditiously.
   .2 Remove from site all such work after use.
   .3 Temp barrier for 01 50 00.

1.4 HOARDING
   .1 Not Applicable.

1.5 GUARD RAILS AND BARRICADES
   .1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts,
     open stair wells, open edges of floors and roofs, and other areas where a change in
     elevation of greater than 900mm exists.
   .2 Provide as required by governing authorities.

1.6 WEATHER ENCLOSURES
   .1 Provide weather tight closures to unfinished door and window openings, tops of shafts
     and other openings in floors and roofs.
   .2 Close off floor areas where walls are not finished; seal off other openings; enclose
     building interior work for temporary heat.
   .3 Design enclosures to withstand wind pressure and snow loading.

1.7 FIRE ROUTES
   .1 Maintain access to property including overhead clearances for use by emergency
     response vehicles.

1.8 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY
   .1 Protect surrounding private and public property from damage during performance of
     Work.
   .2 Be responsible for damage incurred.

1.9 PROTECTION OF BUILDING FINISHES
   .1 Provide protection for finished and partially finished building finishes and equipment
     during performance of Work.
   .2 Provide necessary screens, covers, and hoardings.
   .3 Confirm with Consultant locations and installation schedule three (3) days prior to
     installation.
   .4 Be responsible for damage incurred due to lack of or improper protection.
1.10 PROTECTION OF LANDSCAPE ELEMENT

.1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.

.2 Be responsible for damage incurred due to lack of or improper protection.

END OF SECTION
1 General

1.1 GENERAL

.1 Use new material and equipment unless otherwise specified.

.2 Within seven (7) days of written request by Consultant, submit following information for materials and products proposed for supply:

.1 Name and address of manufacturer.

.2 Trade name, model and catalog number.

.3 Performance, descriptive and test data.

.4 Manufacturer's installation or application instructions.

.5 Evidence of arrangements to procure.

.3 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.

1.2 REFERENCE STANDARDS

.1 Conform to reference standards, in whole or in part as specifically requested in specifications.

.2 If there is question as to whether any product or system is in conformance with applicable standards, Consultant reserves right to have such products or systems tested to prove or disprove conformance.

.3 Conform to latest date of issue of referenced standards in effect on date of submission of Bids, except where specific date or issue is specifically noted.

1.3 CONFORMANCE

.1 When material or equipment is specified by standard or performance specifications, upon request of Consultant, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.

1.4 SUBSTITUTION OF MATERIAL

.1 Proposals for substitution may be submitted only after award of Contract. Such requests must include statements of respective costs of items originally specified and proposed substitutions.

.2 Proposals will be considered by Consultant if:

.1 Products selected by tenderer from those specified, are not available, or

.2 Delivery date of products selected from those specified would unduly delay completion of Contract.

.3 Alternative products to those specified, which are brought to attention of, and considered by Consultant as equivalent to those specified and will result in credit to Contract amount.

.4 Should proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on project. Pay for design or drawing changes required as a result of substitution.

.5 Amounts of all credits arising from approval of substitutions will be determined by Consultant and Contract price will be reduced accordingly. No substitutions will be permitted without prior written approval of Consultant.

1.5 QUALITY OF PRODUCTS

.1 Products, materials, equipment and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

.2 Defective products, whenever identified prior to completion of Work, will be rejected,
regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

.3 Should any dispute arise as to quality or fitness of products, decision rests strictly with Consultant based upon requirements of Contract Documents.

.4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

.5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.6 QUALITY OF WORK

.1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.

.2 Do not employ anyone unskilled in their required duties. Consultant reserves right to require dismissal from site, workers deemed incompetent or careless.

.3 Decisions as to standard of Quality of Work in cases of dispute rest solely with Consultant, whose decision is final.

1.7 AVAILABILITY

.1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.

.2 In event of failure to notify Consultant at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Consultant reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.8 TRANSPORTATION

.1 Pay costs of transportation and handling of products required in performance of Work.

.2 Transportation cost of products supplied by Owner will be paid for by Owner. Contractor to unload, handle and store such products.

1.9 STORAGE, HANDLING AND PROTECTION

.1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

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

.3 Store products subject to damage from weather in weatherproof enclosures.

.4 Store cementitious products clear of earth or concrete floors, and away from walls.

.5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

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

.7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.8 Remove and replace damaged products at own expense and to satisfaction of Consultant.

.9 Touch-up damaged factory finished surfaces to Consultant's satisfaction. Use touch-up
1.10 MANUFACTURER'S INSTRUCTIONS

.1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

.2 Notify Consultant in writing of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Consultant to require removal and re-installation at no increase in Contract Price or Contract Time.

1.11 CO-ORDINATION

.1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.12 FASTENINGS - GENERAL

.1 Provide metal fastenings and accessories in same texture, color and finish as base metal in which they occur.

.2 Prevent electrolytic action between dissimilar metals.

.3 Use non-corrosive fasteners, anchors and spacers for securing exterior work.

.4 Space anchors within limits of load bearing or shear capacity and ensure that they provide positive permanent anchorage. Wood plugs not acceptable.

.5 Keep exposed fastenings to minimum, space evenly and lay out neatly.

.6 Fastenings which cause spalling or cracking are not acceptable.

.7 Obtain Consultant's approval before using explosive actuated fastening devices. If approval is obtained comply with CSA Z166-1975, and observe restrictions in Section 01 35 29 - Health, Safety and Emergency Response Procedures.

1.13 FASTENINGS - EQUIPMENT

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

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur and resilient washers with stainless steel.

1.14 LOCATION OF FIXTURES

.1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.

.2 Inform Consultant of conflicting installation. Install as directed.

1.15 CONCEALMENT

.1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

.2 Before installation, inform Consultant if there is interference. Install as directed by Consultant.

1.16 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.17 CONSTRUCTION EQUIPMENT AND PLANT

.1 On request, prove to the satisfaction of Consultant that the construction equipment and plant are adequate to manufacture, transport, place and finish work to quality and production rates specified. If inadequate, replace or provide additional equipment or plant as directed.

.2 Maintain construction equipment and plant in good operating order.

END OF SECTION
1 General

1.1 RELATED SECTIONS
   .1 Section 01 10 00 - Summary
   .2 Section 01 33 00 - Submittal Procedures.
   .3 Individual product Sections: cutting and patching incidental to work of section. Advance notification to other sections required.

1.2 SUBMITTALS
   .1 Submit written request in advance of cutting or alteration which affects:
      .1 Structural integrity of any element of Project.
      .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 separate contractor.
   .2 Include in request:
      .1 Identification of Project.
      .2 Location and description of affected Work.
      .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 separate contractor.
      .7 Written permission of affected separate contractor.
      .8 Date and time work will be executed.

1.3 MATERIALS
   .1 Required for original installation.
   .2 Change in Materials: Submit request for substitution in accordance with Section 01 33 00 - Submittal Procedures.

1.4 PREPARATION
   .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
   .2 After uncovering, inspect conditions affecting performance of Work.
   .3 Beginning of cutting or patching means acceptance of existing conditions.
   .4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.
   .5 Provide protection from elements for areas which may be exposed by uncovering work; maintain excavations free of water.

1.5 EXECUTION
   .1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.
   .2 Fit several parts together, to integrate with other Work.
   .3 Uncover Work to install ill-timed Work.
   .4 Remove and replace defective and non-conforming Work.
   .5 Remove samples of installed Work for testing.
   .6 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.
   .7 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
   .8 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not
allowed on masonry work without prior approval.

.9 Restore work with new products in accordance with requirements of Contract Documents.

.10 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.11 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material; full thickness of the construction element.

.12 Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

.13 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

END OF SECTION
1 General

1.1 RELATED SECTION
.1 Section 01 77 00 - Closeout Procedures.
.2 All Sections

1.2 PROJECT CLEANLINESS
.1 Maintain work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
.2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Consultant.
.3 Clear snow and ice from access to construction, bank/pile snow in designated areas only.
.4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
.5 Provide on-site containers for collection of waste materials and debris.
.6 Provide and use clearly marked separate bins.
.7 Remove waste and debris from site and deposit in waste container at end of each working day.
.8 Clean interior areas prior to start of finish work, and maintain areas free of dust and other contaminants during finishing operations.
.9 Store volatile waste in covered metal containers, and remove from premises at end of each day.
.10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
.11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
.12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.3 CLEANING DURING CONSTRUCTION
.1 Maintain work site in a tidy condition, free from accumulations of waste material and debris. Clean areas on a daily basis.
.2 Keep existing building entrances, corridors and stairwells used by workers in clean dust free condition at all times. Conduct thorough cleaning of these areas at end of each work shift.
.3 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.
.4 Provide and employ dust barriers, dividers, seals on doors and other dust control measures as required to ensure dust and dirt generated by work are not transmitted to other existing areas of building. Should dust accidentally migrate into areas under use by building occupants or public, employ such means as may be necessary to immediately clean all contaminated surfaces within these area(s) to the satisfaction of the Consultant.

1.4 FINAL CLEANING
.1 Prior to final review, remove surplus products, tools, construction machinery and equipment.
.2 Remove waste products and debris.
.3 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
.4 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical
fixtures, furniture fitments, walls, and floors.
.5 Clean lighting reflectors, lenses, and other lighting surfaces.
.6 Vacuum clean and dust building interiors, behind grilles, louvers and screens.
.7 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
.8 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
.9 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
.10 Remove dirt and other disfiguration from exterior surfaces.
.11 Clean and sweep roofs, gutters, area ways, and sunken wells.
.12 Sweep and wash clean paved areas.
.13 Clean equipment and fixtures to a sanitary condition; clean or replace filters of mechanical equipment.
.14 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.
.15 Remove snow and ice from access to construction.

END OF SECTION
1 General

1.1 RELATED SECTIONS
   .1 Section 00 73 00 - Supplementary Conditions.
   .2 Section 01 78 00 - Closeout Submittals.
   .3 Section 01 91 13 - General Commissioning Requirements.

1.2 INSPECTION AND DECLARATION
   .1 Contractor's Inspection: Contractor and all Subcontractors shall conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
      .1 Notify Consultant in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
      .2 Request Consultant's Inspection.
   .2 Consultant's Inspection: Consultant, Owner and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor shall correct Work accordingly.
   .3 Completion: submit written certificate that following have been performed:
      .1 Work has been completed and inspected for compliance with Contract Documents.
      .2 Defects have been corrected and deficiencies have been completed.
      .3 Equipment and systems have been tested, adjusted and are fully operational.
      .4 Certificates required by Boiler Inspection Branch have been submitted.
      .5 Systems have been commissioned
      .6 Operation of systems have been demonstrated to Owner's personnel.
      .7 Work is complete and ready for final inspection.
   .4 Final Inspection: when items noted above are completed, request final inspection of Work by Owner and Consultant. If Work is deemed incomplete by Consultant complete outstanding items and request re inspection.
   .5 Declaration of Substantial Performance: when Consultant consider deficiencies and defects have been corrected and it appears requirements of Contract have been substantially performed, make application for Certificate of Substantial Performance. Refer to CCDC 2, General Conditions Article for specifics to application.
   .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance shall be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
   .7 Final Payment: When Consultant consider final deficiencies and defects have been corrected and it appears requirements of Contract have been totally performed, make application for final payment. Refer to CCDC2. If Work is deemed incomplete by Owner, complete outstanding items and request re inspection. Cost of re inspection will be deducted from final payment.
   .8 Payment of Holdback: After issuance of Certificate of Substantial Performance of Work, submit an application of payment of holdback amount in accordance with CCDC2.

1.3 CERTIFICATE OF SUBSTANTIAL PERFORMANCE
   .1 Upon approval, a Certificate of Substantial Performance will be issued to the Owner by the Consultant with a copy delivered to the Contractor. This Certificate will take the form shown in Section 01 77 00 - Closeout Procedures.
   .2 The Certificate of Substantial Performance will establish the date of the Consultant's inspection as the date of Substantial Performance of the Contract, and will commence the required 60-day period before release of the lien holdback amount.
During the 60-day period, Contractor shall continue to complete the work.

The Contractor shall immediately deliver to the Consultant specified submissions upon receipt of the Certificate of Substantial Performance.

1.4 ESTABLISHMENT OF WARRANTIES
   .1 Warranties shall commence at date of Substantial Performance of the Work.

1.5 CERTIFICATE FOR PAYMENT OF LIEN HOLDBACK AMOUNT
   .1 The Contractor shall submit statement and supporting documents for application of Release of Lien Holdback amount. These documents include those listed in Paragraph 2.2.2 and 2.2.3 and the Statutory Declaration Form CCDC 9A.
   .2 Within five (5) working days of receipt of application for Release of Lien Holdback amount and if approved, the Consultant will prepare a Certificate for Payment of the Lien Holdback amount. This Certificate dated on the day following termination of the 60 day period will be issued to the Owner with a copy delivered to the Contractor.
   .3 The Contractor shall submit to the Owner documents confirming that no liens related to the Contract are registered and that no notice of liens has been received at the end of the 60-day period.
   .4 Should no liens exist, the Lien Holdback will be due and payable one day after termination of the 60-day period in the amount indicated on the approved application for Certificate of Substantial Performance.
   .5 The Owner will review jointly with the Contractor's Insurance related to the Contract before the 60-day period is terminated to ensure that all parties are adequately covered.

1.6 TOTAL PERFORMANCE
   .1 The Contractor shall inspect the work to establish its completion in accordance with the Contract Documents and when satisfied of this completion request of the Consultant a final inspection.
   .2 The Consultant will compile a final deficiency list at this inspection and issue it to the Contractor and Owner.
   .3 The Contractor shall correct final deficiencies before a date agreed upon by the Contractor and Consultant.
   .4 When the Contractor has satisfied himself that these corrections have been completed in a satisfactory manner by his inspection, he shall schedule a re-inspection by the Consultant, and the Owner's representatives if required, within five working days of the Contractor's request.
   .5 When the Consultant is satisfied that all deficiencies have been rectified and the work is complete, the Contractor shall submit an application for the final progress payment.
   .6 When “seasonal deficiencies”, as determined by the Owner and/or Consultant exist, a sum of money will be withheld in accordance with the requirements of CCDC2-GC5.8.

1.7 WARRANTY PERIOD
   .1 The Owner will advise the Consultant of defects observed during Warranty periods.
   .2 The Consultant will notify the Contractor of these defects and request him to remedy the defects in accordance with the Contract Documents.
   .3 Thirty days before expiration of Warranties the Owner's representatives, the Consultant and the Contractor will review the work as arranged by the Contractor noting defects of products and workmanship.
   .4 The Contractor shall immediately remedy such noted defects.
1.8 CERTIFICATE

.1 CONTRACTOR: _________________________________________________

PROJECT: _____________________________________________________

DATE OF SUBSTANTIAL PERFORMANCE ___________________________

.1 Substantial Performance Inspection for above described work was carried out __________________________(date) by:

.1 For Owner _________________________________
.2 For Consultant ______________________________
.3 For Contractor ______________________________

for the purpose of determining items not in accordance with Plans and Specifications.

.2 The items which are not in accordance with the Plans and Specifications and require correction under the Conditions of the Contract Agreement are listed as an attachment to this Document.

.2 CONTRACTOR’S CERTIFICATION

I hereby Certify that the work has been executed in accordance with the Plans and Specifications with the exception of deficiencies listed herewith. The undersigned hereby agrees that notwithstanding the generality of the foregoing, the acceptance of the works shall not prejudice any rights of the Owner or affect any liabilities of the undersigned Contractor pursuant to the provisions of the Contract.

_____________________________  __________________________
Contractor                          Date

OWNER’S ACCEPTANCE

I hereby accept the work on behalf of the Owner providing that the deficiencies listed herewith are completed. This acceptance is not to be construed as relieving the Contractor from the responsibility to correct other defects in the work, whether latent or patent, as may become apparent within the guarantee/warranty period. This acceptance is made without prejudice to the rights of the Owner or to the liabilities of the Contractor which may arise and/or continue after acceptance of the work.

_____________________________  __________________________
Owner                          Date

CONSULTANT’S DECLARATION

Based on periodic visits to the job site and general familiarity with the progress of the work, I declare that, to the best of my knowledge, information and belief, construction is proceeding in accordance with the intent of the design and in general compliance with the plans and specifications, with the exception of the deficiencies listed herewith.

_____________________________  __________________________
Consultant                          Date
.3 The following is a list of deficiencies to be corrected. This acceptance is not to be construed as relieving the Contractor from the responsibility of correcting other defects in the work as may become apparent during the Guarantee/Warranty Period.
.1
.2
.3
.4
.5

END OF SECTION
1 General

1.1 SECTION INCLUDES

.1 Project Record Documents as follows:
  .1 As-built drawings;
  .2 As-built specifications;
  .3 Reviewed shop drawings.

.2 Operations and Maintenance data as follows:
  .1 Operations and Maintenance Manual;
  .2 Maintenance Materials;
  .3 Spare Parts;
  .4 Special Tools.

1.2 RELATED SECTIONS

.1 Section 01 45 00 - Quality Control.
.2 Section 01 77 00 - Closeout Procedures.
.3 Section 01 91 13 - General Commissioning Requirements.

1.3 PROJECT RECORD DOCUMENTS

.1 Consultant will provide two white print sets of contract drawings and two copies of Specifications Manual specifically for "as-built" purposes.

.2 Maintain at site one set of the contract drawings and specifications to record actual as-built site conditions.

.3 Maintain up-to-date, real time as-built drawings and specifications in good condition and make available for inspection by the Consultant at any time during construction.

.4 As-Built Drawings:
  .1 Record changes in red ink on the prints. Mark only on one set of prints and at completion of project and prior to interim inspection, neatly transfer notations to second set (also by use of red ink). Submit both sets to Consultant. All drawings of both sets shall be stamped "As-Built Drawings" and be signed and dated by Contractor.

  .2 Show all modifications, substitutions and deviations from what is shown on the contract drawings or in specifications.

  .3 Record following information:
    .1 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
    .2 Field changes of dimension and detail.
    .3 Location of all capped or terminated services and utilities.
    .4 Chases for mechanical, electrical and other services.
    .5 Ceiling and floor elevations.
    .6 Reflected ceiling plan condition showing finished layout of all ceiling-mounted services and devices.
    .7 Plumbing, heating, air conditioning and ventilation, sprinkler and electrical service installation locations; all to be dimensioned and referenced to building columns or load bearing walls.
    .8 All design elevations, sections, floor plans and details dimensioned and marked-up to consistently report finished installation conditions.
    .9 Any details produced in the course of the contract by the Consultant to supplement or to change existing design drawings must also be marked-up and dimensioned to reflect final as-built conditions and appended to the as-built drawing document.
.10 All change orders issued over the course of the contract must be documented on the finished as-built documents, accurately and consistently depicting the changed condition as it applies to all affected drawing details.

.5 As-built Specifications: legibly mark in red each item to record actual construction, including:
.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly items substituted from that specified.
.2 Changes made by Addenda and Change Orders.
.3 Mark up both copies of specifications; stamp "as-built", sign and date similarly to drawings as per above clause.

.6 Maintain As-built documents current as the contract progresses. Consultant will conduct reviews and inspections of the documents on a regular basis. Frequency of reviews will be subject to Consultant's discretion. Failure to maintain as-builts current and complete to satisfaction of the Consultant shall be subject to financial penalties in the form of progress payment reductions and holdback assessments.

1.4 REVIEWED SHOP DRAWINGS
.1 Compile full set of shop drawings and product data reviewed on project and incorporate into Operations and Maintenance Manual. Supply number of shop drawing sets equal to the required number of final Operations and Maintenance manuals.
.2 Submit shop drawing sets at same time and as part of the contents of the Operation and Maintenance manuals specified in this section.

1.5 OPERATIONS AND MAINTENANCE MANUALS
.1 Definition: an organized compilation of operating and maintenance data including detailed technical information, documents and records describing operation and maintenance of individual products or systems as specified in individual sections of the specifications.
.2 Manual Language: final manuals to be in English language.
.3 Number of copies required:
.1 Submit 2 interim copies of the manual for review and inspection by Consultant. Make revisions and additions as directed and resubmit.
.2 Upon review and acceptance by Consultant, submit 3 final copies. Initial copies are not to be considered as part of the final copies unless they have been fully revised and are identical to the final approved version.
.3 In addition, submit an electronic copy of all manuals.
.4 Submission Date: submit complete operation and maintenance manual to Consultant 3 weeks prior to application for Interim Certificate of Completion of project.
.5 Binding:
.1 Assemble, coordinate, bind and index required data into Operation and Maintenance Manual.
.2 Use vinyl, hard covered, 3 "D" ring binders, loose leaf, sized for 215 x 280 mm paper, with spine pocket.
.3 Where multiple binders are needed, correlate data into related consistent groupings.
.4 Identify contents of each binder on spine.
.5 Organize and divide data into sections same as 16 division numerical order of contract specifications and thereafter subdivided into various equipment or building systems.
.6 Material: separate each section by use of cardboard dividers and labels. Provide tabbed fly leaf for each separate product or system within each section and with
typed description of product and major component parts of equipment.

.7 Type lists and notes. Do not hand write.

.8 Drawings, diagrams and manufacturers' literature must be legible. Provide with reinforced, punched binder tab. Bind in with text; fold larger drawings to size of text pages.

.6 Manual Contents:

.1 Cover sheet containing:
   .1 Date submitted.
   .2 Project title, location and project number.
   .3 Names and addresses of Contractor, and all Sub-contractors.

.2 Table of Contents: provide full table of contents in each binder(s), clearly indicate which contents are in each binder.

.3 List of maintenance materials.

.4 List of spare parts.

.5 List of special tools.

.6 Original or certified copy of Warranties and Guarantees.

.7 Copies of approvals, and certificates issued by Inspection Authorities.

.8 Copies of reports and results from tests designated as Contractor's responsibilities.

.9 Product Information Data on all materials, equipment and systems as specified in individual sections of the specifications to include:
   .1 List of equipment including manufacturer's name, supplier, local source of supplies and service depot(s). Provide full addresses and telephone numbers.
   .2 Nameplate information including equipment number, make, size, capacity, model number and serial number.
   .3 Parts list.
   .4 Installation details.
   .5 Operating instructions.
   .6 Maintenance instructions for equipment.
   .7 Maintenance instructions for finishes.

.7 Shop drawings:

.1 Bind one complete set of reviewed shop drawings into each copy of operations and maintenance manual.

.2 Bind the shop drawings in a manner such that they correspond with the specification section they relate to.

.3 Where large quantity of data is supplied due to size of project, fold and bind professionally into separate correctly sized binder.

.8 Equipment and Systems Data: the following list indicates the type of data and extent of information required to be included for each item of equipment and for each system:

.1 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 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed color coded wiring diagrams.

.4 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.
.5 Maintenance Requirements: include routine procedures and guide for trouble-
shoots; disassembly, repair, and reassembly instructions; and alignment,
adjusting, balancing, and checking instructions.

.6 Servicing and lubrication schedule, and list of lubricants required.

.7 Manufacturer's printed operation and maintenance instructions.

.8 Sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and
diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide Contractor's coordination drawings, with installed color coded piping
diagrams.

.12 Provide charts of valve tag numbers, with location and function of each valve,
keyed to flow and control diagrams.

.13 Provide list of original manufacturer's spare parts, current prices, and
recommended quantities to be maintained in storage.

.14 Include test and balancing reports.

.15 Additional requirements as specified in individual specification sections.

.9 Materials and Finishes Maintenance Data:

.1 Building Products, Applied Materials, and Finishes: include product data, with
catalogue number, size, composition, and color and texture designations.

.2 Instructions for cleaning agents and methods, precautions against detrimental
agents and methods, and recommended schedule for cleaning and
maintenance.

.3 Moisture-protection and Weather-exposed Products: include manufacturer's
recommendations for cleaning agents and methods, precautions against
detrimental agents and methods, and recommended schedule for cleaning and
maintenance.

.4 Additional Requirements: as specified in individual specifications sections.

1.6 SPARE PARTS, TOOLS AND MAINTENANCE MATERIALS

.1 Provide spare parts, special tools and extra materials for maintenance purposes in
quantities specified in individual specification sections.

.2 Tag all items with associated function or equipment.

.3 Provide items of same manufacture and quality as items in Work.

.4 Deliver to site in well packaged condition. Store in location as directed by Consultant.

.5 Clearly mark as to contents indicating:

.1 Part number.

.2 Identification of equipment or system for which parts are applicable.

.3 Installation instructions or intended use as applicable.

.4 Name, address and telephone number of nearest supplier.

.6 Prepare and submit complete inventory list of items supplied. Include list within
Maintenance Manual.

1.7 SUBMISSION

.1 Prepare instructions and data using personnel experienced in maintenance and
operation of described products.

.2 Copy will be returned after final inspection, with Consultant's comments.

.3 Revise content of documents as required prior to final submittal.

.4 Two (2) weeks prior to Substantial Performance of the Work, submit to the Consultant,
three (3) final copies of operating and maintenance manuals in English.

.5 Ensure spare parts, maintenance materials and special tools provided are new,
undamaged or defective, and of same quality and manufacture as products provided in Work.

.6 If requested, furnish evidence as to type, source and quality of products provided.

.7 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

.8 Pay costs of transportation.

.9 Failure to deliver maintenance materials, spare parts, special tools and as-builts will delay progress payments.

1.8 FORMAT

.1 Organize data in the form of an instructional manual.

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

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

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

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

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

.7 Text: Manufacturer's printed data, or typewritten data.

.8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.9 CONTENTS - EACH VOLUME

.1 Table of Contents: provide title of project;

.1 date of submission; names,

.2 addresses, and telephone numbers of Consultant and Contractor with name of responsible parties;

.3 schedule of products and systems, indexed to content of volume.

.2 For each product or system:

.1 list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.3 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.

.4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control and Section 01 77 00 - Closeout Procedures.

.6 Training: Refer to Section 01 91 13 - General Commissioning Requirements.

1.10 RECORDING ACTUAL SITE CONDITIONS

.1 All original as-built drawings and records shall be submitted in the following form:

.1 Drawings shall be submitted as:

.1 One copy print paper

.2 One complete electronic copy in AutoCAD 2014 format.

.3 Paper size to 762mm x 1067mm (30" x 42")

.4 NO SEPIAS

.2 All drawings shall be dimensioned to be plotted at 1:500 Horizontal and 1:100 Vertical with a single plan view (on top of sheet) and single profile view (on bottom of sheet) per
.3 As-built drawings shall be a true reflection of what was built and not a reissued construction plans.

.4 Drawings shall accurately reflect the location of all as-built site features including concrete curb and gutters, edge of asphalt pavement, concrete bases, driveways, storm sewer systems, traffic control devices, signs, utility poles, retaining walls, top and bottom of slopes, ditches, trees, and all site features. Record coordinates, elevation, size and other relevant data.

.5 Drawings shall accurately reflect the location of manholes, gate valves, service boxes, lateral pipes, fire hydrants, etc. If necessary to accurately depict what has been built post construction total station or GPS surveys may be required.

.6 As-built drawings shall include physical ties (measurements) to assist with locating all gate valves, manholes, fire hydrants, distance between hydrant and hydrant control valve, water service laterals and sanitary sewer laterals. Ties shall be referenced to permanent fixture such as survey pins, power poles, manholes, etc.

.7 As built records shall include the number of turns and direction to open for full operation of all gate valves and fire hydrants.

.8 All elevations are to be geodetic with locations of all survey monuments and other benchmarks from which elevations were derived included on original as-builts. Currently the City records are in accordance with the PEI Double Stereographic Projection, NAD83 Datum with CSRS98 Realization.

1.11 EQUIPMENT AND SYSTEMS

.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 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed color coded wiring diagrams.

.4 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.

.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

.7 Include manufacturer's printed operation and maintenance instructions.

.8 Include sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide Contractor's coordination drawings, with installed color coded piping diagrams.

.12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

.13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.14 Include test and balancing reports as specified in Section 01 45 00 - Quality Control and 01 91 31 General Commissioning Requirements.

.15 Additional requirements: As specified in individual specification sections.
1.12 MATERIALS AND FINISHES
   .1 Building Products, Applied Materials, and Finishes: include product data, with catalog number, size, composition, and color 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 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
   .4 Additional Requirements: as specified in individual specifications sections.

1.13 SPARE PARTS
   .1 Provide spare parts, in quantities specified in individual specification sections.
   .2 Provide items of same manufacture and quality as items in Work.
   .3 Deliver to site; place and store.
   .4 Receive and catalog all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.
   .5 Obtain receipt for delivered products and submit prior to final payment.
   .6 Failure to deliver maintenance materials, special tools and spare parts at Substantial Performance WILL Delay Progress Payments.

1.14 MAINTENANCE MATERIALS
   .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
   .2 Provide items of same manufacture and quality as items in Work.
   .3 Deliver to site; place and store.
   .4 Receive and catalog all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.
   .5 Obtain receipt for delivered products and submit prior to final payment.

1.15 SPECIAL TOOLS
   .1 Provide special tools, in quantities specified in individual specification section.
   .2 Provide items with tags identifying their associated function and equipment.
   .3 Deliver to site; place and store.
   .4 Receive and catalog all items. Submit inventory listing to Consultant. Include approved listings in Maintenance Manual.

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

1.17 WARRANTIES AND BONDS
   .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
   .2 List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
   .3 Obtain warranties and bonds, executed in duplicate by Subcontractors, suppliers, and manufacturers where specifically requested by individual specification sections, within
ten days after completion of the applicable item of work.

.4 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.

.5 Verify that documents are in proper form, contain full information, and are notarized.

.6 Co-execute submittals when required.

.7 Retain warranties and bonds until time specified for submittal.

END OF SECTION
1 General

1.1 RELATED SECTIONS
.1 Section 01 78 00 - Close Out Submittals

1.2 COMMISSIONING OBJECTIVE
.1 Perform commissioning activities in order to achieve the following objectives:
   .1 Collect data on equipment and systems supplied; and to document their installation;
   .2 Conduct checks and tests on fully installed building component, equipment, systems and integrated systems to:
      .1 Verify whether they operate in accordance with requirements of Contract Documents;
      .2 Verify performance against design criteria and user requirements and measure peak capacities;
      .3 Prepare a Facility Management Manual (FMM) which contains operations and maintenance data, as-built record documents, commissioning reports, training data and other critical information for future use by Facility operational staff;
      .4 Ensure transfer of knowledge on the operations, maintenance and management of the Facility to Owner and Operational personnel by means of appropriate training.

.2 Commissioning activities conducted by Owner and/or Consultant does not replace checks, tests, adjustments, balancing and other performance verification responsibilities to be performed by Trade Contractor as part of the work and as specified in other sections of the Specifications.

1.3 DEFINITIONS
.1 For the purpose of this contract, the following terms, used in this section, as they relate directly or indirectly to the commissioning process, shall be deemed to have the meaning as defined hereafter.

.2 Commissioning Process: a planned program of tasks, activities and procedures carried out systematically during the Construction and Occupancy Stages in accordance with the commissioning objectives, specified in clause 1.2 above, to:
   .1 Verify whether the fully installed equipment, systems and integrated systems operate in accordance with contract documents and design criteria and;
   .2 Ensure that appropriate documentation is compiled to effectively train Operation and Maintenance staff and prepare a comprehensive Facility Management Manual (FMM).

.3 Commission (ie: to commission a building component or system): tests and checks conducted on all systems and integrated systems of Facility; carried out only after they are fully installed, functional and Contractor's Performance Verification responsibilities have been completed and approved.
   .1 Contractor provides assistance during this process by operating equipment and systems, by troubleshooting and making adjustments as may be required.
   .2 Systems are run under their full operation and under various modes to determine if they function correctly, consistently, at peak efficiency and interactively with each other as intended in accordance with Contract Documents and design criteria.
   .3 During these checks, adjustments may be made enhancing performance to meet environmental or user requirements.

.4 Contractor: means the Contractor, however it also refers to any personnel from Subcontractors, including the controls subcontractors, suppliers and manufacturer.
representatives with whom the Contractor contracts or obtains services for the performance of work and designated commissioning duties.

.5 Consultant: persons from the civil, architectural, mechanical and electrical design disciplines of the consultant firm(s) engaged by Owner to prepare the final design and contract documents.

.6 Design Criteria: All those factors included in the design of a Facility prescribed by the tenant needs or as determined by Consultant as necessary in order to meet all Facility functional and user operational requirements.

.7 Installation/Start-up Checks: (sometimes referred to as pre-functional checks). Checks and inspections to be performed by Contractor during the pre-start-up and start-up of a particular equipment or system component.

.1 Checklist sheets are produced which include the following data:

.1 Product manufacturer's installation instructions and recommended checks and;

.2 Special procedures as specified in relevant sections of Specifications;

.3 Other items considered good installation and engineering industry practices deemed appropriate for proper and efficient operation.

.2 Standard Installation/Start-up Checklist sheets prepared by equipment manufacturer are acceptable for use. Supplement with additional data representative of specific project conditions as deemed required by Consultant.

.3 Use Checklist sheets for all equipment installation. Document in writing on checklist the various checks made, deficiencies noted and corrective action taken.

.4 Installing Sub-Contractor to sign Checklist sheets upon completion, certifying that stated checks and inspections have been performed.

.8 Performance Verification: (sometimes referred to Functional Testing) checks, running dynamic tests and adjustments carried out by Contractor on equipment and systems, upon their installation, to ensure they operate correctly, efficiently and function independently and interactively with other systems as intended in accordance with contract documents and manufacturer's recommendations.

.1 Performance Verification shall not be considered part of the commissioning process. It is however considered an essential and integral part of Contractor's responsibilities in the equipment installation process which must be stringently conducted, successfully completed and approved by Owner before a piece of equipment or system is considered fully installed and functional.

.2 Facility components and systems will not be commissioned until performance verification has been completed and approved.

.9 Product Information (PI Data): a compilation of data gathered on a particular piece of equipment, typically produced by manufacturer, which includes nameplate information, installation/startup instructions, parts list, operating instructions, maintenance guidelines and other pertinent technical data and recommended checks that is necessary to prepare for start-up and functional testing and used during operation and maintenance of such equipment. This documentation is included in the Building Management Manual (BMM) at completion of work.

1.4 CONTRACTOR'S COMMISSIONING RESPONSIBILITIES

.1 General:

.1 Coordinate the participation of the various subcontractors, their specialists and manufacturer's representatives in providing the commissioning activities described below.

.2 Ensure that workers and manufacturer's personnel are knowledgeable and qualified to interpret system functions and intended design criteria.

.3 Develop a commissioning schedule.
.4 Notify Consultant in writing when Facility is ready to be commissioned. Give 14 calendar day notice.

.5 Commissioning of Facility and designated systems will only commence once that required documentation has been received and all installed equipment and systems have undergone successful performance verification.

.6 Be aware that inspection certificate will only be issued by Consultant when:
   .1 All commissioning documentation has been received, reviewed for suitability and approved by Consultant;
   .2 Designated facility components and systems have been commissioned and;
   .3 Training has been completed.

.7 Non-Conformance of Performance Verification Requirements:
   .1 Should incorrectly installed or malfunctioning equipment, system components or associated controls be found while Facility is being commissioned, Contractor shall be required to re-verify 100% of all equipment and components within the non functional system, including other related system as deemed required by Consultant, to correct deficiencies and ensure effective performance.
   .2 Costs to correct work and any additional tests or inspections, as deemed required by Consultant, to determine acceptability and proper performance of such items to be paid for by Contractor.

.2 Prior to Facility being Commissioned:
   .1 Submit commissioning documentation as specified in clause 1.8 for use during commissioning.
   .2 Carryout pre-start-up and start-up of equipment.
   .3 Conduct performance verification on all installed equipment and systems. Ensure they are fully functional.
   .4 Address deficiencies in Work identified during performance verification of equipment and systems. Conduct additional performance verification checks and tests to ensure acceptability of Work.
   .5 Arrange for special tools and devices, identified at commissioning meeting(s), as deemed required to assist with commissioning.
   .6 Provide access ladders, two way radios and other equipment required by Team when facility will be commissioned.

.3 When Facility is being Commissioned:
   .1 Provide qualified tradespersons to be present at site to assist commissioning activity.
   .2 Assist in commissioning architectural and structural building component, and mechanical, electrical and civil systems specified and as follows:
      .1 Operate designated building component, mechanical/electrical equipment and system under all modes of operation and conduct checks and tests as directed by Consultant.
      .2 Check and verify that building component, equipment, systems and integrated systems, including their controls, are functioning and responding correctly and interactively with each other.
      .3 Test systems independently and then in unison with other related systems.
      .4 Conduct all Commissioning checks and tests in presence of and witnessed by Consultant.
   .3 Specific procedures used to commission Facility may be provided by Consultant which includes:
      .1 Sequential order of building component and system to be tested.
.2 Running systems under various anticipated modes and demands (example: high and low cooling or heating loads, duplicating outside temperature conditions, fire alarm and power failure conditions etc...).

.3 Running building controls through all sequences of operation to verify and confirm that equipment and systems are responding as designed and intended.

.4 Operating designated equipment at peak capacities, recording output data against design criteria.

.4 Run component or systems as long as necessary to effectively commission all items as deemed required by Consultant.

.5 Monitor equipment and system responses.

.6 Record test results, measurements and other data.

.7 Assist in analyzing results. Identify system deficiencies and components not responding as intended.

.8 Correct deficiencies and system non-conformance issues. Adjust, calibrate or fine tune system components as required. Debug system software as may be required.

.9 Retest systems when directed to confirm compliance.

.4 Upon completion of Facility Commissioning:

.1 Provide training to Maintenance & Operational personnel as specified in clause 1.7 below.

.2 Turn over any filled-in checks sheets or reports resulting from commissioning.

.5 During Warranty period at Occupancy Stage:

.1 Fine tune components, systems and integrated systems and continue system debugging to optimize Facility performance.

.2 Rectify warranty issues.

.3 Submit written report to Consultant.

.1 Indicate results noted and corrective action taken.

.2 Note improvements made to operating parameters and control settings.

.3 Recommend modifications deemed advisable to improve performance, environmental conditions, energy consumptions and other issues.

.4 Consultant to be present during such work.

1.5 COMMISSIONING MEETINGS

.1 Convene commissioning meetings following project meetings: as required through the project to coordinate commissioning requirements.

.2 Purpose: to resolve issues, monitor progress, identify deficiencies, relating to commissioning.

.3 Continue commissioning meetings on regular basis until commissioning deliverables have been addressed.

.4 At 60% construction completion stage. Contractor to call a separate commissioning scope meeting to review progress including consultant, discuss schedule of equipment start-up activities and prepare for commissioning. Issues at meeting to include:

.1 Review duties and responsibilities of Contractor and subcontractors, addressing delays and potential problems.

.2 Determine the degree of involvement of trades and manufacturer’s representatives in the commissioning process.

.5 Thereafter commissioning meetings to be held until project completion and as required during equipment start-up and functional testing period.

.6 Meeting will be chaired by Contractor, who will record and distribute minutes within 3 business days.
Ensure Subcontractors and relevant manufacturer representatives are present at subsequent commissioning meetings and as required.

1.6 COMMISSIONING SCHEDULE

.1 Address commissioning activities within the construction work schedule. Clearly identify allocated time period for commissioning and training activities.

.2 Provide a commissioning schedule at the 60% construction stage in order that specific issues and individual details of commissioning can be reviewed, discussed and dealt with from that period onward to project completion. Submit updates thereafter.

.3 Indicate allocated time period and anticipated dates for:
  .1 Submission of commissioning documentation, including O&M Manuals.
  .2 Equipment and system start-up and performance verification, making them ready to be commissioned.
  .3 Allocated period to commission designated building components and systems.
  .4 Training period.
  .5 Work during Warranty period.

.4 Submit schedule to Construction Manager for review.

1.7 INSTRUCTORS

.1 Contractor and certified factory-trained manufacturers' personnel to provide instruction on the following:
  .1 Start-Up, operation, shut-down of equipment, components and systems.
  .2 Control features, reasons for, results of, implications on associated systems of, and adjustment of set points of control and safety devices.
  .3 Instructions on servicing, maintenance and adjustment of systems, equipment and components.

.2 Contractor and equipment manufacturer to provide instruction on:
  .1 Start-up, operation, maintenance and shut-down of equipment they have certified installation, started up and carried out PV tests.

1.8 TRAINING OBJECTIVES

.1 Training to be detailed and duration to ensure:
  .1 Safe, reliable, cost-effective, energy-efficient operation of systems in normal and emergency modes under all conditions.
  .2 Effective on-going inspection, measurements of system performance.
  .3 Proper preventive maintenance, diagnosis and trouble-shooting.
  .4 Ability to update documentation.

.2 Ability to operate equipment and systems under emergency conditions until appropriate qualified assistance arrives.

1.9 TRAINING MATERIALS

.1 Contractor to be responsible for content and quality.

.2 Training materials to include:
  .1 "As-Built" Contract Documents.
  .2 Operating Manual.
  .3 Maintenance Manual.
  .4 Management Manual.
  .5 Testing, Adjusting and Balancing and Performance Verification Reports.

.3 Training materials to be in a format that permits future training procedures to same degree of detail.

.4 Supplement training materials:
Transparencies for overhead projectors.
Multimedia presentations.
Manufacturer's training videos.
Equipment models.

1.10 RESPONSIBILITIES
1. Be responsible for:
   1. Implementation of training activities,
   2. Coordination among instructors,
   3. Quality of training, training materials,
2. Consultant will evaluate training and materials.
3. Upon completion of training, provide written report, signed by Instructors, witnessed by Consultant.
   1. Report to include a list of all attendees.

1.11 TRAINING CONTENT
1. Training to include demonstrations by Instructors using the installed equipment and systems.
2. Content includes:
   1. Review of facility and occupancy profile.
   2. Functional requirements.
   4. Review of system layout, equipment, components and controls.
   5. Equipment and system start-up, operation, monitoring, servicing, maintenance and shut-down procedures.
   6. System operating sequences, including step-by-step directions for starting up, shut-down, operation of valves, dampers, switches, adjustment of control settings and emergency procedures.
   7. Maintenance and servicing.
   8. Trouble-shooting diagnosis.
   9. Inter-Action among systems during integrated operation.
3. Provide specialized training as specified in relevant Technical Sections of the construction specifications.

1.12 VIDEO-BASED TRAINING
1. Manufacturer's videotapes to be used as training tool with Consultant's review and written approval 3 months prior to commencement of scheduled training.
2. On-Site training videos:
   1. Videotape training sessions for use during future training.
   2. To be performed after systems are fully commissioned.
   3. Organize into several short modules to permit incorporation of changes.
   3. Production methods to be professional quality.

1.13 TRAINING
1. Commence process of familiarizing O&M personnel in the early stages of work on purpose and operation of various equipment and systems. Continue process throughout the entire construction duration.
   1. Provide informal briefings during occasional site visits, at planned commissioning meetings and during the final commissioning site activities.
   2. Conduct formal demonstration and training sessions only after all identified systems
have been commissioned and Consultant has given approval to proceed with the training process.
.3 Provide training and demonstration on equipment, sub-systems, systems and integrated systems.
.4 Carryout training in accordance with requirements of Section 01 91 13 - General Commissioning Requirements.
.5 Submit written agenda of training session(s) 4 weeks before hand for review by Consultant.
.6 Submit training manuals for review 2 weeks prior to actual training.
.7 Ensure required tools and O&M Manuals are on site for training and system demonstration.
.8 As a minimum, the training sessions to cover the following information:
.1 Introduction.
.2 Description of the system with factory personnel being involved at appropriate times.
.3 Instructions on start-up procedures including seasonal procedures, system check-lists and emergency procedures.
.4 Operational procedures, including occupancy considerations, seasonal change-over, manual and automatic operations and emergency modes.
.5 Instruction on system shutdowns, including checklists.
.6 Instructions on all aspects of system maintenance, including routine servicing, lubrication, overhaul and factory servicing.
.7 Information concerning the scope of warranties and their use.
.8 A description of spare parts in stock and their service.
.9 A description of normal tools required for servicing the systems/equipment.
.9 Submit typewritten record of training sessions given and list of attendees. Use forms of format approved by Consultant.

1.14 DESCRIPTION
.1 Demonstrate scheduled operation and maintenance of equipment and systems to Owner's personnel two weeks prior to date of final inspection.
.2 Owner will provide list of personnel to receive instructions, and will co-ordinate their attendance at agreed-upon times.

1.15 QUALITY CONTROL
.1 When specified in individual Sections require manufacturer to provide authorized representative to demonstrate operation of equipment and systems, instruct Owner's personnel, and provide written report that demonstration and instructions have been completed.
.2 Obtain signature from attendees and provide a copy in the Building Maintenance Manual.

1.16 SUBMITTALS
.1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
.2 Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for Consultant's approval.
.3 Submit reports within one week after completion of demonstration, that demonstration and instructions have been satisfactorily completed.
.4 Record signatures of all attendees.
.5 Give time and date of each demonstration, with list of persons present.
1.17 CONDITIONS FOR DEMONSTRATIONS
.1 Equipment has been inspected and put into operation in accordance with respective applicable Sections.
.2 Testing, adjusting, and balancing has been performed and equipment and systems are fully operational.
.3 Provide copies of completed operation and maintenance manuals for use in demonstrations and instructions.

1.18 PREPARATIONS
.1 Verify that conditions for demonstration and instructions comply with requirements.
.2 Verify that designated personnel are present.

1.19 DEMONSTRATION AND INSTRUCTIONS
.1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, sequencing, winter/summer operating, servicing, and maintenance of each item of equipment at scheduled times, at the equipment location.
.2 Instruct personnel in phases of operation and maintenance using operation and maintenance manuals as basis of instruction.
.3 Review contents of manual in detail to explain aspects of operation and maintenance.
.4 Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instructions.

1.20 COMMISSIONING DOCUMENTATION
.1 Submit the following documentation for use during commissioning and for incorporation thereafter into a Facility Management Manual (FMM).
.2 Operations and Maintenance Manuals, Project Record Documents and other data as specified in Section 01 78 00 - Closeout Submittals. Data to include:
   .1 Equipment Product Information (PI Data) complete with:
      .1 Nameplate info,
      .2 Installation instructions,
      .3 Operating procedures and
      .4 Maintenance guidelines.
      .5 Reviewed shop drawings,
      .6 As-built record drawings and Specifications.
   .2 Completed Installation/Start-up Checklist sheets used.
   .3 Copy of any static and dynamic test and reports conducted.
   .4 Reports as specified in various trade sections.
.3 Documentation to include detailed information and number of copies as specified for maintenance manuals of Section 01 78 00 - Closeout Submittals.

END OF SECTION
**Sheet Title:**

21 JAN 2020

**ISSUED FOR TENDER:**

**DATE:**

**REVISIONS NO.:**

C302

**PLAN:** SITE

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**PRESSURE PROVIDE CONDUITS & CABLES TO CONNECT TO SPECIFIED ITEMS INSIDE CHAMBER OUTDOOR MAIN BREAKER; OR APPROVED SQUARE D 100Amp 8-SPACE 16-CIRCUIT REQUIRED CONDUITS TO CHAMBER. COORDINATE W/ EQUIPMENT SUPPLIER SCADA. THIS CONTRACTOR TO PROVIDE APPROVED, PANEL BOARD TO HOUSE PLC / A-B MICROLOGIX

1. PROVIDE EXPANSION FITTINGS ON PVC CONDUIT

2. LAYERS OF 6ML POLY. SPACE POST

3. TRIP ELECTRIC GATEWAY

4. 16 POINT 24 VDC SINKING/ SOURCING INPUT MODULE

5. 120/240V AC Power Supply (5V @ 4 Amp)

6. RIGHT END CAP TERMINATOR

7. LTE ETHERNET (BY CW&SU) GATEWAY

8. +/-.1828 MIN.

9. Wellfield Development Miltonvale (Kent Building Supplies)

10. LAMACOID LABELS

11. Control Panel Circuit Breakers

12. Surge Suppression

13. Control Panels General

14. SCADA System

15. Track Statements

16. Standard Rules

17. Special Notes

18. CONNECTIONS OF SUITABLE AMPERAGE AND BE MECHANICAL FASTENING TYPE

19. ACCEPTABLE MANUFACTURER OR APPROVED EQUAL: LEVITON

20. ACCEPTABLE MANUFACTURER OR APPROVED EQUAL: ALLEN BRADLEY, SCHNEIDER ELECTRIC, WEIDMULLER, WIELAND

21. A-B MICROLOGIX

22. Din Rail Mounted 120V amperage as indicated on drawings.

23. Where possible equipment in the PLC / SCADA panel shall be assembled by a CSA certified panel shop be manufactured to the latest UL and EEMAC standards.

24. All programmable controller hardware as required to meet the requirements of the Inputs and outputs Indicated on the drawings.

25. L32 Processor and 1769 Series I/O at the main control panel. A partial Bill of materials is indicated on the drawing.

26. Where possible equipment in the PLC / SCADA panel shall be assembled by a CSA certified panel shop be manufactured to the latest UL and EEMAC standards.

27. All programmable controller hardware as required to meet the requirements of the Inputs and outputs Indicated on the drawings.

28. L32 Processor and 1769 Series I/O at the main control panel. A partial Bill of materials is indicated on the drawing.