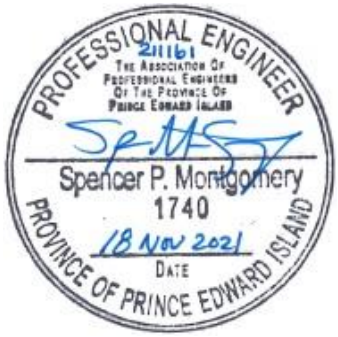
COLES ARCHITECTURE
ENGINEERING
PROJECT MANAGEMENT

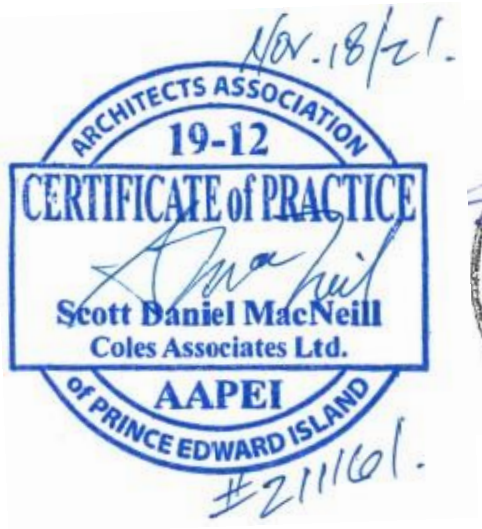
201-85 Fitzroy Street
Charlottetown, PE C1A 1R6
(902) 368-2300
www.colesassociates.com

TENDER

STRATFORD DRY STORAGE BUILDING
TOWN OF STRATFORD

SPECIFICATIONS





Consultant

Coles Associates Ltd.
Charlottetown, PEI
Project #211161

Issued for Tender: November 18, 2021

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END OF SECTION

1 General

1.1 APPENDICES

.1 Geotechnical Investigation Report, as prepared by EastTech Engineering Consultants

END OF SECTION

1 General

1.1 SUMMARY OF WORK

.1 The work of this contract involves all the work relating to the construction of a new storage building located in Stratford, PEI, including all general contract, civil subcontract, and electrical subcontract, work.
  .1 Civil work involves all work outside of new building relating to site work, granular paving, and other miscellaneous site work.
  .2 Electrical subcontract work includes all work inside the existing building as required to make connections to existing services being extended into the new building and the electrical work in the new building.

.2 Summary of work for this Contract:
  .1 Refer to Section 01 10 00 - Summary, for full summary of work.

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

1.2 ENQUIRIES

.1 Direct all inquiries during the tender period to:

Coles Associates Ltd.
P.O. Box 695
85 Fitzroy Street, Suite 201
Charlottetown, PEI
C1A 1R6

Attention: Spencer Montgomery, P.Eng.

Phone: (902) 368-2300
Email: smontgomery@colesassociates.com
CC: lmacgregor@colesassociates.com

.2 All inquiries are to be directed to the Consultant a minimum of 3 days prior to tender closing in order to allow the Consultant to issue an addendum a minimum of 2 days prior to tender close.

1.3 TENDER CALL

.1 The Owner, Town of Stratford, is issuing this tender as follows:
  .1 Sealed tenders will be received at the offices of:
    Town of Stratford
    234 Shakespeare Drive
    Stratford, PE C1B 2V8
    until 2:00 PM, local time, on December 2, 2021.
  .2 Tenders are to be clearly marked with the name of the project and the Bidder's name.
  .3 Tender documents will need to be received at location of tender closing, prior to the time of tender closing noted and on the date specified in the Tender. No submission will be accepted after that time.
  .4 The tender opening will be public.

1.4 TENDERING PROCEDURE

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

.2 Civil and Electrical Subcontractors:

.1 Bidders for the work of the Civil and Electrical subcontracts will submit their tenders directly to the General Contract bidders, for incorporation by the General Contractors into their General Contract tenders.

.3 General Contract bidders shall take particular care to ensure that their tender is submitted on the proper tender form.

.1 Civil and Electrical subcontract bidders will submit their tenders to the General Contract bidder, on, or in a form acceptable to the individual General Contract bidders, to whom bids are submitted.

1.5 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.

1.6 EXAMINATION OF SITE

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

.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.

.4 **Viewing of the site by bidders will take place at 2:00 PM on Thursday, November 25, 2021.** Bidders to gather and wait in the front parking lot of the existing maintenance building at 21 Hollis Avenue, Stratford, PE.

1.7 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 Consultant 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 and any increase or decrease in the cost shall be adjusted as provided under Changes in the Work.

1.8 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 It is the responsibility of the Bidder to ensure any addendum issued is received. Addenda will be posted on the PEI Government Tenders website at: www.princeedwardisland.ca/en/Tenders

.6 Every effort will be made to issue addenda not less than two (2) days prior to the time for the closing of tenders, at the Consultant's discretion.

1.9 PREPARATION AND SUBMISSION OF BIDS

.1 Contractors shall submit their bids on the Tender 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 Tender 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 Tender 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 tender form.
- .3 Tender amount shall be stated both in writing and in figures.
- .4 Signatures shall be without alteration or erasure.
- .5 Receipt of addenda for the project shall be acknowledged by filling in the addendum number and date of issue for each addendum on the appropriate line on the Tender Form. These lines shall be initialed by the person signing the tender after they have been filled in.

.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 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 of one of the members of the partnership or by some authorized representative, 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, 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 The Owner will evaluate Tenders submitted for this project. The criteria to be considered by the Owner in awarding the Contract will include a combination of:

- .1 Bid price;
- .2 Scheduling;
- .3 Compliance;
- .4 Expertise;
- .5 Qualifications of the Contractor and named Subcontractors / Suppliers and
- .6 Any other such conditions as may be determined by the Owner to be in the best interests of the Owner. A decision on the acceptance of a Tender will be made by the Owner based on the results of the Owner's evaluation.

.11 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.

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

.13 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.

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

.15 Submit one (1) only signed copy of Tender Form.

.16 Accompanying the Tender Form shall be:

- .1 One (1) copy of Bid Guarantee, together with Surety's Letter of Consent, as specified.
- .2 One (1) copy of a preliminary schedule demonstrating the full scope of work to be completed within the identified time for the completion of the contract work.
- .3 One (1) copy of a letter from Bidder's insurance provider identifying a list of any claims made against the Bidder within the last five (5) years.

.17 Tender forms and securities must bear original signatures.

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

1.10 BID GUARANTEES

.1 Each tender submitted shall be accompanied by the following Security:

.1 For a General Contract Tender less than One Million Dollars ($1,000,000.00), including Civil and Electrical Subcontract values:
  .1 A Security Deposit in the form of a Certified Cheque or Bank Draft, in an amount not less than ten per cent (10%) of the Bid Amount; OR
  .2 A Bid Bond as identified below.

.2 For a General Contract Tender One Million Dollars ($1,000,000.00) or more, including Civil and Electrical Subcontract values:
  .1 A Bid Bond only issued by a recognized bonding company, in an amount not less than ten per cent (10%) of the Bid Amount.

.3 The Certified Cheque, Bank Draft or Bid Bond shall be made payable to the Owner.

.4 The Certified Cheque, Bank Draft or Bid Bond will guarantee that:
  .1 The Bidder will not withdraw the bid for the period indicated on the Tender Form, following the schedule closing time of the receipt of bids, and
  .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
  .3 The required Certified Cheque, Bank Draft or Bid Bond as Contract Security will be provided to the Owner, and
  .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.

.5 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 within forty-eight (48) hours after the Owner and the successful Contractor have executed the Contract and the duly executed Bonds or Certified Cheque representing the Contract Security have been received and accepted by the Owner from the successful Contractor.

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

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

.8 Security Deposits provided by General Contractors:
  .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
  .2 Bonds of the Government of Canada, unconditionally guaranteed, as to the principal and interest by the Government of Canada if such Bonds are:
    .1 Payable to the Bearer, or
    .2 Accompanied by a duly executed Instrument of Transfer to the Owner in the form prescribed by the Domestic Bonds of Canada Regulations, or
    .3 Negotiated as to principal or as to principal and interest in the name of the Owner, pursuant to the Domestic Bonds of Canada Regulations.
  .3 Security Deposits submitted by Subcontractors to General Contractors, shall be in a form satisfactory to the General Contractor.
  .4 No interest will be paid to either the successful or unsuccessful bidders for any form of Bid Guarantee.

1.11 CONTRACT SECURITY

.1 Upon award of a Contract, the Contractor shall provide the following Contract Security:
  .1 For a General Contract Tender less than One Million Dollars ($1,000,000.00), including Civil and Electrical Subcontract values:
    .1 A Performance Bond and a Labour and Materials Bond, each in the amount of fifty per cent (50%) of the total Contract Amount, or

.2 A Security Deposit in the form of a Certified Cheque or Bank Draft, in an amount not less than ten per cent (10%) of the total Contract Amount.

.2 For a General Contract Tender One Million Dollars ($1,000,000.00) or more, including Civil and Electrical Subcontract values:

.1 A Performance Bond and a Labour and Materials Bond, each in the amount of fifty per cent (50%) of the total Contract Amount.

.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 or Bank Draft drawn on a bank to which the Canadian Bank Act applies, or a Credit Union, payable to the Owner, OR

.2 Bonds of the Government of Canada, unconditionally guaranteed, as to the principle and interest by the Government of Canada if such Bonds are:

.1 Payable to the Bearer, or

.2 Accompanied by a duly executed Instrument of Transfer to the Owner, in the form prescribed by the Domestic Bonds of Canada Regulations, or

.3 Negotiated as to principle or as to principle and interest in the name of the Owner pursuant to the Domestic Bonds of Canada Regulations.

.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 or Bank Draft as Contract Security, the Certified Cheque or Bank Draft will be deposited in a safety deposit box in a bank until the date of Substantial Performance for the Contract as defined under Definition 19 of CCDC2-2008. Subject to the Work being acceptable to the Owner and Consultant it will be returned to the Contractor, without interest. The Certified Cheque or Bank Draft used as contract Security used through the construction period will be replaced with a Certified Cheque or Bank Draft in the amount of 20% of the original Contract Security during the Warranty Period. Subject to Warranty issues being addressed during the 1-year Warranty Period to the satisfaction of the Owner and Consultant it will be returned to the Contractor, without interest.

1.12 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 or facsimile transmitted bids will not be considered.

.3 Any firm which has submitted a tender has the privilege of being present at the bid opening.

1.13 ADJUSTMENT AND WITHDRAWAL OF BIDS

.1 Bids may be withdrawn or adjusted in writing by mail, delivered in person or telegram or facsimile transmission delivered to the party to whom the bids were submitted, provided such withdrawal or adjustment is prior to the time fixed for the opening of the bids. Negligence on the part of the bidder in preparing the bid confers no right for the withdrawal or adjustment of the bid after the expiration of the time within which bids may be submitted.

.1 All withdrawals or adjustments to previously submitted tenders must be faxed to the **Town of Stratford at 902-569-5000** prior to the time fixed for the opening of bids.

.2 Neither the Owner nor Coles Associates Ltd. accepts responsibility for the Contractors inability to submit faxed modifications within the allotted time for such circumstances, including but not limited to power and equipment failures, transmission failures, paper outages, busy fax line, etc.

.3 Adjustments must be signed by the same person who signed the original bid.

1.14 AWARD OF CONTRACT

.1 The Contract, if awarded, will be awarded 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 Tender 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 Tender 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 Where identical bids are received, the low bidder will be selected on the basis of a coin toss by the Owner in the presence of the identical bidders.

1.15 REJECTION OF BIDS

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

.2 The lowest or 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.

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.

1.17 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.

1.18 COVID-19

.1 The Contractor is required to review and adhere to the following COVID-19 publications:

.1 The Workers Compensation Board of Prince Edward Island (WCBPEI) "*COVID-19: Workplace Health and Safety Information*": http://www.wcb.pe.ca/Information/NewsItem/497

.2 The Construction Association of Prince Edward Island (CAPEI) "*Pandemic Planning for the Construction Industry - A Guide*": https://capei.ca/member_access/LiveEditor/images/pdf/INDUSTRY_GUIDE_COVID_19.pdf

.3 The Construction Association of Prince Edward Island (CAPEI) "*COVID-19 Site Questionnaire and Checklist*": https://www.capei.ca/member_access/user_uploads/capei_files/COVID-19%20Questionaire%20and%20Checklist.pdf

.4 The Canadian Construction Association (CCA) "*COVID-19 - Standardized Protocols for all Canadian Construction Sites*": https://www.cca-acc.com/wp-content/uploads/2020/06/CCA-COVID-19-Standardized-Protocols-for-All-Canadian-Construction-Sites-05-26-20.pdf

1.19 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.

1.20 HARMONIZED SALES TAX REQUIREMENTS

.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 exclude HST but will show it as a separate line item.

1.21 ACCEPTABLE PRODUCTS

.1 The Bidder shall carry in his tender the base bid product(s) identified in the specifications as "Acceptable Material", 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 Tender Form, together with the price difference compared to the specified products, when such Appendix is identified under Section 00 41 13 - Bid Form.

1.22 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 Consultant no less than 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.

1.23 ALTERNATIVES

.1 Alternative products, when requested under Section 00 41 13 - Bid Form, must be listed in Appendix "B" provided as part of the Tender 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.

1.24 UNIT PRICES

.1 Unit Prices, when requested under Section 00 41 13 - Bid Form, must be listed in Appendix "C", as part of the Tender 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.

1.25 SEPARATE PRICES

.1 Separate Prices, when requested under Section 00 41 13 - Bid Form, must be listed in Appendix "D", as part of the Tender 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 (excluding HST) and markups.

1.26 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.

1.27 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.

1.28 TIMING REQUIREMENTS

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

.1	Tender Call	**18 November 2021**
.2	Pre-Tender Site Meeting	**25 November 2021 @ 2:00 PM** Meeting Location: Town of Stratford Maintenance Building parking lot at 21 Hollis Avenue, Stratford, PE
.3	Tender Close	**02 December 2021 @ 2:00 PM local time** NOTE: Location of Tender Closing is: Town of Stratford, 234 Shakespeare Drive, Stratford, PE
.4	Tender Award	**09 December 2021**
.5	Construction Start	**13 December 2021**
.6	Substantial Completion	**25 March 2022**
.7	Owner Occupancy	**28 March 2022**

END OF SECTION

1 General

1.1 TENDER

.1 SUBMITTED BY:

_____(Name)

_____(Address)

_____(Contact)

DATE: _____

FOR: PROJECT NAME: Stratford Dry Storage Building

LOCATION: 21 Hollis Avenue, Stratford, PE

TO: PROJECT OWNER: Town of Stratford
LOCATION: 234 Shakespeare Drive, Stratford, PE

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:

PROJECT NAME: Stratford Dry Storage Building

LOCATION: 21 Hollis Avenue, Stratford, PE

INCLUDING all prime cost allowances and Government sales or other taxes in force at this date, EXCLUDING 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.

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.

In the event of this Tender being accepted within thirty (30) days of the time stated for the closing of Tenders, 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 with thirty (30) days of the time stated for the closing of Tenders, 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.

1.2 ACKNOWLEDGEMENT OF RECEIPT OF ADDENDA

.1 Addendum No. _____ Issued: _____ _____ initial

Addendum No. _____ Issued: _____ _____ initial

Addendum No. _____ Issued: _____ _____ initial

Addendum No. _____ Issued: _____ _____ initial

Addendum No. _____ Issued: _____ _____ initial

1.3 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.

1.4 DOCUMENTS ACCOMPANYING BID FORM

.1 As per Section 00 21 13, Par 1.8.16:

One (1) copy of Bid Guarantee, together with Surety's letter of consent. _____intital

One (1) copy of preliminary schedule. _____intital

One (1) copy of letter from Bidders Insurance Provider identifying list of claims made against Bidder within last five (5) years. _____intital

1.5 SUPERINTENDENT

.1 Name of Superintendent _____.

.2 Years of Experience with Contractor _____.

1.6 CONFLICT OF INTEREST

.1 The Contractor warrants that as at the date of this Agreement, no conflict of interest, or any circumstance that might interfere with independent and objective exercise of judgment, exists or is likely to arise in relation to execution of this Agreement or its subject matter. The Contractor shall immediately notify Government, in writing, if any such actual or potential conflict of interest should arise at any time during the Term. In the event Government discovers or is notified by the Contractor of an actual or potential conflict of interest, Government, in its sole discretion, may either:

.1 Allow the Contractor to resolve the actual or potential conflict to the satisfaction of Government;
OR

.2 Terminate the Agreement in accordance with the Termination section of this Agreement.

1.7 CONTRACTOR'S SIGNATURE

.1 Signed sealed and submitted for and on behalf of:

_____
(Company Name)

_____

_____
(Address)

_____ _____
(Authorized Signature) (Witness)

_____ _____
(Name and Title) (Name and Title)

_____
(Date)

1.8 APPENDIX 'A'

.1 Herewith are identified the Subcontractors we propose to use on this project. Carrying Sub-Contractor options next to identified work, is not acceptable and may be cause for rejection of the Tender by the Owner.

Excavation Work: _____

Granular Paving Work: _____

Landscaping _____

Building Concrete Work: _____

Roofing: _____

Wood Stud Framing: _____

Metal Siding: _____

HM Doors and Frames: _____

Electrical: _____

COMPANY: _____

AUTHORIZED SIGNATURE: _____

1.9 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.

SECTION ITEM BASE BID ALTERNATIVE:	TENDER PRICE INCREASED BY:	TENDER PRICE DECREASED BY:
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____
_____	$_____	$_____

COMPANY: _____

AUTHORIZED SIGNATURE: _____

1.10 APPENDIX 'C'

.1 UNIT PRICE COMPONENT

We submit herewith our Unit Prices for the additions or deletions to the work listed below. The Unit Prices listed apply to performing the Units of Work, in accordance with the requirements of the appropriate specifications herein, only during the time scheduled for such work in the project work schedule.

Unit prices shall include all fees, taxes and markups.

UNIT OF WORK	ONE (1) UNIT PRICE ONLY FOR EITHER ADDITION OR DELETION
.1 _____	$ _____
.2 _____	$ _____
.3 _____	$ _____
.4 _____	$ _____

COMPANY: _____

AUTHORIZED SIGNATURE: _____

1.11 APPENDIX 'D'

.1 SEPARATE PRICES

We submit herewith our Separate Price for the addition of the work listed below and amounts are NOT included in our Stipulated Price. In accordance with the requirements of the appropriate specifications herein, only during the time scheduled for such work in the project work schedule.

Separate prices shall include all fees, taxes and markups.

UNIT OF WORK	ONE (1) UNIT PRICE ONLY FOR EITHER ADDITION OR DELETION
.1 Supply and install new 2.4m high chain link fence as indicated on Civil Drawing C1	$ _____
.2 _____	$ _____
.3 _____	$ _____
.4 _____	$ _____

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.

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

1.2 DEFINITIONS

.1 Paragraph 4 Consultant, add the following:
- .1 The Consultant shall be the Owner's Prime Consultant, Coles Associates Ltd., 85 Fitzroy Street, Charlottetown, PEI.

.2 Paragraph 12 Owner, add the following:
- .1 The Owner shall be the Town of Stratford.

.3 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.

.4 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:
1.1.8 The Contractor shall receive up to ten (10) sets of drawings and specifications at no cost from the Owner. Additional sets of drawings will be supplied at cost of reproduction. The above covers the requirements for all trades.

.2 Paragraph 1.1.11 - Add new Paragraph as follows:
1.1.11 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:
1.1.12 Electronic documents are and shall remain the Consultant's property. Copies of electronic documents may be made available for the preparations of shop drawings at the Consultant's sole discretion and for a fee.

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 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 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:

.1 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 CSA Z317.13-07 - Infection Control Guidelines.
  - .13 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.

.2 With the second and all subsequent applications for payment the Contractor shall include a Letter of Clearance from the PEI Workers Compensation Board.

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 Consultants discretion, will be withheld from the claim.

.2 Paragraph 5.3.1 - Add 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 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-Clause .3 as follows:

.1 5.5.1.3 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.

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.

1.14 ARTICLE GC6.2 CHANGE ORDER

.1 Delete Paragraph 6.2.1 and replace with a new paragraph as follows:

.1 When a change in Work is proposed or required, the Consultant will provide the Contractor with a written description of the proposed change in the Work. The Contractor shall promptly present, in forms acceptable to the Consultant, a detailed breakdown of the costs associated with the change, if any; and the adjustment in the Contract Time, if any. The breakdown shall include:
  .1 Actual (not list) costs of material, as well as Subtrade and Supplier costs.
  .2 Labour costs, including fringe benefits and wage levies.
  .3 Equipment rental (excluding hand and small power tool).

.2 Change Orders calling for normal changes or additions to the Work will be priced in detail giving actual material trade prices (not list prices) and actual labour costs and wage levies (including Employment Insurance, Worker's Compensation, Holiday Pay) and actual equipment rental.

.3 Each Change Order will be considered as a whole to complete the work, inclusive of all Sub-Contract and/or General Contract work.

.4 To these prices, the Contractor will add:
  .1 For Work less than $2,500, involving the General Contractor only, the General Contractor adds 20% to his costs.
  .2 For Work over $2,500, involving the General Contractor only, the General Contractor adds 15% to his costs.
  .3 For Work less than $2,500, involving a Subcontractor only, the Subcontractor adds 20% to his costs, submits this price to the General Contractor who adds 10%.
  .4 For Work over $2,500, involving a Subcontractor only, the Subcontractor adds 15% to his costs, submits this price to the General Contractor who adds 5%.
  .5 For Work less than $2,500, involving the General Contractor and a Subcontractor, the Subcontractor adds 20% to his costs, submits his price to the General Contractor who adds 10%; to this amount the General Contractor adds the cost of his own Work plus 20% of the cost of his own Work only. The General Contractor does NOT add a further 10% to the cost of his own Work.
  .6 For Work over $2,500, involving the General Contractor and a Subcontractor, the Subcontractor adds 15% to his cost, submits this price to the General Contractor who adds 5%; to this amount the General Contractor adds the cost of his own Work plus 15% of the cost of his own Work only. The General Contractor does NOT add a further 5% to the cost of his own Work.
  .7 Deletions to Contract: A mark-up by either Sub-Contractor or General Contractor shall not be charged or credited on credit Change Orders.
  .8 Supervision related to Change Orders shall be considered as included in the allowable mark-up, and shall not be added as additional charges for a Change order.

.5 Note: Costs related to management, supervision, estimating, scheduling, bonding, insurance, as built drawings, copying, courier, safety, cleaning, site overhead, site vehicle, hand and small power tools etc. are covered by the mark up indicated in Paragraph 6.2.1.4 and shall not be included on Change Orders.

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 The Owner or the Consultant, without invalidating the contract, may make changes by altering, adding to, or deducting from the work, the contract sum being adjusted accordingly. All such work shall be executed under the conditions of the Contract.

.3 Where work is required to proceed immediately, work may proceed under a Change Directive. The Contractor will be instructed to proceed on a time and materials basis and maintain accurate accounting records for the cost of the change.

.4 Change Directives calling for changes to the Work will be priced in detail giving actual material trade prices (not list prices) and actual labour costs and wage levies (including Employment Insurance, Worker's Compensation, Holiday Pay) and actual equipment rental.

.5 Each Change Directive will be considered as a whole to complete the work, inclusive of all Sub-Contract and/or General Contract work.

.6 To these prices, the Contractor will add:
- .1 For Work less than $2,500, involving the General Contractor only, the General Contractor adds 20% to his costs.
- .2 For Work over $2,500, involving the General Contractor only, the General Contractor adds 15% to his costs.
- .3 For Work less than $2,500, involving a Subcontractor only, the Subcontractor adds 20% to his costs, submits this price to the General Contractor who adds 10%.
- .4 For Work over $2,500, involving a Subcontractor only, the Subcontractor adds 15% to his costs, submits this price to the General Contractor who adds 5%.
- .5 For Work less than $2,500, involving the General Contractor and a Subcontractor, the Subcontractor adds 20% to his costs, submits his price to the General Contractor who adds 10%; to this amount the General Contractor adds the cost of his own Work plus 20% of the cost of his own Work only. The General Contractor does NOT add a further 10% to the cost of his own Work.
- .6 For Work over $2,500, involving the General Contractor and a Subcontractor, the Subcontractor adds 15% to his cost, submits this price to the General Contractor who adds 5%; to this amount the General Contractor adds the cost of his own Work plus 15% of the cost of his own Work only. The General Contractor does NOT add a further 5% to the cost of his own Work.
- .7 Deletions to Contract: A mark-up by either Sub-Contractor or General Contractor shall not be charged or credited on credit Change Orders
- .8 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 11.1.1.4: Delete and replace with following:
Builders Risk, in the names of the Contractor, the Owner, the Sub-Contractors and the Consultant. As applicable. The policy shall commence from the date of the commencement of Work until the earliest of:
- .1 10 calendar days after the date of substantial Performance of the Work;
- .2 On the commencement of use or occupancy of any part or section of the Work unless the use or occupancy is for construction purposes, or for the installation, testing and commissioning of equipment forming a part of the Work;
- .3 When left unattended for more than 30 consecutive calendar days or when construction activity has ceased for more than 30 consecutive calendar days.

.4 The Contractor shall provide evidence of Course of Construction Property Insurance, that is all risk, replacement cost blanket limit, with an agreed amount endorsement and includes boiler and machinery coverage as noted in 11.1.1.5 and 11.1.1.6. Said coverage will include completed operations coverage for 24 months after completion to the full value of the building or structure as required by the Owner. Coverage for "X,C, U exposures shall be included along with loss of use.

.2 Paragraph 11.1.2:

.1 Delete "if required" on the second line. (A certified true copy as described, MUST be promptly provided within 3 days of contract award). Add the following at the end of the sentence. "All insurance is primary and will not require the sharing of any loss with any Owner Insurance Program."

.3 Add new Paragraph 11.1.9 Indemnity/Hold Harmless:

.1 The Contractor shall be liable for all injuries to persons and for damage to property caused by his operations, and those of his sub-contractors, and his and their employees, engaged on all operations in connection with the contract both on and off the site, and he shall indemnify and save harmless the Owner from all suits, claims, expenses, costs, demands, losses and damages to which the Owner may be put to reason of injury including death, to persons, and damages to property of the Owner and others, resulting from negligence, carelessness and any other cause whatsoever in the performance of the work.

.2 The Contractor shall, until the date of issue of the final Certificate of Approval of the work by the Consultant, indemnify and save harmless the Owner, and protect his own interests against:

.1 Theft, burglary or robbery of, and loss or damage to, all materials and equipment brought to the site for use in the work, whether or not such material and equipment are incorporated in the work at the time that any such theft, burglary, robbery, loss or damage occurs.

.2 Theft or burglary of, and loss or damage to, any of his own plant and equipment being used on the project and/or stored on the site.

.4 Add new Paragraph 11.1.10:

.1 The Contractor shall, without limiting its obligations or liabilities herein and at its own expense, provide and maintain the following insurances with Insurers and in forms and amounts acceptable to Government, Commercial General Liability Insurance in an amount not less than five million dollars ($5,000,000) inclusive per occurrence against bodily injury including death, and property damages. The Owner is to be added as an insured under this policy. Such insurance shall include but not limited to:

.1 Products and Completed Operations Liability;

.2 Owners and Contractors Protective Liability;

.3 Cross Blanket Written Contractual Liability;

.4 Personal Injury Liability;

.5 Cross Liability;

.6 Broad Form Property Damage;

.7 Employees as Additional Insured's;

.8 Operations and Premises Liability.

.9 The Contractor shall not commence work under this contract until he has obtained all of the liability insurance specified and such insurance has been approved by the Owner, nor shall the Contractor allow any subcontractor to commence work on his sub-contract until all similar insurance required of the sub-contractors has been obtained. Approval of the insurance by the Owner shall not relieve or decrease the liability of the Contractor hereunder nor shall such approval imply the contractor has fulfilled all the terms and conditions of this Contract. Upon expiration of any policies during the period of this Contract, new Certificates of Insurance showing renewal shall be forwarded. In the event, that the Contractor carried a blanket-type policy, an endorsement by the insurance company is required confirming coverage of this specified project and indicating the extent of coverage.

.5 Add new Paragraph 11.1.11: In all insurance policies required under this agreement:

.1 There shall be an endorsement stating that the insurer will provide 30 days' notice to the Province's Risk Manager (or the acting or assistant) of cancellation or material change in coverage;

.2 The insurer shall acknowledge that the policy is primary and any other insurance policies that may be in effect or any other sources of recovery the including the Government of Prince Edward Island's Self Insurance and Risk Management Fund shall not contribute in any way to any judgments, awards, payments, or costs or expenses of any kind whatsoever made as a result of actual or alleged claims. The Ultimate Recipient shall provide the Province with current certificates of insurance, in a form and content reasonably acceptable to the Province, evidencing the required insurance policies hereunder within ten (10) days of the Effective Date and on each renewal of the insurance policies thereafter. Umbrella insurance may be used to achieve the required insured limits above.

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 works 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.

1.3 COORDINATION

.1 All Trades on site are responsible to co-operate and co-ordinate with each other.
.2 Coordination prior to installation of all building components is mandatory.
.3 Where work must be modified or reinstalled to be properly coordinated, the cost to do so will be paid by the Trades involved. The Owner will not pay for uncoordinated work nor will the Owner pay to resolve uncoordinated work.
.4 If resolution cannot be achieved among the involved Trades, the Construction Manager and Consultant will assess Trade involvement and assign costs accordingly.

1.4 DAMAGE

.1 Where damage is done to work in progress or existing areas of the building and is unclaimed by a Trade, the cost to repair the damage will be assessed by the Construction Manager and Consultant and assigned on a pro-rated tender cost basis to all Trades on site at the time the damage occurred.
.2 The Owner will not participate in paying for such damage.

1.5 DEDUCTIONS FOR UNCORRECTED WORK

.1 If, in the opinion of the Consultant, it is not expedient to correct defective work or work not done in accordance with the Contract documents, the Owner may deduct from the Contract price the difference in value between the work as done and that called for by the Contract, the amount of which shall be determined in the final instance by the Consultant.

1.6 CORRECTION AFTER COMPLETION

.1 Subject to any special provisions in the Contract documents, the Contractor shall remedy any defects due to faulty materials or workmanship appearing within a period of one (1) year from the date of substantial completion of the work and shall pay for any damage to other work resulting there from which appears within such period and neither the final certificate nor payment there under shall relieve the Contractor from responsibility hereunder. The Owner shall give notice of observed defects promptly. Questions arising under this Article may be decided as provided in Article 43.

1.7 EMERGENCIES

.1 The Consultant has authority in an emergency to stop the progress of the work whenever in his or her opinion, such stoppage may be necessary to ensure the safety of life, or of the structure, or neighbouring property. This includes authority to make such changes and to order, access and award the cost of such work extra to the Contract or otherwise as may in his or her opinion be necessary.

1.8 WORK SEQUENCE

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

.2 Coordinate Progress Schedule referred to in Section 01 32 16 - Construction Progress Schedule and coordinate with Owner Occupancy during construction.

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

.4 Maintain fire access/control.

1.9 EXECUTION

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

1.10 MITIGATION OF IMPACT ON EXISTING BUILDING

.1 This Contractor will recognize that the existing facility must remain fully functional with minimal disruption during the course of the Work, and that the existing facility, its operation, and its occupants may be very sensitive to dirt, dust, air-borne particulate, smoke, fumes, etc. generated as a result 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 building is kept free from any contamination that may result from any of the Work.

.3 The life safety and security systems in the existing building are required to remain functional during construction. This Contractor is responsible to ensure that such systems are not inadvertently activated or deactivated during construction.

.4 The Contractor is financially responsible for all measures required to minimize the potential for any contamination that could occur. Such measures include, but are not limited to, temporarily masking sensors in non-occupied areas, providing fans, working off hours (nights), performing work outside, sealing off localized work areas, etc. All such measures to be confirmed and approved by the Consultant prior to undertaking.

.5 The scheduling of all Work, which has the potential to cause contamination to the existing building, is to be approved by the Owner.

.6 This Contractor is responsible to immediately mitigate any discomfort, disruption, damage or condition, to the existing occupants, operations, space or building systems as deemed necessary by the Consultant.

1.11 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.

.5 All drawings and specifications shall be interpreted in conformity with the agreement.

1.12 PROTECTION OF WORK AND PROPERTY

.1 The Contractor shall maintain continuously adequate protection of all their work from damage and shall take reasonable precautions to protect the Owner's property from all injury arising in connection with this Contract. The Contractor shall make good any damage or injury to their work and shall make good any damage or injury to the property of the Owner resulting from the lack of reasonable protective precautions. The Contractor shall not be responsible, however, for any damage or injury to their work and to the property of the Owner which may be directly due to errors in the Contract documents or caused by the Owner, their agents, or employees, or from any work or risk which the Owner has agreed to insure, provided the Contractor has taken reasonable protective precautions. The Contractor shall adequately protect adjacent property as required by law and the Contract documents.

1.13 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.

1.14 CODES AND REGULATIONS

.1 Perform work in accordance with National Building Code of Canada (NBC) 2015 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 NBC (2015) 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 and/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.

1.15 WORK SCHEDULE AND PROGRESS REPORTS

.1 The Contractor will prepare and maintain a consolidated schedule in weekly increments showing scheduled work versus actual work. The schedule shall indicate the contract commencement and completion date for the total project.
.2 The Contractor is to develop a detailed schedule identifying specific components of the civil and electrical trades. A single line items for each is not acceptable.
.3 Provide updated schedule information from time to time as the progress of the work or Consultant may require.
.4 The Contractor shall furnish monthly progress reports from the date of commencement. These reports shall show the percentage of completion of the various divisions of work and contain comments on the general progress of the project.

1.16 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 The work related to modifying the site roadways must be carried out so that one half of the roadway is open to vehicle traffic at all times.

1.17 PROJECT MEETINGS

.1 Hold weekly project meetings at the site, in the Contractor's site office and at a time approved by Consultant. In addition hold any additional meetings as the need arises or as directed by the Consultant.
.2 Notify all parties concerned of such meetings.
.3 The Contractor will record minutes of meetings and distribute to all parties within three (3) days of meeting.
.4 Failure of the Contractor to accurately record minutes or distribute the minutes in a timely manner will result in the Consultant taking over the duties invoicing the owner and deducting an equal amount from the progress claims as compensation.

1.18 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.
.3 The Construction Manager 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 Construction Manager or Consultant does not reject any work shall not remove the responsibility for completing all work as specified from the Contractor.

1.19 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.

1.20 CONCEALMENT

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

1.21 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.

1.22 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 electrical services to service lines.
.2 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.

1.23 BLOCKING AND BACKING

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

1.24 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 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.

1.25 ACCESS AND SECURITY

.1 Access and security on the entire job site will be the responsibility of the Contractor.

1.26 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, consistent with the Contract.

1.27 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 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.

1.2 APPLICATIONS FOR PROGRESS PAYMENT

.1 Make applications for payment on account as provided in Agreement as Work progresses.
.2 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.
.3 Submit to Consultant, at least 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.

1.3 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.
.6 The schedule of values is to indicate separate line items each for electrical commissioning and electrical operations & maintenance manuals.

1.4 PROGRESS PAYMENT

.1 Consultant will issue to Owner, no later than 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.

1.5 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 10 days after receipt of list and application, Consultant will review Work to verify validity of application, and no later than 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.

1.6 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, 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.

1.7 FINAL PAYMENT

.1 Submit an application for final payment when Work is completed.

.2 Consultant will, no later than 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 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 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.
.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 all soil material types at source, including collection of sample material by testing firm, to verify compliance with material specifications.
.2 Follow up testing of all soil material types delivered to site.
.3 Monitoring placement and verifying compaction densities.
.4 Monitoring of upgrading work.
.5 Verifying the new compaction densities.
.6 Type 1 Fill - Gravel:
  .1 Testing of material at source, including collection of sample material by testing firm, to verify compliance with material specifications.
  .2 Follow up testing of material delivered to site.
  .3 Monitoring placement and verifying compaction densities.
.7 Type 5 Fill - Sandstone:
  .1 Testing of material at source, whether imported or excavated site till, including collection of sample material by testing firm, to verify compliance with material specifications.
  .2 Follow up testing of material delivered to site.
  .3 Monitoring placement and verifying compaction densities.
.8 Concrete:
  .1 Slump tests.
  .2 Compressive strength tests.
.9 Testing work may occur under various Sections of the Specification.

1.4 FINAL REPORT

.1 Submit to the Owner at completion of job, two (2) bound hard copies and one (1) electronic copy of inspection report. This report to include:
  .1 All copies of test results, indexed to correspond with testing requirements of this Section.

.2 Written report from the testing firm carrying out the work of this Contract stating that the work as itemized under Par. 4 of this Section has been performed in strict accordance with the requirements of the Contract documents.

.3 The report will be signed and sealed by a Professional Engineer registered to practice in the Province of Prince Edward Island and practicing in the field of materials testing.

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.

.2 The Contractor will be responsible for all costs incurred for failure to complete the project within the project schedule, plus 20 working days.

.3 Costs for Insurance and bonding extensions, Consultant fees for extended services and Construction Management services and expenses for extended services will all be totaled and charged against the Contractors. Costs will be deducted from Progress Claims.

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 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.

1.6 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.

1.7 CHARACTER AND EMPLOYMENT OF WORKERS

.1 The Contractor shall employ only orderly, competent and skillful workers to do the work and shall give preference to available residents in the area of the Contract. 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.

1.8 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 GENERAL

.1 All submittals are to be delivered within 30 days of award of Contract.

.2 Make specified submittals to the Consultant at commencement of Contract, before beginning work on site (and no later than 10 days after award). Include:

- .1 Contract Security
- .2 Proof of Insurance
- .3 Workers' Compensation clearance letter
- .4 Cost Breakdown
- .5 Permits as required
- .6 Construction schedule for Trade Package activity
- .7 Corporate Safety Plan
- .8 Site specific safety plan
- .9 Shop drawing schedule

.3 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

.4 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 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.

.11 Keep one reviewed copy of each submission on site.

1.3 SUBMITTAL SCHEDULES:

.1 Within 10 days following award of contract, prepare and submit a summary of all submittals required by the Trade Package.

.2 Submittal schedule shall be formatted as follows:

SECTION NUMBER	ITEM / EQUIP	SHOP DWG DELIVERY DATE	ORDER DATE	ITEM DELIVERY DATE

.3 The initial submission shall include completion of the first 3 columns of the above table example. Once approved shop drawings are received by the Contractor, the balance of the summary shall be updated and submitted accordingly.

1.4 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 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 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.

.6 Submit digital copy of all shop drawings, product data sheets, reports, MSDS sheets and other traditional paper submissions.

.7 Delete information not applicable to project.

1.5 SAMPLES

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

END OF SECTION

1 General

1.1 REFERENCES

.1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
  .1 Material Safety Data Sheets (MSDS).
.3 Province of Prince Edward Island
  .1 Occupational Health and Safety Act, R.S.P.E.I. 1988.
.4 CSA C22.1-2021 - Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.
.5 CSA C22.3 No. 7-94 (R2000) - Underground Systems.
.6 COSH, Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.

1.2 SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
.2 Submit site-specific Health and Safety Plan: Within 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 hazard(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:
      .1 General Contractor and all Subcontractors.
      .2 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 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 01 33 00 - Submittal Procedures.
.6 Consultant will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 5 days after receipt of plan. Revise plan as appropriate and resubmit plan to Consultant within 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.

1.3 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.

1.4 PERMITS

.1 Obtain permits, licenses and compliance certificates, at appropriate times and frequency as stipulated by authorities having jurisdiction.

.2 Post all permits on site. Submit copies to Consultant.

1.5 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.

1.6 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, all workers new to the site 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. Maintain records of orientation on site.

.3 Conduct site specific occupational health and safety meetings for the duration of the 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.

1.7 COMPLIANCE REQUIREMENTS

.1 Observe and enforce construction safety measures required by National Building Code, latest edition, National Fire Code, Provincial Building Code Act, Worker's Compensation Act and Municipal Statutes and Authorities.

.2 Comply with Canada Labour Code and Canada Occupational Health and Safety Regulations.
.3 Provide Consultant with Material Safety Data Sheets (MSDS).
.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.

1.8 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.

1.9 SMOKING, ALCOHOL & RESTRICTED SUBSTANCES

.1 Worksites are inherently dangerous, including travelling to and from the site.
.2 Alcohol, medical and recreational cannabis are restricted substances governed by Federal and Provincial laws as are other forms of illegal drugs.
.3 The smoking of or use of tobacco products, including e-cigarettes, the use of alcohol and restricted substances including cannabis in any form in the building or on the work site is strictly prohibited.
.4 Where workers have a prescription for medical cannabis, or other prescription drugs that may cause drowsiness, they are to advise their supervisor and discuss with their supervisor safe and appropriate task(s) while under the influence of these prescriptions on the worksite.
.5 Workers who violate this requirement will be removed from the worksite.

1.10 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.

1.11 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.

1.12 LOCKOUTS

.1 Perform lockouts in compliance with:

.1 Canadian Electrical Code

.2 Federal and Provincial Occupational Health and Safety Acts and Regulations as specified in Section 01 35 29 - Health, Safety, and Emergency Response Procedures.

.3 Regulations and code of practice as applicable to mechanical equipment or other machinery being de-energized.

.4 Procedures specified herein.

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

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

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

.5 Use industry standard lockout tags.

.6 Provide appropriate safety grounding and guards as required.

.7 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.

.8 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 by Contractors and / or Owners safety plan.

.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.

.9 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.

.10 Procedures shall meet the requirements of Provincial and Federal Codes and Regulations.

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

1.13 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 29 - Health, Safety, and Emergency Response Procedures.

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 PLANT PROTECTION

.1 Protect trees and plants on site and adjacent properties.
.2 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 2 m.
.3 Protect roots of designated 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.
.4 Minimize stripping of topsoil and vegetation.
.5 Restrict tree removal to areas indicated or designated by Consultant.

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.

1.7 SMOKING RESTRICTIONS

.1 Smoking is not permitted on any Town Property, Parkland, Playground, Sports Field, or any Spectator Seating Area, per Bylaw #42.

1.8 ENVIRONMENTAL PERMIT APPROVAL

.1 Comply with requirements contained in the Transportation and Public Works Environmental Management Division environmental approval permit for the project.

END OF SECTION

1 General

1.1 INSTALLATION AND REMOVAL

.1 Contractor to provide temporary utilities identified in this Section, in order to execute work expeditiously.

.2 Remove from site all such work after use.

1.2 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.

1.3 WATER SUPPLY

.1 Water supply is not available on site and is to be provided for construction usage at no cost. Make arrangements for the use and transportation of such services to work area as required during construction.

1.4 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. Facilities within the existing building are not available to the Contractor's work force.

.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 temporary construction fence, provided under the work of this Contract.

1.5 POWER

.1 Power supply is available and will be provided for construction usage at no cost.

- .1 Make arrangements for the use of such services through the Consultant.
- .2 Consultant will designate and approve each location of existing power source to which connections can be made to obtain temporary power service.
- .3 Connect to existing power supply in accordance with Canadian Electrical Code.

.2 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 and to lockout requirements specified in Section 01 35 29 - Health, Safety and Emergency Response Procedures.

.3 Electrical power and lighting systems installed under this Contract can be used for construction requirements provided that guarantees are not affected thereby. Make good damage.

1.6 TEMPORARY POWER AND LIGHT

.1 Contractor will pay for temporary power during construction for temporary lighting and operating of power tools, to a maximum supply of 230 volts 100 amps.

.2 Arrange for connection with appropriate utility company. Pay all costs for installation, maintenance and removal.

.3 Temporary power for electric cranes and other equipment requiring in excess of above is responsibility of Contractor.

.4 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 160 lx.

.5 Connect to existing power supply in accordance with Canadian Electrical Code and provide meters and switching.

.6 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior approval of Consultant provided that guarantees are not affected. Make good damage to electrical system caused by use under this Contract. Replace lamps which have been used for more than 3 months.

1.7 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 REFERENCES

.1 Manual of Uniform Traffic Control Devices for Streets and Highways - 2014.

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 Town of Stratford all precautions to be taken and safety measures to be put in place and obtain acceptance before proceeding with work.

.3 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.

.4 Do not close any lanes of road without approval of Provincial Traffic Authority and Town of Stratford. Before re-routing traffic erect suitable signs and devices in accordance with instructions contained in Part D of UTCD.

.5 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.

.6 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.

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.

.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 10 minutes.

.9 Flag person to have two-way radio communications at all times.

END OF SECTION

1 General

1.1 INSPECTION AND DECLARATION

.1 Contractor's Inspection:
- .1 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:
- .1 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 Systems have been commissioned.
- .5 Operation of systems have been demonstrated to Owner's personnel.
- .6 Work is complete and ready for Final Inspection.

.4 Final Inspection:
- .1 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:
- .1 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:
- .1 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:
- .1 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 CCDC 2. 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:
- .1 After issuance of Certificate of Substantial Performance of Work, submit an application of payment of holdback amount in accordance with CCDC2.

1.2 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.

.3 During the 60-day period, Contractor shall continue to complete the work.

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

1.3 ESTABLISHMENT OF WARRANTIES

.1 Warranties shall commence at date of Substantial Performance of the Work.

1.4 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 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 Owner will before the date of this Certificate ensure 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.

1.5 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.

1.6 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.

1.7 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 _____

.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.

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

1.8 DEFICIENCIES

.1 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 _____

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 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 Ceiling and floor elevations;
  - .5 Electrical service installation locations; all to be dimensioned and referenced to building load bearing walls;
  - .6 All design elevations, sections, floor plans and details dimensioned and marked-up to consistently report finished installation conditions;
  - .7 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;
  - .8 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.

1.3 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.

1.4 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 draft 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.

.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, determined solely by the Consultant. 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 seasonal 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 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.

1.5 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.
.7 Turnover to Facility Manager and obtain signature. Include receipt with Maintenance Manual.

1.6 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, two (2) final hard copies and one (1) electronic final copy 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.

1.7 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.

1.8 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.

1.9 RECORDING ACTUAL SITE CONDITIONS

.1 Record information on 2 sets of white print, opaque drawings, and in copy of Project Manual.

.2 Provide felt tip marking pens, maintaining separate colors for each major system, for recording information.

.3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.

.4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
.1 Measured depths of elements of foundation in relation to finish first floor datum.
.2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
.3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
.4 Field changes of dimension and detail.
.5 Changes made by change orders.
.6 Details not on original Contract Drawings.
.7 References to related shop drawings and modifications.

.5 Specifications: legibly mark each item to record actual construction, including:
.1 Manufacturer, trade name, and catalog number of each product actually installed, particularly optional items and substitute items.
.2 Changes made by Addenda and change orders.

.6 Other Documents: maintain manufacturer's certifications, required by individual specifications sections.

1.10 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.

1.11 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

APPENDIX A
Geotechnical Investigation Report

EASTTECH
ENGINEERING CONSULTANTS
Geotechnical ▪ Environmental ▪ Materials Testing

GEOTECHNICAL INVESTIGATON REPORT

Town of Stratford Maintenance Building
21 Hollis Avenue

Stratford
Queens County
Prince Edward Island
PID# 289462

Project # 210613
June 22, 2020

Prepared for:
Town of Stratford
c/o Mr. Joe Driscoll
234 Shakespeare Drive
Stratford, Prince Edward Island
C1B 2V8

Prepared By:
EastTech Engineering Consultants Inc.
1509 Bethel Road – PO Box 24010
Stratford, Prince Edward Island
C1B 2R5

Introduction

EastTech Engineering Consultants Inc. was retained by the Town of Stratford to complete a geotechnical investigation at the proposed location of a new maintenance building that is to be constructed at 21 Hollis Avenue in Stratford, Queens County, Prince Edward Island. The proposed undertaking will involve the construction of a 225 m^2 (2400 ft^2) "pole barn" type structure that will consist of a steel frame superstructure supported by cast in place concrete piers or cast in place concrete belled piers. A site location plan and conceptual site plan have been provided as Figure 1 which has been in appended to this report.

The purpose of this geotechnical investigation was to collect detailed information pertaining to the soils, bedrock, and groundwater conditions on the site and to provide recommendations for the construction of the foundation of the building and general earthworks associated with the proposed undertaking.

Scope of Work

In agreement with the Town of Stratford, the following scope of work has been completed as a part of this geotechnical investigation:

- ✓ A review of the underground services was conducted prior to this investigation to identify any buried infrastructure that may present on the site and in the vicinity of the dig area.
- ✓ Three (3) geotechnical test pits were put down on the site to collect geotechnical data for this investigation.
- ✓ A geotechnical report outlining the findings of this investigation, detailed test pit logs, and recommendations pertaining to the building foundation design & construction, roadway and parking lot design & construction, and general project earthworks has been included herein.

Site Description

The site is located to the north of Hollis Avenue in Stratford, Queens County, Prince Edward Island on a single parcel of land identified as PID# 289462. An existing maintenance building is present on the site which consists of a single storey structure supported by a concrete slab on grade foundation. The proposed location of the new maintenance building has been recently cleared of trees. The site gently slopes towards the north-northwest at a gradient of 2-4%. The general topography of the area surrounding the site trends north-northwest as shown in Figure 2.

Site Geology

The bedrock formations that are predominantly found in the province of Prince Edward Island consist of the characteristically red colored flat lying sedimentary deposits commonly referred to as the PEI Redbeds. The PEI Redbeds are a part of the Pictou Group of deposits that make up a section of the Maritime Plane and lie within the Appalachian Mountain System. The PEI Redbeds can be broken down into four cyclic sequences generally comprised of conglomerate, sandstone, and siltstone, from the Late Pennsylvanian to Early Permian ages (*i.e.*, formed 286 million years ago to 320 million years ago) which fine upward (i.e., conglomerate at the base and siltstone at the top), with the oldest deposits found along the south shore of the island and the youngest found along the north shore. The PEI Redbeds generally dip 1 – 3 degrees towards the northeast.

Bedrock in Prince Edward Island is generally covered by a thin drift of Ground Morain or Basal Till with occurrences of Residual, Ablation Till, and minor Glaciofluvial and Marine Deposits. Basal Till, which

covers approximately 75% of the province are often local in origin and can be generally described as reddish brown, strongly acid, and compact to dense soils further defined by their Clay and Silt content.

An initial review of available soils information for the area revealed that the natural surficial soils identified on the site consist of the Tignish type soils, which are described as medium textured, well-draining, glacial moraine or residual deposit formed on gently to moderately undulating to rolling relief (Soils of Prince Edward Island – Agriculture Canada [1988]).

Geotechnical Site Work

On Wednesday June 16th, 2021 EastTech Engineering staff were on-site to complete the site work for this geotechnical investigation. Three (3) test pits were put down on the site to provide a representative indication of the geological conditions in the area of the proposed development and to identify suitable geological formations to support the buildings foundations. The test pits were put down to a maximum depth of 1.83 m using a rubber tire backhoe provided by Brute Force Bulldozing under the direction of Dave Richard, CET, of EastTech Engineering. A test pit location plan has been included with this report as Figure 3.

Summary Site Findings

Soils encountered during this geotechnical investigation can be generally described as Rootmat & Topsoil noted as Loose Dark Brown to Black to Orange Brown Silty Sand with Traces of Fine Roots, & Organics overlying a deposit of Glacial Till generally described as Compact Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles.

Weathered Sandstone Bedrock was encountered in test pits TP2 at a depth of 1.59 m.

Groundwater was not observed in any of the test pits put down on the site, which were extended to a maximum depth of 1.83 m.

A more detailed account of the sub-surface conditions that were encountered in this investigation can be found in the test pit logs that have been appended to this report.

Building Construction Site Preparation

Site preparation should consist of the removal of all Topsoil & Root Mat materials in the building area. Excavations should extend into the deposit of Glacial Till that was identified at depths ranging from 0.48 m – 0.66 m in the test pits put down in the vicinity of the proposed building location. All excavation walls should be cut back and sloped as per applicable PEI Occupational Health & Safety Regulations. The Glacial Till bearing surface should be proof rolled under the supervision of the geotechnical consultant. Any soft or deformable areas should be removed and replaced with compacted structural fill at the discretion of the geotechnical consultant.

At the current time, the buildings grades are not known, however it is anticipated that the building area will need to be built up above existing grades. As such, a building pad will be required to partially support the concrete piers or belled piers and to build the subgrade to the desired floor grade elevation. The Building Pad should be constructed of structural fill meeting the Prince Edward Island Department of Transportation Infrastructure & Energy (PEIDTIE) specifications for Select Borrow. Structural fill should be placed in lifts not exceeding 300 mm in thickness and should be compacted to 100% of its Standard Proctor Dry Density at optimum moisture content. The outer edges of the top of the building pad should extend beyond the outer limits of the concrete piers by a minimum of 1000 mm. The toe of the building pad should extend outward from the building pads outer edges at a minimum slope of 1H:1V. All building pad

construction should be completed under the supervision of a geotechnical consultant to ensure that the required degree of compaction is achieved during the placement of the structural fill.

Excavated Glacial Till from site earthworks may be used as building pad construction material for any cut fill activities under the direct supervision of the geotechnical consultant. If excavated Glacial Till is to be used for building pad construction it must be maintained at a suitable moisture content to allow for the re-compaction of the material. Efforts should be made to stockpile any Glacial Till that is intended for re-use as to prevent excessive moisture from infiltrating the material.

Based on discussions with the owner, it is anticipated that the floor of the maintenance building will be dressed with a granular surface course. Material meeting the PEIDTIE specifications for Class A Gravel would be acceptable for use as a granular surface coarse material. Granular surface coarse materials should be compacted to 100% of its Standard Proctor Dry Density at optimum moisture content. A minimum thickness of 150 mm is recommended for floor surface course materials.

Foundation Design Considerations

For limit state design (NBCC 2015), cast in place concrete piers or belled piers placed on the undisturbed Glacial Till deposit or supported by building pad materials constructed with structural fill as described above may be designed with a factored resistance of 300 kPa at the Ultimate Limit State (ULS). A maximum recommended bearing resistance of 150 kPa is recommended for concrete piers or concrete bell piers for the above noted bearing soils for Serviceability Limit State (SLS) design. The allowable bearing capacities provided will limit maximum total and differential settlements from exceeding 25 mm and 15 mm, respectively.

The bases of all concrete piers should have a minimum of 1800 mm of soil cover for frost protection, and should be designed to resist all frost adfreeze forces. An adfreeze stress of 65 kPa can be used for concrete pier design purposes for exposed concrete surfaces.

Groundwater was not encountered in any of the test pits and is not anticipated to have any influence of the foundation bearing soils for the proposed building.

Geotechnical parameters have been provided for the Glacial Till material and Select Borrow structural fill for foundation design purposes in the table below:

Material	Select Borrow	Glacial Till
Angle of Internal Friction ϕ	32^o	30^o
Undrained Shear Strength C_u (kPa)	0	0
Field Saturated / Effective Unit Weight γ_{field} (kN/m^3)	18.0	18.7
Interface Friction Angle for Precast Concrete $\delta_{concrete}$	14^o	14^o

Site Seismic Classification

The proposed residential buildings may be designed using a Site Seismic Classification of Class "D" as per the National Building Code of Canada building requirements (NBCC 2015).

Exterior Concrete Structures

Any exterior concrete structures such as exterior slabs that are to be installed should be supported by a minimum 300 mm granular sub-base and a 150 mm granular base constructed of material meeting the PEIDTIE specifications for Select Borrow and Class A Gravel, respectively. All insitu subgrade soils should be inspected by the geotechnical consultant prior to the placement of sub-base and base granular materials. Any suspect areas in the insitu subgrade should be remediated at the discretion of the geotechnical consultant. Exterior concrete structures should be graded to allow for positive drainage as to avoid collection and retention of surface water.

Winter Construction Activities

If construction activities are to be conducted during winter months or during periods when sub-zero temperatures are encountered, additional efforts must be made to ensure that all insitu bearing soils and Structural Fill Materials (*i.e.*, Building Pad materials, granular base, granular sub-base, *etc.*) are not subject to freezing conditions. The installation of winter shelters, heating sources, or other measures may be required to prevent bearing soils and structural fill materials from freezing. Efforts should also be made to ensure that structural fill materials are not subject to freezing conditions prior to their delivery to the site. Additional inspection and oversight by the geotechnical consultant is recommended during all winter construction activities associated with site earthworks, foundation installation, and parking lot / driveway construction.

Limitations

The recommendations provided in this report are based on the observations made during the field investigation, the site conditions at the time of the investigation, and our understanding of the projects geotechnical requirements as documented herein. Further excavation or investigation may reveal unforeseen issues that may influence our recommendations. Furthermore, weather and seasonal conditions may also alter the geotechnical conditions on the site. As such, EastTech Engineering Consultants Inc. should be notified immediately if the conditions as documented herein do not reflect the conditions on the site at the time of construction.

Conclusions & Closing Remarks

We trust that the information provided is sufficient for your current needs but do not hesitate to contact the undersigned if further clarification is required. We thank you for choosing EastTech Engineering Consultants Inc. as your geotechnical consultant for this undertaking.

Sincerely;

Chris MacPherson

Chris MacPherson *P.Eng. CESA*
EastTech Engineering Consultants Inc.

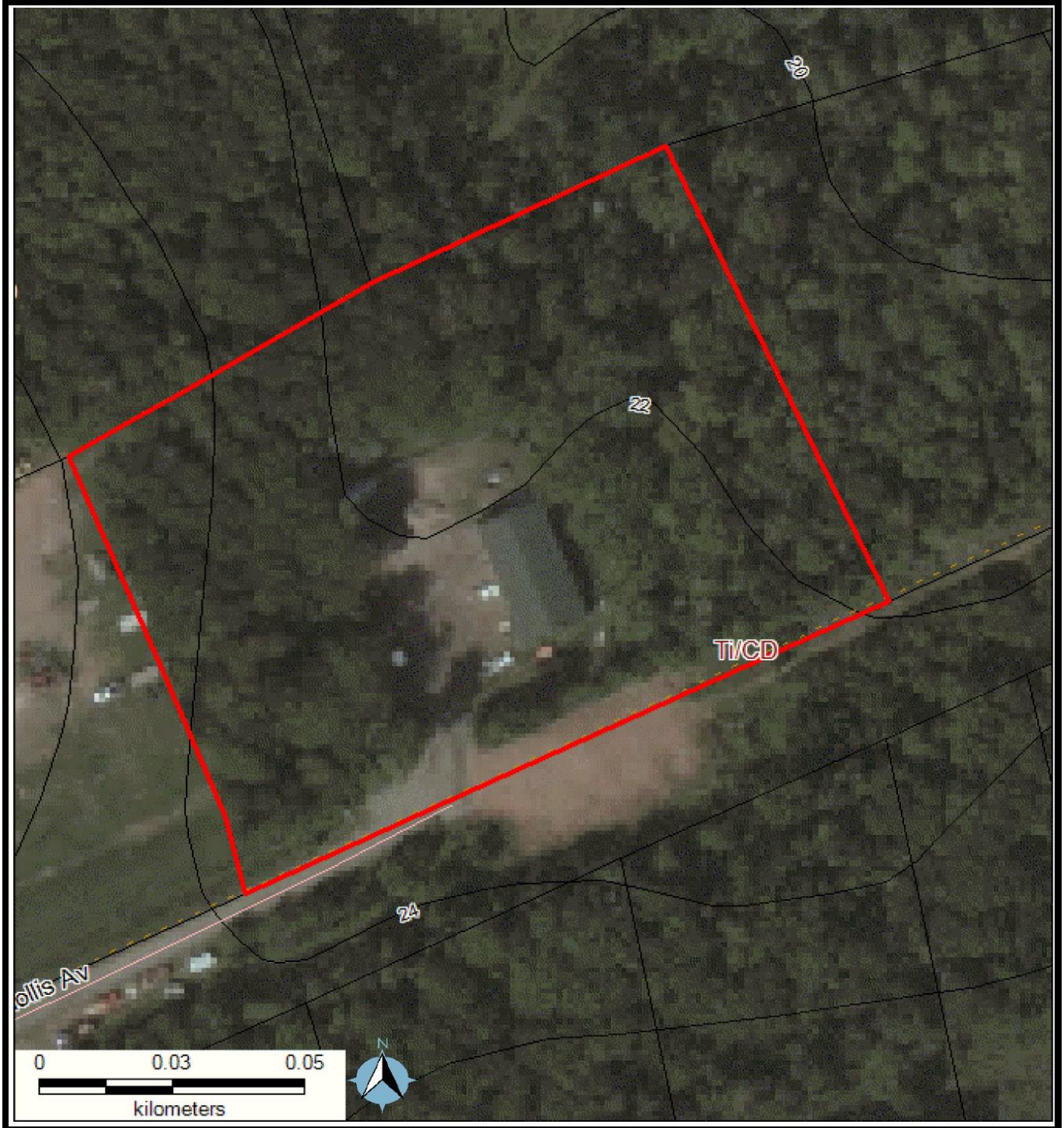
Attachments: ***Figures (3 paged)***
Test Pit Logs (3 pages)
Borehole and Test Pit Log Symbols Key & Glossary of Terms (6 pages)

Project	**Geotechncial Investigation - Town of Stratford Maintenance Building**
Project #	**210613**
Client	**Town of Stratford**
Location	**21 Hollis Avenue, Stratford, Queens County, Prince Edward Island**
Figure Title	**Figure 1 - Project Location Map**

Comments

Location of site located at 21 Hollis Avenue in Stratford, Queens County, Prince Edward Island, which was the subject of this investigation.

Project	**Geotechncial Investigation - Town of Stratford Maintenance Building**
Project #	**210613**
Client	**Town of Stratford**
Location	**21 Hollis Avenue, Stratford, Queens County, Prince Edward Island**
Figure Title	**Figure 2 - Orthographic Image With Topographic Contours**



Comments

The orthographic contous indicate that the site moderately slopes towards the north and northwest.

Project	Geotechncial Investigation - Town of Stratford Maintenance Building
Project #	210613
Client	Town of Stratford
Location	21 Hollis Avenue, Stratford, Queens County, Prince Edward Island
Figure Title	Figure 3 - Test Pit Location Plan

Comments

EASTTECH ENGINEERING CONSULTANTS
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GEOTECHNICAL TEST PIT LOG TP1

(Page 1 of 1)

Geotechnical Investigation
Town of Stratford Maintenance Building
21 Hollis Avenue, Stratford
Queens County,Prince Edward Island
File# 210613

Client	: Town of Stratford	Logged By	: D. Richard
Excavation Date	: June 16, 2021	Reviewed By	: C. MacPherson
Contractor	: Brute Force Bulldozing	Test Pit Elevation	:
Equipment	: Rubber Tire Backhoe	Test Pit Depth	: 1.83 m
Datum	:	Groundwater Depth	: N/A

Depth in Meters	Surf. Elev. 0.0 m	GRAPHIC	DESCRIPTION	Water Level	% Moisture	% Gravel	% Sand	% Fines < #200	REMARKS
0.0	0		ROOTMAT & TOPSOIL - Loose Dark Brown to Black to Orange Silty Sand with Traces of Fine Roots & Organics						
0.5	-.5		GLACIAL TILL - Compact Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles & Boulders						
1.0	-1								
1.5	-1.5								
2.0									

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GEOTECHNICAL TEST PIT LOG TP2

(Page 1 of 1)

Geotechnical Investigation
Town of Stratford Maintenance Building
21 Hollis Avenue, Stratford
Queens County,Prince Edward Island
File# 210613

Client	: Town of Stratford	Logged By	: D. Richard
Excavation Date	: June 16, 2021	Reviewed By	: C. MacPherson
Contractor	: Brute Force Bulldozing	Test Pit Elevation	:
Equipment	: Rubber Tire Backhoe	Test Pit Depth	: 1.59 m
Datum	:	Groundwater Depth	: N/A

Depth in Meters	Surf. Elev. 0.0 m	GRAPHIC	DESCRIPTION	Water Level	% Moisture	% Gravel	% Sand	% Fines < #200	REMARKS
0.0	0		ROOTMAT & TOPSOIL - Loose Dark Brown to Black to Orange Silty Sand with Traces of Fine Roots & Organics						
0.5	-.5		GLACIAL TILL - Compact Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles & Boulders						
1.0	-1								
1.5	-1.5								
2.0									

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GEOTECHNICAL TEST PIT LOG TP3

(Page 1 of 1)

Geotechnical Investigation
Town of Stratford Maintenance Building
21 Hollis Avenue, Stratford
Queens County,Prince Edward Island
File# 210613

Client	: Town of Stratford	Logged By	: D. Richard
Excavation Date	: June 16, 2021	Reviewed By	: C. MacPherson
Contractor	: Brute Force Bulldozing	Test Pit Elevation	:
Equipment	: Rubber Tire Backhoe	Test Pit Depth	: 1.44 m
Datum	:	Groundwater Depth	: N/A

Depth in Meters	Surf. Elev. 0.0 m	GRAPHIC	DESCRIPTION	Water Level	% Moisture	% Gravel	% Sand	% Fines < #200	REMARKS
0.0	0		ROOTMAT & TOPSOIL - Loose Dark Brown to Black to Orange Silty Sand with Traces of Fine Roots & Organics						
0.5	-.5		GLACIAL TILL - Compact Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles & Boulders						
1.0	-1								
1.5	-1.5								
2.0									

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Borehole & Test Pit Log Symbols Key
Descriptions & Glossary of Technical Terms

Soil Description

The description of physical characteristics of soil deposit which may include (but is not limited to) density, color, texture, particle size distribution, moisture content, odor, and geological structure that is observed. Particle size distribution is generally described based on % weight particle size as determined by ASTM Method D423, using the following sizes and descriptors:

Soil Classification by Particle Diameter Size		Soil Classification by Particle Size Distribution % Weight	
Boulders	>200 mm	**Descriptor**	**% Particle Fraction**
Cobbles	60 mm - 200 mm	Noun - Sand	>35% and main fraction
Gravel	2.0 mm – 60 mm	"And" – And Sand	>35%
Sand	0.075 mm – 2.0 mm	Adjective - Sandy	20% - 35%
Fines (Silt & Clay Combined)	<0.075 mm	"Some" – Some Sand	10% - 20%
Silt	0.002 mm – 0.075 mm	"Traces of" – Traces of Sand	1% - 10%
Clay	<0.002 mm	Example: Silty *Sand with Some Clay and Traces of Gravel*	

Standard Penetration (SPT) Test

Compaction Condition or Relative Density is commonly estimated using a Standard Penetration Test (SPT test) during a borehole investigation. The procedure involves driving a 51 mm diameter open end split barrel sampler by dropping a free falling 63.5 kg weight a vertical distance of 760 mm, with each drop of the weight constituting a blow. The number of blows required to drive the sampler 300 mm after an initial penetration of 150 mm is referred to as the SPT N value. SPT Tests in exploratory borings give a qualitative guide to the in-situ engineering properties and provide a sample of the soil for observations of physical characteristics and laboratory analysis. The relative density and undrained shear strength can be estimated from the SPT N-Values obtained at a given depth as shown in the tables below for cohesionless and cohesive soils, respectively.

Compactness Condition / Relative Density of Cohesionless Soils via Standard Penetration Test

Compactness Condition / Relative Density	SPT N-Index
Very Loose	0 – 4
Loose	4 - 10
Compact	10 -30
Dense	30 - 50
Very Dense	>50

Consistency & Undrained Shear Strength (c_u) of Cohesive Soils

Consistency	Undrained Shear Strength (c_u)	SPT N-Index	Field Identification*
Very Soft	<12 kPa	<2	Easily penetrated several cm by fist
Soft	12 – 25 kPa	2 - 4	Easily penetrated several cm by thumb
Firm	25 – 50 kPa	4 – 8	Penetrated several cm by thumb with moderate effort
Stiff	50 – 100 kPa	8 – 15	Readily indented by thumb but penetrated with great effort
Very Stiff	100 – 200 kPa	15 – 30	Readily indented by the thumb nail
Hard	>200 kPa	>30	Indented with difficulty by thumbnail

*Field identification methods are tot suitable for the quantitative determination of soil strength as noted in the second column of this table.

Borehole & Test Pit Log Symbols Key
Descriptions & Glossary of Technical Terms

Test Pit Investigation

For small to mid sized structures which are to be supported by shallow foundations, a test pit investigation is often selected as an economical method of conducting a preliminary geotechnical field investigation. In this process, multiple test pits are excavated on a site using a backhoe or excavator. The physical characteristics of the in-situ soils can be documented, and samples of the materials can be collected for further observation and laboratory analysis. The presence and approximate depth of groundwater can also be determined during a test pit investigation if it is near the surface.

Dynamic Cone Penetrometer (DCP) Test

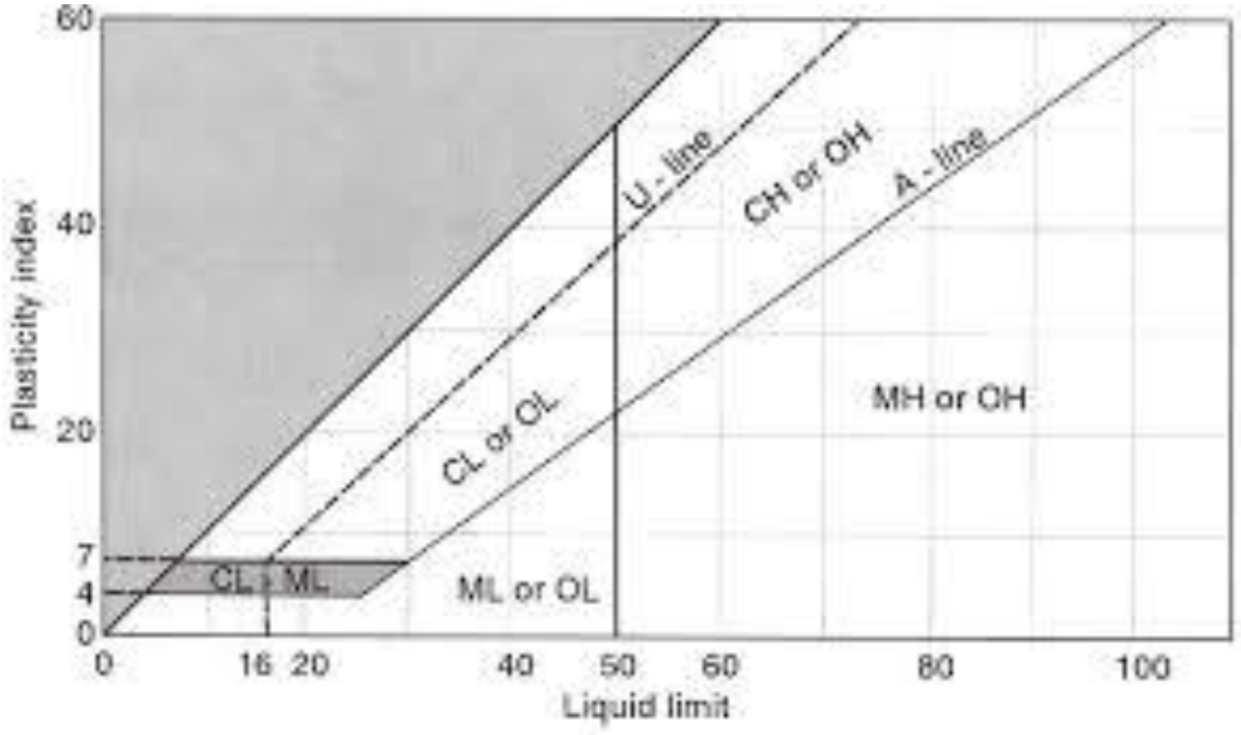
Dynamic Cone Penetration Tests involve driving a cone tipped probe of known geometry using a calibrated weight free falling a known distance. The number of blows required to drive the probe a given distance is recorded and the data is used to evaluate the strength of the soils. The test procedure is similar to a SPT Test; however, a soil sample cannot be retrieved due to the closed end tip on the probing device. The blow counts obtained from DCP tests are commonly used to determine an equivalent SPT N Value for a given soil or fill material present at depth.

Atterberg Limits

Atterberg Limits describe the range of water content or moisture content (w), called plasticity index $I_p - w_L - w_p$ over which a soil displays plastic behavior, where w_L and w_p are determined by ASTM Methods D423 & D424. The level of plasticity of a soil is defined as follows:

Low Degree of Plasticity	**$w_L < 30$**
Medium Degree of Plasticity	**$30 < w_L < 50$**
High Degree of Plasticity	**$50 < w_L$**

Atterberg limits can also be used to further determine soil texture and estimate particle size distribution and in cohesive and/or organic soils by plotting the plasticity index vs. the liquid limit as shown below.



Borehole & Test Pit Log Symbols Key
Descriptions & Glossary of Technical Terms

Bedrock Description & Evaluation

Bedrock is the lithified rock that is typically found below in-situ sediments and soil deposits that are commonly referred to as regolith or overburden materials. Bedrock can be characterized by its mineralogical and/or chemical composition, and the process under which it has formed as an igneous, metamorphic, or sedimentary deposit. Bedrock can be further described by its physical characteristics (color, strength, odor, etc.) and any distinct geological features (bedding planes, striations, joint spacing/orientation, fractures, vein deposits, etc.) that are visible in a specimen. Any signs of visible weathering are also important to note in a bedrock sample, as it can influence the bearing capacity and geotechnical design requirements, particularly in the uppermost extents of the deposit that may have been exposed directly to glacial loading and movement in the past. Common terminology used to describe weathering and strength are described below:

Terminology	Description / Typical Observation
Highly Weathered	Significant decomposition and discoloration of rock visible, easily broken by hand around edges, signs of clay deposits and/or chemical weathering in most or all joints
Moderately Weathered	Discoloration often visible, rock is notably weakened at upper surface and along joints, minor to moderate deposits and/or chemical weathering visible in most joints
Slightly Weathered	Slight discoloration may be visible, locally soft areas in rock when compared to fresh rock, minor discoloring along joints
Unweathered	No indication of discoloration or fluid movement along exposed surfaces of rock beds
Weak	Crumbles with blow of pick end of rock hammer
Moderately Weak	Crumbles with moderate blow of rock hammer
Moderately Strong	Will indent 5 mm with moderate to strong blow of pick end of rock hammer
Strong	Specimen can be broken with a single strong blow of rock hammer
Very Strong	Requires several strong blows with rock hammer to break specimen

Rock Quality Designation (RQD) is a measure of the degree of fractures in rock cores, defined as the ratio of the accumulated lengths (minimum 100 mm) of sound rock over the total core length. The table below includes the terminology that is used in the description of bedrock samples based on the measured RQD of a bedrock sample collected and analyzed in a geotechnical field instigation.

% RQD	Rock Quality Description
0% - 25%	Very Poor – Severely Fractured & Broken
25% - 50%	Poor – Regular Jointing Along Bedding Planes
50% - 75%	Fair – Blocky Structure with Some Bedding Planes Intact
75% - 90%	Good – Majority of Bedding Plans & Structures Intact
90% - 100%	Very Good – Little to No Jointing or Weathering

More detailed evaluation of bedrock strength and bearing capabilities can be completed using the Rock Mass Rating (RMR) system where the Uniaxial Compressive Strength, RQD, Spacing of Discontinuities, Condition of Discontinuities, Orientation of Discontinuities, and Groundwater Conditions are assessed to determine an RMR Value ranging from 0-100.

Rock Mass Rating	Rock Quality Description	Rock Mass Rating	Rock Quality Description
0 – 20	Very Poor	60 – 80	Good
20 – 40	Poor	80 - 100	Very Good
40 - 60	Fair		

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Borehole & Test Pit Log Symbols Key
Descriptions & Glossary of Technical Terms

Symbols for Geotechnical Parameters of Soil & Bedrock *As per the Canadian Foundation Engineering Manual 4th Edition (2006)*

Symbol	Term	Symbol	Term	Symbol	Term
Φ	Angle of Internal Friction	K_a	Active Earth Pressure Coefficient	ρ_{field}	Density Field Moisture Content
C_u	Undrained Shear Strength	K_p	Passive Earth Pressure Coefficient	ρ_{dry}	Dry Density
σ_c	Uniaxial Compressive Strength	K_o	Coefficient of Earth Pressure at Rest	ρ_{sat}	Saturated Density
σ_t	Tensile Strength	P_a	Active Earth Thrust	γ_{field}	Field Unit Weight
τ	Shear Stress	P_p	Passive Earth Thrust	γ'	Effective Unit Weight
ν	Poisson's Ratio	p_a	Active Earth Pressure	γ_{sat}	Saturated Unit Weight
e	Void Ratio	p_p	Passive Earth Pressure	k_s	Modulus of Subgrade Reaction
n	Porosity	w_L	Liquid Limit	I_P	Plasticity Index
w	Water/Moisture Content	w_P	Plastic Limit	I_L	Liquidity Index
k	Hydraulic Conductivity	w_S	Shrinkage Limit	I_C	Consistency Index
$\delta_{concrete}$	Interface Friction Angle Concrete	δ_{steel}	Interface Friction Angle Steel	δ_{wood}	Interface Friction Angle Wood

Borehole & Test Pit Log Symbols Key
Descriptions & Glossary of Technical Terms

Glossary of Technical Terms ***As per the Canadian Foundation Engineering Manual 4th Edition (2006)***

Soil – The portion of the earth's crust which is fragmented, or such that some individual particles of a dried sample can be readily separated by agitation in water, including boulders, cobbles, gravel, sand, silt, clay, and organic matter.

Poorly Graded Soil – A soil that has a predominance of particles of one size.

Well Graded Soil – A soil that has a wide range of sized particles.

Shape & Surface Conditions of Particles – Description of particle geometry (e.g., platy, elongated, equidimensional, angular, sub-angular, sub-rounded, rounded, etc.)

Rock – a natural aggregate of minerals that cannot readily be broken by hand.

Fill – Artificial (man-made or man-placed) deposits consisting of soil, rock, rubble, industrial wastes, organic materials, or any combination of these, which are transported and placed on the natural surface of soil or rock. Fills may or may not be compacted.

Groundwater – Free water in the ground.

Groundwater Level – The top surface of free water in the ground.

Perched Groundwater – Free water in the ground extending to a limited depth.

Artesian Groundwater – A confined body of water under a pressure that gives a level of hydrostatic pore pressure (phreatic elevation) that is higher than the top surface of the soil unit in which the pore water pressure exists. Flowing artesian corresponds to the condition where the phreatic elevation is higher than the ground surface.

Hydrostatic Pore Pressure – A pore water pressure varying as pressure in a non-moving free-standing column of water.

Frost Susceptible Soil – Soil in which significant ice segregation will occur resulting in frost heave, or heaving pressures, when requisite moisture and freezing conditions exist.

Frost Action – The phenomenon occurring when water in soil is subjected to freezing, which, because of the water-ice phase change or ice lens growth, results in a total volume increase, and/or the build-up of expansive forces under confined conditions, and the subsequent thawing that leads to the loss of sol strength and increased compressibility.

Adfreezing – The adhesion of soil to a foundation unit resulting from the freezing of soil water.

Allowable Bearing Pressure – In working stress design it is the maximum pressure that may be applied to a soil or rock by the foundation unit considered in design under expected loading and subsurface conditions towards achieving desired performance of the foundation system. In limit state design, allowable bearing pressure commonly corresponds to serviceability limit state for settlement not exceeding 25 mm towards achieving desired performance of the foundation.

Bearing Surface – The contact surface between a foundation unit and the soil or rock upon which it bears or is supported.

Geotechnical Resistance at Serviceability Limit State (SLS) – The reaction of the soil or rock at the deformation associated with a SLS condition.

Borehole & Test Pit Log Symbols Key
Descriptions & Glossary of Technical Terms

Geotechnical Resistance at Ultimate Limit State (ULS) – The geotechnical ultimate resistance of soil or rock corresponding to a failure mechanism (limit state) predictive from theoretical analysis using unfactored geotechnical parameters obtained from test or estimated from assessed values.

Factored Geotechnical Resistance at Ultimate Limit State (ULS) – The product of the geotechnical resistance factor and the geotechnical ultimate (nominal) soil or rock resistance.

Factored Geotechnical Bearing Resistance – The calculated ultimate (nominal) bearing resistance, obtained using characteristic ground parameters multiplied by the recommended geotechnical resistance factor.

Factor of Safety – In working stress design, the ratio of maximum available resistance to the resistance mobilized under the applied load.

Rock Quality Designation – A measure of the degree of fractures in rock cores, defined as the ratio of the accumulated lengths (minimum 100 mm) of sound rock over the total core length.

Foundation – A system or arrangement of structural members through which the loads from a building are transferred to supporting soil or rock.

Shallow Foundation – A foundation unit that provides support for a building by transferring loads to soil or rock located close to the lowest part of the building.

Deep Foundation – A foundation unit that provides support for a structure by transferring loads either by toe-bearing to soil or rock at considerable depth below the structure, or by shaft resistance in the soil or rock in which it is placed. Piles and caissons are the most common types of deep foundations.

Pile – A Slender deep foundation unit, made of materials such as wood, steel, or concrete, or combinations thereof, which is either premanufactured and placed by driving, jacking, jetting, or screwing, or cast-in-place in a hole formed by driving, excavating, or boring. Cast-in-place bored piles are commonly referred to as caissons in Canada.

Pier – A deep foundation unit with a large diameter to length ration, usually a large diameter bored pile or caisson.

Shaft Resistance – The resistance mobilized on the shaft side of a deep foundation. Upward acting is called positive shaft resistance. Downward acting is called negative shaft resistance or negative skin friction.

Downdrag – The transfer of load (dragload) to a deep foundation unit by means of negative skin friction when soil settles in relation to the foundation unit.

Overconsolidation Ratio (OCR) - The ration between the preconsolidation pressure and the current effective overburden stress.