Town of Stewiacke

Low Tide Road Pump Station Upgrades

Issued for Tender

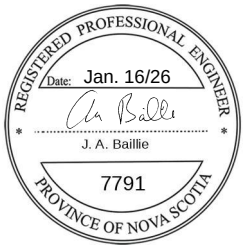
January 2026

Contract No. 251100.00

Town of Stewiacke

Low Tide Road Pump Station Upgrades

0	Issued for Tender	PM	Jan. 16/26	AB
Rev.	Issue	Reviewed By:	Date	Issued By:



CBCL Project No. 251100.00

THESE PROJECT DOCUMENTS HAVE BEEN PREPARED FOR USE WITH AND REQUIRE BEING READ IN CONJUNCTION WITH **THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES** AS PUBLISHED BY THE NOVA SCOTIA ROAD BUILDERS ASSOCIATION - CONSULTING ENGINEERS OF NOVA SCOTIA AND THE **JOINT COMMITTEE ON CONTRACT DOCUMENTS.** COPIES OF THESE DOCUMENTS ARE AVAILABLE FROM THE JOINT COMMITTEE ON CONTRACT DOCUMENTS, 455 COLBY DRIVE, DARTMOUTH, NS, B2V 2K4; PHONE: (902)233-9362 OR BY EMAIL AT: NSMUNICIPALSERVICES@GMAIL.COM. Visit www.standardspec.ca for more information and to place an order for these specifications.

1. A complete Tender is comprised of the following:

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

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

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

2. Submission:

All tender submissions must be uploaded electronically to Low Tide Road Pump Station Upgrades Submission Page (https://cbcl.bonfirehub.ca/projects/101562/details).The closing date and time are included in the Bonfire opportunity posting.

Hard copy submissions will not be accepted. All submissions and accompanying documentation will become the property of the Owner and may not be returned. Late proposals will not be accepted, nor will additional time be granted to any individual Tenderer. Any extensions to the closing date will be made only via addendum.

You must register your company with Bonfire to access opportunities. Registration is free. If you have any challenges registering, you can contact Bonfire Support at support@gobonfire.com. For instructions on how to register go to Vendor Registration . When you are ready to register, please go to our eProcurement portal at CBCL (bonfirehub.ca)

For a quick tutorial on how to upload a submittal, visit: Creating and Uploading a Submission to Bonfire

3. Tender opening will occur 15 minutes following Tender Closing. A Microsoft Teams link can be requested by any bidder that wishes to attend the opening by contacting Peter Meszaros at email: pmeszaros@cbcl.ca a minimum of 3 hours before Tender Closing. Bids will be opened during a videoconference available to all bidders who request the link and virtually attend the opening.

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

5. When forming their estimates and preparing their tenders, Tenderers shall take full cognizance of the content of all the Contract Documents listed in Section 00 41 43 – Tender Form – Unit Rate.

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

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

8. All tenders shall be valid for acceptance for sixty (60) calendar days from the Closing Date.

9. The Agreement is included in the Contract Documents at the time of tendering and is provided for information only and shall not be completed at the time of tendering.

10. The appending of any qualifying clauses to the tender or failure to comply with these instructions and with all other relevant provisions contained in the documents in the completing of any tender may render such tender liable to disqualification as determined by the *Owner*.

11. Contract Price to exclude HST. Harmonized sales tax shall be indicated as a separate amount and included in the *Total Amount Payable*.

12. Each tender shall be accompanied by Tender Security in the amount of ten percent (10%) of the *Total Amount Payable* (inclusive of *Value Added Taxes*) in evidence of the bona fide nature of the tender. Tender Security must satisfy the same requirements of Contract Security as set forth in clause 12 herein.

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

14. The Tender Security of the unsuccessful Tenderers will be returned to them after the *Owner* enters into a formal agreement with the successful Tenderer or the expiration of validity of their tenders, whichever occurs first.

15. On the written acceptance by the *Owner* of a tender, that tender becomes the Contract and the Tenderer who has submitted it becomes the Contractor. The Contractor will be required to enter into a formal agreement with the *Owner* following receipt of a written notice of acceptance from the *Owner*. The written notice of acceptance forms a Contract Agreement until the formal “Agreement” included herein is executed.

16. Within seven (7) days of written acceptance of a tender, provide Contract Security in the amount and form as specified in Section 00 73 00 – Supplementary General Conditions, and Insurance as specified in CCDC 18-2023, GC 11.1 and supplemented in CCDC 41-2020.

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

18. Where manufactured articles are described or specified in the Contract Documents by name, catalogue number of a manufacturer or supplier, Tenderers shall tender on the basis of using only such articles. Procedure concerning substitution of a specified article with another shall be in accordance with equivalents and alternates in Section 01 10 00 – General Requirements.

19. The *Owner* will not defray any expenses whatsoever incurred by Tenderers in the preparation and submission of their tenders. The *Owner* reserves the right to waive any formality or technicality in any tender.

20. The *Owner* reserves the right to accept or to reject any or all tenders received, or to select a tender which is deemed by the *Owner* to be in its best interests. The *Owner* reserves the right to negotiate with the lowest compliant tenderer in the event that all tendered prices are higher than anticipated.

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

22. Tenders may be amended or withdrawn without penalty, by accessing https://cbcl.bonfirehub.ca/projects/101562/details prior to Tender Closing.
    .1 The *Owner* will not be responsible for any failure attributable to the transmission or reception of the submission. The time stamp of the uploaded submission received by https://cbcl.bonfirehub.ca/projects/101562/details will be used to determine if the submission was received in time – not the time it was emailed sent by the sender. Last minute submissions are not recommended

23. Tenderers are encouraged to visit the Site and make themselves familiar with site conditions and requirements. No formal pre-tender site meeting date is planned at this time.

END OF SECTION

1. SALUTATION:

.1 To: Town of Stewiacke
295 George Street
Stewiacke, NS B0N 2J0

.2 For: Low Tide Road Pump Station Upgrades
Contract No. 251100.00

.3 From: _____

2. TENDERER DECLARES:

.1 That this tender was made without collusion or fraud.

.2 That the proposed work was carefully examined.

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

.4 That Contract Documents and Addenda No. __ to __ inclusive were carefully examined.

.5 That all the above were taken into consideration in preparation of this Tender.

3. TENDERER AGREES:

.1 To enter into a contract to supply all labour, material and equipment and to do all work necessary to construct the Work as described and specified herein for the unit prices stated in Subsection 4 hereunder, Schedule of Quantities and Unit Prices.

.2 That the estimated Contract Price shall be the sum of the products of the tendered unit prices multiplied by the estimated quantities in Subsection 4 hereunder.

.3 That this Tender is valid for acceptance for sixty (60) calendar days from the time of Tender Closing.

.4 That measurement and payment for items listed in Subsection 4 hereunder shall be in accordance with corresponding items in Section 01 22 00 Measurement and Payment.

.5 Upon request to provide evidence of ability and experience within seven (7) calendar days of request, including experience in similar work, work currently under contract, senior supervisory staff available for the project, equipment available for use on the Work, and financial resources.

.6 To execute in triplicate the Agreement and forward same together with the specified contract security and insurance documents to the Owner within fourteen (14) calendar days of written notice of award.

.7 That failure to enter into a formal contract and give specified insurance documents and contract security within time required will constitute grounds for forfeiture of certified cheque or enforcement of bid bond.

.8 That if certified cheque is forfeited, Owner will retain difference in money between amount of Tender and amount for which Owner legally contracts with another party to perform the Work and will refund balance, if any, to Tenderer.

.9 Declares to have carefully examined the documents and Addenda No. ___ to _____ referred to in the first paragraph of this Tender Form, and the Tenderer hereby accepts and agrees to the same as forming a part of the Contract.

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

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

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

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

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

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

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

.17 That the Contract Documents include:

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

Dwg. No.	Title
000	COVER SHEET
C01	PROPOSED CONDITIONS SITE PLAN AND PLAN & SECTION
C02	EXISTING CONDITIONS AND REMOVALS PLAN & SECTION

C03	CIVIL DETAILS
E01	LIFT STATION UPGRADE PLAN, SINGLE LINE DIAGRAMS, AND LEGEND
E02	ELECTRICAL DETAILS

.8 Addenda as issued and as confirmed in subsection 2.4 of this section.

4. SCHEDULE OF QUANTITIES AND UNIT PRICES

Item No.	Description	Unit of Measurement	Estimated Quantity	Unit Price	Total Price
1.	Demo., Removals and Bypass	L.S.	1	_____	_____
2.	Pump Station Fit-up	L.S.	1	_____	_____
3.	Landscaping	L.S.	1	_____	_____
4.	Environmental Protection	LS	1	_____	_____

TENDER SUMMARY

ESTIMATED CONTRACT PRICE (Excluding HST) **$**_____

Add HST (14% of the Estimated Contract Price) $_____

TOTAL AMOUNT PAYABLE **$**_____

TENDERER'S HST REGISTRATION NO. _____

5. COMPLETION TIME

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

6. SIGNATURE *

DATED THIS _____ DAY OF_____ , 202___.

[Seal]

_____
Name of Firm Tendering

_____
Signature of Signing Officer

_____ _____
Witness Name and Title (Printed)

_____ _____
Witness Signature of Signing Officer

_____ _____
Name and Title (Printed)

_____
Company Address

_____
Telephone No.

_____
Fax No.

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

END OF SECTION

This Agreement made on the ___ day of ____ in the year___.

BY AND BETWEEN

Town of Stewiacke

hereinafter called the "Owner"

and

hereinafter called the "Contractor"

The Owner and the Contractor agree as follows:

ARTICLE A1 - THE WORK

The Contractor shall:

.1 Perform the Work required by the Contract Documents for

Low Tide Road Pump Station Upgrades

Contract No. 251100.00

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

CBCL Limited is acting as and is hereinafter called the “Engineer”,

and

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

.3 commence the Work by the ___ day of _____in the year 202__ and attain Ready-for-Takeover of the work as certified by the Engineer by the ___ day of _____ in the year 202__.

ARTICLE A2 – AGREEMENTS AND AMENDMENTS

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

ARTICLE A3 - CONTRACT DOCUMENTS

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

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

Dwg. No.	Title
000	COVER SHEET
C01	PROPOSED CONDITIONS SITE PLAN AND PLAN & SECTION
C02	EXISTING CONDITIONS AND REMOVALS PLAN & SECTION
C03	CIVIL DETAILS
E01	LIFT STATION UPGRADE PLAN, SINGLE LINE DIAGRAMS, AND LEGEND
E02	ELECTRICAL DETAILS

.8 Addenda _____ through _____.

ARTICLE A4 - CONTRACT PRICE

.1 The estimated Contract Price is the sum of the products of the estimated quantities multiplied by the appropriate Unit Price in the Tender Form excluding the amount of HST. The estimated Contract Price is:

_____

_____/100 dollars $_____

.2 All amounts are in Canadian funds. Unit Prices exclude HST and Total Amount Payable includes HST.

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

.4 The final Contract Price will be the sum of the products of the actual final quantities that are incorporated in, or made necessary by the Work, as confirmed by count and measurement, multiplied by the appropriate Unit Prices from the Tender Form together with any adjustments that are made in accordance with the provisions of the Contract Documents plus the amount of HST.

ARTICLE A5 - PAYMENT

.1 The Owner shall pay the Contractor in Canadian funds for the performance of the Contract.

.2 The Owner shall make monthly payments on account to the Contractor for the Work performed, as certified by the Engineer, subject to a 10% holdback.

.3 The amount of the monthly payments shall be calculated as follows:
  .1 The quantity for each pay item on which actual work has been performed shall be measured.
  .2 For each Unit Price item this quantity shall be multiplied by the applicable Unit Price as provided in the Tender Form.
  .3 For each lump sum item, multiply the percent complete by the value of the lump sum item.
  .4 The total value of work completed for the payment period shall be calculated by adding the total of the products for all pay items from subsection A5.3.2 and A5.3.3 of this section.
  .5 The amount of the monthly payment shall be determined by deducting the 10% holdback and the

total of all previous payments from the total value of such completed work as determined under subsection A5.3.4 of this section.

.6 To the amount calculated above, the Harmonized Tax will be added.

.4 The last day of the payment period shall be the last day of the month.

.5 Upon Substantial Performance of the Work as certified by the Engineer the Owner shall pay to the Contractor the holdback monies then due in accordance with the provisions of Section 00 72 45 - General Conditions, subsection GC5.6 –SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK.

.6 Upon the issuance of the final certificate for payment, Work as certified by the Engineer the Owner shall pay to the Contractor the balance of monies then due in accordance with the provision of Section 00 72 45 - General Conditions, subsection GC5.7 – FINAL PAYMENT.

.7 In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payment shall be made to the Contractor in accordance with the provisions of Section 00 72 45 - General Conditions, subsection GC11.1 - INSURANCE.

.8 If the Owner fails to make payments to the Contractor as they become due under the terms of the Contract, interest shall be payable as follows:

.1 The annual interest rate applicable to the contract is 2% compounded semi-annually.

.2 Interest shall be calculated on the overdue balance from the due date.

ARTICLE A6 - RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING

.1 Notices in writing shall be addressed to the recipient at the address set out below.

.2 The delivery of a notice in writing shall be by hand, courier, prepaid first class mail, facsimile or e-mail.

.3 A notice in writing delivered by one party in accordance with this Contract shall be deemed to have been received by the other party on the date of delivery if delivered by hand or courier, or if sent by mail it shall be deemed to have been received five (5) Working Days after the date on which it was mailed.

.4 A notice in writing sent by facsimile or e-mail shall be deemed to have been received on the date of its transmission provided that if such day is not a Working Day or if it is received after the end of normal business hours at the place of receipt, then it shall be deemed to have been received at the opening of business at the place of receipt on the first Working Day following the transmission thereof.

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

.1 The Owner at 295 George Street

Stewiacke, NS B0N 2J0

.2 The Contractor at [Address of Contractor]

.3 The Engineer at 1505 Barrington Street, Suite 901

Halifax, NS B3J 2R7

ARTICLE A7 - QUANTITIES AND MEASUREMENT

.1 The quantities shown in Section 00 41 43 Tender Form - Schedule of Quantities and Unit Prices are estimated.

.2 Measurement for the actual quantities used to determine payments and Contract Price shall be in accordance with Section 01 22 00 - Measurement and Payment.

ARTICLE A8 - SUCCESSION

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

ARTICLE A9 - RIGHTS AND REMEDIES

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

ARTICLE A-10 TIME OF THE ESSENCE

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

ARTICLE A11 - SEVERABILITY

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

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

SIGNED AND DELIVERED
In the presence of:

OWNER

Town of Stewiacke
Name of Owner

WITNESS

Signature

Name and Title of Person Signing

Signature

Name and Title of Person Signing

Signature

Name and Title of Person Signing

CONTRACTOR

Name of Contractor

WITNESS

Signature

Name and Title of Person Signing

Signature

Name and Title of Person Signing

Signature

Name and Title of Person Signing

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

END OF SECTION

These Supplementary Conditions amend the Civil Works Contract – CCDC 18 – 2023. Where a portion of the Contract is modified or deleted by these Supplementary General Conditions, the unaltered portions of the Contract shall remain in effect.

AGREEMENT BETWEEN *OWNER* AND CONTRACTOR

Page 4, delete the first bullet point within Article 4.1 and replace with the following:

*Unit Prices from the basis for payment of the *Contract Price*. Quantities in the Schedule of Unit Prices within Section 00 41 43 – Tender Form are estimated. The estimated *Contract Price*, which is the total extended amount indicated in the Schedule of Unit Prices within Section 00 41 43 – Tender Form, exclusive of taxes is:

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

"ARTICLE A-9 SEVERABILITY

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

ARTICLE A-10 TIME OF THE ESSENCE

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

DEFINITIONS

Page 6, Add the following new Definitions:

Approved or Approval

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

Period of Delay

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

Site

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

Total Amount Payable

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

Page 7, add new definitions as follows:

Standard Specification

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

Supplementary Specifications

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

GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

PART 2 – ADMINISTRATION OF THE CONTRACT

GC 2.3 REVIEW AND INSPECTION OF THE WORK

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

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

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

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

PART 3 – EXECUTION OF THE *WORK*

GC 3.4 CONSTRUCTION SCHEDULE

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

Page 12, add new clause 3.4.2 as follows:

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

GC 3.5 SUPERVISION

Page 12, add new clause 3.5.3 as follows:

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

GC 3.6 – LAYOUT OF THE WORK

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

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

GC 3.8 LABOUR AND PRODUCTS

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

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

GC 3.9 SHOP DRAWINGS

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

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

PART 4 - ALLOWANCES

GC 4.1 CASH ALLOWANCES

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

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

Page 14, add the following new Clause:

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

PART 5 - PAYMENT

GC 5.5 – PAYMENT

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

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

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

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

"5.5.1.4 The *Contractor* shall pay promptly any and all accounts for labour, services and materials used for the purpose of the fulfilment of this Contract as and when such accounts become due and payable and shall furnish the *Consultant* with proof of payment of such accounts in such form and as often as the *Consultant* may request."

GC 5.5 SUBSTANTIAL PERFORMANCE OF THE *WORK* AND PAYMENT OF HOLDBACK

Page 15, after Clause 5.6.1.2, add the following:

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

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

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

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

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

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

monies retained in accordance with the provisions of the Contract and subject to the terms of the lien legislation in the *Place of the Work*."

GC 5.7 FINAL PAYMENT

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

PART 6 – CHANGES IN THE *WORK*

Page 16, add new clause 6.1.1.3 as follows:

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

Page 16, within clause 6.2.2.1 after "the Work" add "to the limits set forth in GC 6.7 – Quantity Variations".

GC 6.2 CHANGE ORDER

Page 16, after Clause 6.2.3, add the following:

"6.2.4 The mark-up on agreed upon changes are as follows:
.1 *Work* performed by the *Contractor's* own forces will be the cost of the *Work* plus ten (10%) percent overhead and profit.
.2 Work performed by the subcontractor's force will be the cost of *Work* plus 15% overhead and profit. Where the *Work* can be done by the *Contractor's* forces, as solely determined by the *Consultant*, but is done by the Subcontractor's forces, the mark-up for overhead and profit will be limited to ten (10%) percent.

6.2.5 Before the approval of any *Change Order* over $1,000 in value the *Consultant* is entitled to receive, upon request, at a minimum, the following breakdown of cost associated with such *Change Order*:
.1 Labour rates, excluding operators.
.2 Equipment rates including operators.
.3 Supervisory staff rates.
.4 Subcontractor and material or equipment invoices where applicable.
.5 Overhead costs including worker's compensation, *site* trailer cost as applicable, insurance, bonding, small tool expenses, CPP, and EI contributions.

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

6.2.7 No compensation will be allowed for the cost of repairs to equipment or in respect of construction equipment of any kind idle on the Site except as directed by the *Consultant* in writing or for damage to anything used in performing any such extra *Work* or making any such alteration.

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

GC 6.3 – CHANGE DIRECTIVE

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

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

GC 6.4 – CONCEALED OR UNKNOWN CONDITIONS

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

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

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

GC 6.5 DELAYS

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

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

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

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

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

GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE

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

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

PART 9 - PROTECTION OF PERSONS AND PROPERTY

GC 9.4 – CONSTRUCTION SAFETY

Page 24, after GC 9.4.5, add the following:

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

PART 10 - GOVERNING REGULATIONS

GC 10.1 TAXES AND DUTIES

Page 25, after Clause 10.1.2, add new Clauses 10.1.3 and 10.1.4 as follows:

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

10.1.4 In the event that any new tariffs, taxes or trade restrictions are imposed or revoked by either the Canadian or US government on materials, goods or services related to this project after the date of bid closing, that affect the cost or availability of goods and services necessary for the performance of the work under this Agreement, the parties agree to negotiate in good faith an adjustment to the schedule and contract price resulting solely and directly from such changes. The Contractor shall provide written notice to the Client within five (5) days of the imposition or revocation of such tariffs, outlining the associated specific cost increase in the case of imposition, or decrease in the case of revocation, and schedule impacts to the project

GC 10.2 – LAWS, NOTICES, PERMITS AND FEES

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

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

PART 12 – *OWNER* TAKEOVER

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

.9 Commissioning reports as in Section 01 91 13.

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

GC 12.3 - WARRANTY

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

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

PART 13 – INDEMNIFICATION AND WAIVER

GC 13.1 INDEMNIFICATION

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

Add new GC 14 as follows:

PART 14 – CONTRACT SECURITY

GC 14.1 CONTRACT SECURITY

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

"14.1 The *Contractor* shall, prior to commencement of the *Work*, provide to the *Owner* a Performance Bond and a Labour and Materials Bond, each in the amount of 50% of the Total Amount Payable or an Irrevocable Letter of Credit in the amount of 20% of the Total Amount Payable. The Irrevocable Letter of Credit shall be issued by a certified financial institution for a period of no less than twelve (12) months after the issue of Substantial Performance Certificate. Include the cost of

providing the Irrevocable Letter of Credit in Contract Price. Should it become apparent that the final cost of the project will exceed the Total Amount Payable by more than 10%, the Contractor shall arrange to have his bonds or Irrevocable Letter of Credit reissued, based on the projected final cost."

14.2 The Contract Security will be retained until the expiration of the Warranty Period."

END OF SECTION

INTENT OF THE SUPPLEMENTARY SPECIFICATIONS

.1 The Work of this Contract is to be constructed in accordance with the Standard Specifications for Municipal Services (2024 Revision) as developed and published by the Nova Scotia Road Builders Association and Nova Scotia Consulting Engineers Association Joint Committee on Contract Documents, except as modified herein.

.2 These Supplementary Specifications modify the specification sections to which they refer.

.3 The Supplementary Specifications take precedence over the Specification to which they refer.

SECTION 00 21 00 – INFORMATION TO TENDERERS

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

SECTION 00 41 43 – TENDER FORM

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

SECTION 00 53 43 – FORM OF AGREEMENT

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

SECTION 00 73 00 – SUPPLEMENTARY GENERAL CONDITIONS

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

SECTION 01 10 00 - GENERAL REQUIREMENTS

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

1.2 Summary of Work

.1 The project take place the Low Tide Road sewage pumping station in the Town of Stewiacke, Nova Scotia, located adjacent to the intersection of Main Street West and Low Tide Road. The work includes, but it not necessarily limited, to the following: the design, installation, and subsequent removal of a temporary sewage bypass system at the Site; removal, cleaning, and turn over to the Owner at their public works building at 33 Kent Road of existing equipment including pumps, valves, and floats within the existing wet well and any electrical equipment removed from the electrical panels; the supply and installation of new piping, pumps, valves, couplings, and fittings within the wet well, precast riser and cover; site grading, installation and maintenance of topsoil, and sod; full site reinstatement to pre-construction conditions; all required environmental protection measures; and all Work as shown on the Project Drawings and as specified herein.

Page 1, add delete subsection 1.3.1 and replace with the following:

1.3 Scheduling and Coordination

.1 A separate electrical and controls subcontractor will be on Site and their work will tie into the Work of this contract. In order for the work to proceed in a coordinated manner submit a detailed construction schedule to the Engineer for review a minimum of two (2) weeks prior to the commencement of construction. Revise and resubmit as directed by the

Owner and the Engineer.

.2 Schedule to minimize disturbance and downtime of the lift station. Schedule tasks, sequence work, and provide adequate space and access for electrical personnel of both the Contractor's forces and equipment as well as those of other contractors and equipment to facilitate the successful execution of all work activities on Site.

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

1.4 Setting Out the Work

.1 Set out the Work complete with sufficient survey reference points to identify the site on the ground and maintain these or re-establish them as required during the Contract period.

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

1.5 Existing Site Conditions

.3 Do not remove nor disturb survey monuments, iron bars, and markers representing property boundaries and locations which may be encountered during the execution of the work, without written permission from the Engineer. Replace disturbed monuments unless written permission for removal has been obtained.

.4 Contractor to indemnify and hold harmless the Owner and Engineer against damages for consequential loss and against any claim made against the Owner or the Engineer by the owner of any main, line, conduit, or other such structure or utility, in any way caused by the operations of the Contractor in the performance of this Contract.

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

.1 Shop Drawings:

.1 Submit shop detail or working drawings and manufacturer's data for all items requiring fabrication, on or off the Site, and for all proprietary equipment to the Engineer for review before any such items or equipment are incorporated into the Works. This review of Shop Drawings by Engineer is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that Engineer approves the detailed design inherent in the Shop Drawings, responsibility for which remains with the Contractor submitting them, and such review shall not relieve the Contractor of responsibility for errors or omissions in Shop Drawings or of responsibility for meeting all requirements of the Construction and Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for co-ordination of the work of all sub-trades.

.2 Submit electronic copies of all relevant shop drawings to the Engineer in PDF format. Where it is not practical to provide electronic copies and where approved by the Engineer, submit three (3) paper copies of shop drawings.

.3 Submit shop drawings with such promptness as not to cause delay in this work, or of the works of any Sub-Contractors.

.4 The information submitted shall clearly show the dimensions,

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

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

1.8 Record Drawings	.1	Provide a survey showing all infrastructure that is installed during construction (including, but not limited to: shots on each bell, laterals at main line and property line, pipe inverts within manholes and top of manholes). Record drawings must be submitted in AutoCAD ".dwg" or ".dxf" format. Drawings must have a projected coordinate system of NAD 1983 CSRS UTM Zone 20N, North American Datum. Failure to comply with this clause will result in a holdback of $7,500 + HST.

SECTION 01 22 00 – MEASUREMENT AND PAYMENT

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

SECTION 01 57 00 - ENVIRONMENTAL PROTECTION

Page 1, add new subsections 1.1 and 1. 2 as follows, and renumber subsequent subsections:

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

Page 2, add new subsection 1.8.4 as follows:

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

Page 2, add new subsection 1.9 as follows:

1.9 Disposal of Wastes	.1	Dispose of rubbish and waste materials at authorized off-site location as directed by the Engineer.
	.2	Do not dispose of waste, volatile, or deleterious materials into waterways, storm, or sanitary sewers.

.3 Regulated wastes shall be disposed of in accordance with applicable municipal, provincial, and federal requirements.

SECTION 03 30 00 – CONCRETE

Page 3, add new subsection 2.12.1 as follows:

.1 Acceptable products: SikaGrout 212 as manufactured by Sika Canada Inc., SikaGrout 928 as manufactured by Sika Canada, V1 Premium Grout and V3-10K Grout as manufactured by W.R. Meadows, or approved equivalent.

Page 3, add new subsection 2.1.13 as follows:

.13 Repair mortar: Acceptable products: SikaEmaco-488 CI by Sika Canada Inc., or approved equivalent.

SECTION 31 15 53 – EROSION AND SEDIMENT CONTROL

Page 1, add new subsection 2.1.2 as follows:

.2 Acceptable Products: Terrafence by Terrafix, Layfield Construction Products Silt Fence, Silt Fence by Nilex, or approved equivalent.

SECTION 31 20 00 - EARTHWORK

Page 2, add new subsection 1.6 as follows:

1.6 Existing Structures and Underground Services

.1 Furnish temporary support, adequate protection and maintenance of all underground and surface structures, water mains, drains, sewers, power lines and other existing site items affected by the Works. Notify Engineer before altering or supporting an existing structure.

.2 Restore, upon completion of the work structures which have been disturbed.

.3 Proceed with caution in excavation and preparation of trenches so exact location of all buried pipes and services and underground structures may be determined and be responsible for repair of pipes, services, and structures when broken or otherwise damaged.

.4 During progress of the Works, do not unreasonably interfere with flow of sewage or water in any existing sewer or drain. Do not jeopardize the public health in any way. Wherever sanitary sewage is pumped or diverted, it shall be carried entirely in closed pipes. Temporary diversion of sanitary sewage through open channel shall not be permitted.

.5 Whenever it is necessary to explore and excavate to determine the location of existing underground utility structures, make such examination and excavation at no additional cost to the Contract.

Page 2, delete subsection 2.1.1 and replace with the following:

.1 Selected Backfill: common which is free from stumps, trees, roots, sod, organics; rocks, boulders, and masonry larger than 150 mm in any dimension, any other deleterious materials. Material is to be of a moisture content that will allow compaction to the specified densities.

Page 4, delete subsection 2.1.9, and replace with the following:

.9 Granular bedding material: Type 1 gravel as per Section 31 20 00 and where specified on drawing. 25mm clear stone as specified in Section 31 20 00 and where indicated on Project Drawings.

Page 4, add new subsections 2.1.11 and 2.1.12 as follows:

.11 Geotextile separator: non-woven, needle-punched, polyester filter fabric. Permittivity shall be in the range of 1.0 sec-1 with a flow rate of approximately 50 L/sec/m2. Material shall have a minimum grab strength of 1,330 N, puncture strength of 3,780 N and an apparent opening size of approximately 0.15 mm.
.1 Acceptable products: Terrafix 800R or approved equivalent.

.12 Rigid Insulation: to CAN/ULC-S701, Type 4, expanded polystyrene, minimum compressive strength of 40 psi.
.1 Acceptable products: Dow Styrofoam HI40, Foamular 400 by Owens Corning, or approved equivalent.

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

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

Page 6, delete subsection 3.7.7.3 and replace as follows:

.3 Pipe bedding material to 98% standard Proctor density.

Page 8; add new subsections 3.12, 3.13, and 3.14 as follows:

3.12 Disposal of Surplus Excavated Material .1 Dispose of surplus excavated material as directed by Engineer to disposal sites approved by the Owner.

3.13 Restoration .1 Reinstate disturbed areas to condition, elevation and thickness equal to or better than that which existed before excavation, as specified in Section 32 98 00

3.14 Insulation .1 Place rigid insulation in trench where indicated or as required in areas where pipe cover is less than 1500mm. Do not disturb or break boards during backfilling.

SECTION 32 98 00 - REINSTATEMENT

Page 2, delete subsection 3.1.1 and replace with the following:

3.1 General .1 Reinstate all disturbed surfaces using existing material types to the levels, elevations and dimensions which existed prior to construction and as detailed on the Drawings.

SECTION 33 32 14 – SUBMERSIBLE PUMPING STATION

Page 1, add new subsection 1.1.2 as follow:

.2 Reuse existing wet well structure as shown on the drawings

Page 2, delete subsection 2.1.1 and replace with the following:

.1 Pump characteristics:
.1 Static head: 22.73 m
.2 Each pump must be capable of delivering 7.4 L/s at a total dynamic head of 31.5m TDH. Maximum motor size must not exceed 20 HP. Pumps to be suitable for operation with variable frequency drives (VFDs).
.3 Acceptable manufacturers: Barnes, Xylem (Flygt), Sulzer, or approved equivalent

Page 4, delete subsection 2.7.1 and replace with the following:

.1 Pipe: all interior station and valve piping to be ductile iron special class 54.

Page 5, delete subsection 2.7.5 and 2.7.6 and replace with the following:

.5 Valve coating to be 2-part epoxy or fusion bonded epoxy suitable for environment. Primer coting not accepted.
.1 Swing check valves: flanged ends, non-clog, unobstructed free flow type.
.1 Acceptable product: Val-matic Swing-Flex Check Valve or approved equivalent.
.2 Plug Valve:
.1 Non-lubricated eccentric plug type, cast iron body to ASTM A126, Class B, with exterior epoxy finish and BUNA-N interior coating; full round port, wrench operated, with 125 lb flanges.
.1 Acceptable products: Keystone, Ballcentric, or approved equivalent.
.3 Duckbill check valve: end of pipe check valve to be TideFlex TF1, unless otherwise noted, or approved equivalent.

Page 7, delete subsection 2.12 and replace with the following:

2.12 Level Control Regulator .1 Level Control mounting hardware to be 316 stainless steel.

.2 Level control by mechanical switches (floats). Mercury liquid level switches are not permitted. All equipment located in wet well to be IP68, corrosion resistant and suitable for the hazardous area classification. All push buttons for interfacing with instrumentation to be above ground and

accessible.

.3 Provide mechanical switches for backup pump control as specified in the Project Documents.

.4 Level equipment to include all manufacturer supplied accessories required for proper installation unless stated otherwise in the Project Documents.

Page 8, delete subsection 2.14 and replace with the following:

2.14 Pump Control Panel

.1 Pump control panel to be removed from the existing pump station, stored, protected, and reinstalled in the upgraded pump station as indicated on the Project Drawings

Page 11, re-name sub-clause 3.7 to read "Testing"

Page 11, add subsection 3.8 as follows:

3.8 Commissioning

.1 Submittals:

.1 Verification of the performance will be done by means of a commissioning process. The Contractor is required to provide a commissioning plan three (3) weeks prior to commissioning, which will include schedule of all commissioning-relate activities as specified in individual sections. Work with the Contractor in developing this plan.

.2 The Commissioning Plan, developed by the Contractor, in collaboration with the Equipment Supplier is to include:

.1 Details regarding the roles and responsibilities of the commissioning team during all phases of commissioning.
.2 Documentation defining design assumptions and performance standards of proposed systems.
.3 Description of systems, intended operation and performance details.
.4 Static testing and verification procedures.
.5 Functional performance testing procedures.
.6 Documentation requirements for test results.
.7 Training plan for operators.
.8 Preparation of the Interim and Final Commissioning Reports.
.9 Consideration to Work restrictions and their impact on existing system performance.

.3 Contractor's responsibilities:

.1 To work with the Equipment Supplier to prepare commissioning plan and manage the commissioning process.
.2 Confirms subcontractors, including pre-purchased Equipment Supplier, carry out applicable tests prior to the Consultant's

review.

.3 Arranges for walkthrough and commissioning reports, procedures and demonstration, after work has been reviewed, tested and commissioned.

.4 Performs and documents all preliminary tests, assembles manuals received from the Equipment Supplier as well as completed test forms and verification forms.

.5 Provide assistance to Equipment Supplier during start up to access installation concerns.

.6 Performs system start-up and testing.

.7 Is present for operation of system through tests with the Consultant and Owner.

.8 Obtains all code-required inspections and certifications and approvals.

.9 Prepares record drawings.

.10 Obtains and submit all warranties to Owner.

.11 Organizes and submits Operating and Maintenance Manual from the subcontractors, Equipment Suppliers and manufacturers to Owner.

.12 Assembles and delivers all spare parts and special tools to the Owner.

.4 Consultant's responsibilities:

.1 Inspect installation.

.2 Receive all test reports from the Contractor and verify results.

.3 Participate in the equipment start-up testing conducted by the Contractor and verify results.

.4 Review shop drawings.

.5 Communicate apparent deviations from the specifications.

.6 Review the equipment operating and maintenance manuals prepared by the Contractor.

.7 Participate in the performance testing process.

.8 Review the Record Drawings.

.5 Equipment Supplier responsibilities:

.1 Performs and documents all preliminary tests, assembles manuals of completed test forms and verification forms.

.2 Performs component start-up and testing with Contractors.

.3 Manages installation of the systems.

.4 Performs system start-up and testing.

.5 Arranges for training sessions schedule, including preparation and distribution of materials.

.6 Provides training and instruction and prepares Operating and Maintenance Manual for presentation to the operating and maintenance personnel.

.7 Is responsible for filling out the commissioning data sheets and test forms/manual.

.8 Provides training and instruction and prepares Operating and Maintenance Manual for presentation to the operating and maintenance personnel.

.9 Is present for operation of system through tests with the Consultant, Owner and Contractors.

.10 Assembles and delivers all spare parts and special tools to the Owner.

.6 Owner's responsibilities:

.1 The Owner's specific duties include making staff available at appointed times for training by manufacturer's representatives and providing labour to conduct work within existing facilities that is not included in the General Contract.

.7 Commissioning meetings:

.1 All parties shall participate in a pre-commissioning on-site meeting. Commissioning meetings will be coordinated and chaired by the Contractor. The Contractor shall take minutes and distribute minutes within two (2) working days of the subject meeting. The Contractor shall update and circulate the updated commissioning schedule one (1) working day prior to commissioning meetings.

.8 The Contractor, the Consultant, Owner and Equipment Supplier will work together in a concerted effort to fully commission all systems in an organized manner and in a manner that will allow all to carry out their own obligations fully.

.9 General:

.1 The Commissioning Objectives are:

.1 To bring the mechanical and electrical systems and components from a state of "static completion" to a state of "dynamic operation".

.2 To verify conformance to Contract Requirements.

.3 To confirm the equipment meets the design intent of the Specifications and function in accordance with defined operational requirements.

.4 To ensure the completed facility meets user stated requirements.

.5 To provide all testing documents, certification and records.

.6 To fully train and equip personnel to operate, maintain and trouble shoot all systems.

SECTION 33 34 00 – PRESSURE SEWERS

Page 2, add new subsection 1.7 as follows:

3.7 Temporary Bypass

.1 Two weeks prior to starting work on Site submit a temporary bypass plan to the Engineer for approval. Pay for all costs associated with the supply, installation, and operation of pumps, controls, piping systems, temporary power and traffic control for the purpose of bypassing the existing lift stations for completion of the upgrade, including interception at upstream manholes.

.2 The estimated present day peak wet weather flows (PWWF) at the pump station is as follows. These are design estimates only and subject to variation based on future weather or unusual flow events.
.1 Low Tide Road PWWF = 5.6 L/s.

SECTION 33 39 00 – CATCHBASINS, MANHOLES AND STRUCTURES

Page 2, delete subsection 2.5 and replace with the following:

2.5 Waterproofing

.1 Exterior waterproofing sheet membrane waterproofing of composite sheets comprised of rubberized asphalt integrally bonded to a film of high density cross laminated polyethylene, minimum 1.5 mm (60 mils) thick. The material shall be suitable for application at low temperature. Provide protection board as recommended by the manufacturer.
.1 Acceptable material: W.R. Grace Bituthene 3000, Blueskin WP200 as supplied by Henry Canada Ltd., W.R. Meadows MEL-ROL or approved equivalent.

.2 Primer: as recommended by the waterproofing manufacturer.

SECTION 39 00 00 – STANDARD DETAILS

Delete standard details and replace with new details on Drawings.

Add the following sections:

Section 02 41 00 – Removals and Relocations
Section 26 05 00 – Electrical General Requirements
Section 26 05 20 – Wire and Box Connectors (0-1000V)
Section 26 05 21 – Wire and Cables (0-1000V)
Section 26 05 28 – Grounding – Secondary
Section 26 05 29 – Fastenings and Supports
Section 26 05 31 – Splitters, Junction Boxes, Pull Boxes, and Cabinets
Section 26 05 32 – Outlet Boxes, Conduit Boxes, and Fittings
Section 26 05 34 – Conduit, Conduit Fittings, and Conduit Fastenings
Section 26 05 44 – Installation of Cables in Trenches and Ducts
Section 26 28 14 – Fuses – Low Voltage
Section 26 28 21 – Moulded Case Circuit Breakers

END OF SECTION

PART 1 - GENERAL

1. Unit prices for all items in the Schedule of Quantities and Unit Prices are full compensation for the work necessary to complete each item in the contract and in combination for all work necessary to complete the Work as a whole.

2. For all items as applicable include all of the following as required where individual quantities are not provided in the Tender Form: traffic control, location of inground services by external utilities and coordination of work by external utilities (Water, Electrical, Gas, etc.), environmental protection, protection of existing trees, clearing, grubbing, common excavation, shoring, dewatering, backfilling, bedding, compaction, disposal of surplus materials, fittings, tees, bends, valves, protective coatings, marker tape, anodes, reinstatement of all disturbed surfaces with matching materials and thicknesses, testing, pipe cleaning, disinfection, marker stakes, recording as-constructed features, CCTV inspection, and all incidentals.

3. The unit and lump sum prices for all items in the Form of Tender "Schedule of Quantities and Unit Prices" shall include the cost for furnishing all materials, labour, tools, and equipment necessary to complete the work in accordance with the Contract, the Drawings and Specification, and shall cover all costs of surety, insurance mobilization, remobilization permits, coordination with Owner and/or other contractors on-site, assistance to the Consultant, site offices and other general costs. Each item shall include for all necessary supervision, labour, materials, plant and services, security provisions, survey and all operations and allowances customary and necessary to complete each item and the Contract as a whole notwithstanding the fact that not every such necessary operation is mentioned or included specifically for measurement.

4. All measurement shall be along a horizontal plane unless otherwise indicated.

5. The numbers of items described below correspond to the numbers of the items in Section 00 41 43, subsection 4, Schedule of Quantities and Unit Prices.

6. Provisional items shall mean that the unit price as tendered shall be included in the estimated Contract Price and that the Owner reserves the right to delete all or portions of this item from the estimated Contract Price.

PART 2 – ITEMS

1. Demo., Removals and Bypass

Unit of Measurement: Lump Sum (L.S.)

This item includes: removal, cleaning, and turn over to the Owner at their public works building at 9 Rose Island Lane of equipment including pumps, valves, and floats within the existing wet wells, and any electrical equipment removed from the control panel; removal and off Site disposal of wet well concrete frame and cover, internal piping, exhaust duct, wiring to the source, rails, and power washing of wet well. This item also includes all costs associated with supplying, installing and subsequently removing a temporary sewage bypass system approved by the Engineer.

2. Pump Station Fit-up

Unit of Measurement: Lump Sum (L.S.)

This item includes: supply and construction of new precast concrete wet well sections, gooseneck vent, access hatch, safety grate, sheet membrane waterproofing, o-ring gaskets, pipe supports, sealant and joint wrap; underground conduit, all pipes and fittings as set forth in the list of fittings. This item also includes the supply and installation of a new control monument, the supply and installation of a new 150A main breaker, the relocation of the existing power and re-installation of removed control panels as well as commissioning and testing of the upgraded pump station. Coordinate work with NSP and the Owner.

3. Landscaping

Unit of Measurement: Lump Sum (L.S.)

This item includes: supply, placement, and grading of select backfill and topsoil, as well as the maintenance of sod complete with and soil amendments (fertilizer, lime, mulch, and planting mixture).

4. Environmental Protection

Unit of Measurement: Lump Sum (LS)

This item includes: supply, installation, maintenance, and subsequent removal upon completion of the Work of all environmental protection measures including but not limited to silt fences, flow checks, straw/hay cover, soaker bags, erosion protection blankets, and all other measures as directed by the Engineer and to the satisfaction of NSECC or any other agency having jurisdiction.

END OF SECTION

PART 1 GENERAL

1.01 WORK INCLUDED

.1 This section specifies the requirements for removing and turning over a number of items select site back to the Owner including, but not limited to: pumps, floats, valves, control panel and pump bases. Control panel to be reinstalled in the upgraded pump station.

.2 The Work also includes the removal and off-site disposal of ductile iron and PVC pipe, vent pipe, concrete wet well top section and hatch, overhead and underground electrical installations and all fittings and appurtenance not scheduled for turn over to the Owner.

1.02 RELATED WORK

.1 Earthwork: Section 31 20 00.

1.03 EXISTING CONDITIONS

.1 Items to be demolished or removed are to be based on their condition on date that Tender is accepted.

1.04 PROTECTION

.1 Prevent movement, settlement or damage of adjacent structures and services. Provide bracing, shoring as required. Repair damage caused by demolition as directed by Engineer.

.2 Confirm demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.

.3 Fires and burning of waste or materials is not permitted on site

.4 Do not bury waste or materials on site.

.5 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures during demolition work.

.6 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all roads.

.7 Protect trees, plants and foliage on site and adjacent properties where indicated.

1.05 REGULATORY REQUIREMENTS

.1 Perform Work in compliance with applicable Federal, Provincial and Municipal Regulations.

PART 2 PRODUCTS

Not Applicable

PART 3 EXECUTION

3.01 PREPARATION

.1 Inspect site with Engineer and verify extent and location of items designated for removal, disposal, recycling, salvage, turn over to Owner and items to remain.

.2 Engineer will create a Record of Existing Conditions.

.3 Locate and protect utilities. Preserve active utilities traversing site in operating condition.

3.02 ENVIRONMENTAL PROTECTION

.1 Dispose of all materials in accordance with the Nova Scotia Environment Act. Pay all costs and fees associated with the disposal.

3.03 SAFETY CODE

.1 Observe construction safety measures of Provincial Government, including but not limited to the Occupational Health and Safety Act, Chapter 7; Workers' Compensation Board and Municipal authority provided that in any case of conflict or discrepancy the more stringent requirement shall apply.

.2 Store volatile waste in closed containers and remove from premises daily.

.3 WHMIS:

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

.4 Exercise pollution and environmental control of construction activities as specified and as required during the Work.

.5 Submit to Engineer prior to commencement of Work, printed information detailing means and methods so the following will be carried out:

.1 To ensure that health and safety of persons at or near the Work.

.2 To ensure the measures and procedures of the regulatory agencies specified are carried out.

.3 To ensure every employee, self-employed person and employer performing Work under this Contract complies with the regulatory agencies specified.

3.04 PIPE REMOVAL

.1 Remove all pipework indicated and excavate to undisturbed soil beneath all.

.2 Backfill as specified in Section 31 20 00.

.3 Dispose of pipe off-site.

3.05 ASPHALT AND CONCRETE PAVEMENT

.1 Saw cut to lines indicated.

.2 Remove existing asphalt and concrete pavement where indicated.

.3 Dispose of asphalt offsite in accordance with provincial requirements for the disposal of asphaltic materials.

3.06 ITEMS TO TURN OVER

.1 Turn over existing pumps, floats, valves, electrical equipment, and pump bases to the Owner.

.2 Take care not to damage items scheduled for turn over to Owner.

.3 Store and protect items on Site until the Owner can remove them. Any damage due to improper storage will be the responsibility of the Contractor.

3.07 RESTORATION

.1 Restore areas and existing works outside areas of demolition to match condition of adjacent, undisturbed areas or as indicated on drawings.

END OF SECTION

PART 1 GENERAL

1.01 WORK INCLUDED

.1 Provide all labour, tools and equipment necessary to complete the electrical and instrumentation installations at the Pump Station sites as indicated on the Drawings and as specified.

.2 Disconnect, protect, and relocate existing pump station control panel to new location.

.3 Remove existing electrical equipment as indicated on the drawings. Where indicated turn over removed equipment to the Owner.

.4 Arrange and coordinate with NSPI to disconnect and remove existing power to the existing pump stations and reconnect to the new service mast to provide power to the new pump station.

.5 Supply and install 120/208V secondary service to the pump station as indicated on the Project Drawings.

.6 Supply and installation of float switches as indicated on the drawings and as specified herein.

.7 Provide and install electrical equipment as indicated on the drawings and specified herein.

.8 Provide and install power, control and instrumentation wiring as shown on the drawings.

.9 Provide and install all grounding necessary to satisfy the CEC-Part 1 and the local provincial inspection authority.

.10 Document, test and calibrate to the satisfaction of the Engineer and Owner, all electrical, instrumentation and control equipment as specified herein to ensure a complete and functioning system.

.11 Safely store electrical, control and instrumentation equipment awaiting installation on Site.

.12 During construction protect all installed electrical, control and instrumentation equipment.

.13 Repair/replace equipment damaged during construction or otherwise deemed defective or non-compliant with this specification, at no expense to the Owner or Engineer. These expenses must include all material, labour and other fees.

.14 Coordinate/schedule with other trades to ensure that the construction proceeds in a timely and efficient manner.

.15 As indicated on the drawings, some areas in and around each pump station are Zone 1 and Zone 2 hazardous locations as defined by Section 18 of the Canadian Electrical Code. All electrical installations in these areas must be completed in accordance with the Canadian Electrical Code for the specified classification. These areas may contain hydrogen sulphide (North American Gas Group C, IEC Gas Group IIB) and methane (North American Gas Group D, IEC Gas Group IIA) gases. These areas are also a Category 2 location in accordance with Section 22 of the Canadian Electrical Code and the electrical installation must be completed as per the requirements of a Category 2 location. Refer to the electrical design drawings for locations of hazardous locations.

.16 Supply and install new underground electrical duct banks as indicated on the drawings.

.17 Supply and install required junction boxes, pull boxes, cable glands, conduit, conduit fittings and required mounting hardware.

1.02 REFERENCES

.1 CSA C22.1-24, Canadian Electrical Code, Part 1 (latest Edition), Safety Standard for Electrical Installations.

.2 CAN/CSA C22.3 No. 1-25, Overhead Systems.

.3 CAN/CSA C22.3 No. 7-25, Underground Systems.

.4 CSA-C235-19(R2025), Preferred Voltage Levels for AC Systems, 0 to 50 000 V.

1.03 CODES AND STANDARDS

.1 Do complete installation in accordance with CSA C22.1, Canadian Electrical Code, Part 1, local regulations and Safety Standard for Electrical Installations, except where specified otherwise.

.2 Conform to CAN3-C235, Preferred Voltage Levels for AC Systems, 0 to 50 000V.

.3 Do overhead systems in accordance with CAN/CSA C22.3 No. 1, and underground systems in accordance with CAN/CSA C22.3 No. 7, except where specified otherwise.

.4 Comply with all CSA, provincial electrical inspection and power utility bulletins enforce at the time of tender submission.

1.04 PERMITS, FEES AND INSPECTIONS

.1 Submit to the Electrical Inspection Department, Municipal Authority and Supply Authority the necessary number of drawings and specifications, for examination and approval prior to commencement of work. Submit this information within twenty (20) working days of the award of Tender and provide the Engineer with written notice at the time this has been submitted.

.2 Provide the Engineer with a copy of the Electrical Inspection Department and Supply Authority Plans Review Report, immediately upon receipt. No shop drawings will be reviewed prior to receipt of the Plans Review Report from the Contractor.

.3 Obtain all necessary permits including an Electrical Wiring Permit for electrical work and Communications Cabling Permit for communications cabling work from the authority having jurisdiction, prior to commencement of work. Provide a copy of each permit to the Engineer upon receipt. Properly display the permits on the work site.

.4 Upon specific request, the Engineer will provide, to the Contractor, up to a maximum of three (3) copies of the drawings and specifications required for submittal to the Electrical Inspection Department and Supply Authority. These drawings and specifications will be provided to the Contractor at no cost, unless specified otherwise.

.5 Arrange for all required inspections to be conducted by the authority having jurisdiction. Provide a copy of all inspection reports to the Engineer immediately upon receipt. Notify the Engineer

immediately of changes required by the authority having jurisdiction, prior to making changes.

.6 Furnish Certificates of Acceptance from authorities having jurisdiction upon completion of work. Include a copy in the Operation and Maintenance Manual.

.7 Pay all associated fees.

1.05 SHOP DRAWINGS, PRODUCTS DATA AND SAMPLES

.1 Submit shop drawings, product data and samples in accordance with Section 01 10 00.

.2 Indicate details of construction, dimensions, capacities, weights and electrical performance characteristics of equipment or material.

.3 Where applicable, include wiring, single line and schematic diagrams.

.4 Include wiring drawings or diagrams showing interconnection with work of other Sections.

1.06 OPERATION AND MAINTENANCE DATA

.1 Provide operation and maintenance data for incorporation into operation and maintenance manual in accordance with Section 01 10 00.

.2 Include in operations and maintenance data:
- .1 Details of design elements, construction features, component function and maintenance requirements, to permit effective start-up, operation, maintenance, repair, modification, extension and expansion of any portion or feature of the installation.
- .2 Technical data, product data, supplemented by bulletins, component illustrations, exploded views, technical descriptions of items, and parts lists. Advertising or sales literature not acceptable.
- .3 Wiring and schematic diagrams and performance curves.
- .4 Names and addresses of local suppliers for items included in maintenance manuals.
- .5 Copy of reviewed shop drawings.

1.07 CARE, OPERATION AND START-UP

.1 Instruct operating personnel in the operation, care and maintenance of equipment.

.2 Arrange and pay for services of manufacturer's factory service engineer to supervise start-up of installation, check, adjust, balance and calibrate components.

.3 Except where note otherwise, provide these services for such period, and for as many visits as necessary to put equipment in operation, and ensure that operating personnel are conversant with aspects of its care and operation.

1.08 VOLTAGE RATINGS

.1 Operating voltages: to CSA C235.

.2 Motors, control and distribution devices and equipment to operate satisfactorily at 60 Hz within normal operating limits established by above standard. Equipment to operate in extreme operating conditions established in above standard without damage to equipment.

1.09 MATERIALS AND EQUIPMENT

.1 Provide materials and equipment in accordance with Section 01 10 00.

.2 Equipment and material to be CSA certified or certified by an electrical inspection agency recognized by the Provincial Electrical Inspection Department.

.3 Where there is no alternative to supplying equipment which is not CSA certified, obtain special approval, in writing, from Electrical Inspection Department.

.4 Factory assemble control panels and component assemblies.

.5 Use stainless steel fasteners throughout for all conduits, cables and equipment. Fasteners include nuts, bolts, screws and washers.

1.10 ELECTRIC MOTORS, EQUIPMENT AND CONTROLS

.1 Coordinate supplier and installer responsibility for mechanical and process equipment specified in other specification divisions to ensure complete and functioning systems.

1.11 FINISHES

.1 Shop finish metal enclosure surfaces by removal of rust and scale, cleaning, application of rust resistant primer inside and outside, and at least two (2) coats of finish enamel.

.2 Clean and touch up surfaces of shop-painted equipment scratched or marred during shipment or installation, to match original paint to the satisfaction of the Engineer. If not acceptable to the Engineer, replace equipment at no additional cost to the Contract.

.3 Clean, prime and paint exposed hangers, racks, fastenings to prevent rusting.

1.12 EQUIPMENT IDENTIFICATION

.1 Identify electrical equipment with nameplates as specified herein.

.2 Nameplates:

.1 Lamicoid 3 mm thick plastic engraving sheet, white face, black core, mechanically attached unless specified otherwise. Use steel type "pop-rivets" to fasten nameplates to "metal" surfaces.

NAMEPLATE SIZES

Size 1	9 x 50 mm	1 line	3 mm	high letters
Size 2	12 x 70 mm	1 line	5 mm	high letters
Size 3	12 x 70 mm	2 lines	3 mm	high letters
Size 4	19 x 90 mm	1 line	9 mm	high letters
Size 5	19 x 90 mm	2 lines	5 mm	high letters
Size 6	25 x 100 mm	1 line	12 mm	high letters
Size 7	25 x 100 mm	2 lines	6 mm	high letters
Size 8	50 x 100 mm	3 lines	9 mm	high letters
Size 9	60 x 150 mm	3 lines	12 mm	high letters

.3 Have wording on nameplates approved by the Engineer prior to manufacture.

.4 Allow for average of forty (40) letters per nameplate.

.5 Identification to be English.

.6 Nameplates for junction boxes to indicate system and voltage characteristics.

.7 Install lamicoid nameplates on fusible type disconnect switches are to also indicate the maximum designated/designed fuse size.

.8 Install lamicoid nameplates on, or adjacent to, all various systems' control panels and/or cabinets. Nameplates are to reflect individual system's assigned name, and where applicable, also indicate designated name of power source and branch circuit breaker number(s), and voltage(s) and phase.

.9 Provide clearly visible marking on electrical equipment to warn persons of potential electrical shock and arc flash hazards as specified in Section 2 of the Canadian Electrical Code.

.10 Provide terminal boxes, panels and miscellaneous equipment fed from two or more sources with a warning nameplate prominently displayed: "CAUTION - MORE THAN ONE SOURCE VOLTAGE".

.11 Provide terminal boxes, panels and miscellaneous wire ways containing intrinsically safe circuits with a warning nameplate prominently displayed: "INTRINSICALLY SAFE CIRCUIT".

1.13 WIRING IDENTIFICATION

.1 Identify wiring with permanent indelible identifying markings, either numbered or coloured plastic tapes, on both ends of phase conductors of feeders and branch circuit wiring.

.2 Maintain phase sequence and colour coding throughout.

.3 Colour code: to CSA C22.1.

1.14 WIRING TERMINATIONS

.1 Lugs, terminals, screws used for termination of wiring to be suitable for either copper or aluminum conductors.

1.15 MANUFACTURERS AND CSA LABELS

.1 Visible and legible after equipment is installed.

1.16 WARNING SIGNS

.1 Provide warning signs as specified and to meet requirements of Electrical Inspection Department.

.2 Treated polyethylene plastic or coated rust free aluminum signs, minimum 180 x 250 mm.

1.17 MOUNTING HEIGHTS

.1 Mounting height of equipment is from finished floor to centreline of equipment unless specified or indicated otherwise.

.2 If mounting height of equipment is not indicated verify before proceeding with installation.

.3 Install electrical equipment at the following heights unless indicated otherwise.
.1 Panelboards: as required by the code or as indicated.

1.18 PROTECTION

.1 Protect exposed live equipment during construction for personnel safety.

.2 Shield and mark live parts "LIVE 120 VOLTS", or with appropriate voltage in English.

1.19 LOAD BALANCE

.1 Measure phase current to panelboards with normal loads operating at time of acceptance. Adjust branch circuit connections as required to obtain best balance of current between phases and record changes.

.2 Measure phase voltages at loads and adjust transformer taps to within 2% of rated voltage of equipment.

1.20 CONDUIT AND CABLE INSTALLATION

.1 Install conduit and sleeves prior to pouring of concrete. Sleeves through concrete: plastic, sized for free passage of conduit, and protruding 50 mm.

.2 If plastic sleeves are used in fire rated walls or floors, remove before conduit installation.

.3 Arrange and pay for holes through exterior walls; provide flashings and make weatherproof.

.4 Install conduits to be embedded or plastered over, neatly and close to the building or structure so furring can be kept to a minimum.

1.21 TESTS

.1 Conduct and pay for tests of the following:
.1 Power distribution system including phasing, voltage, grounding and load balancing.
.2 Circuits originating from branch distribution panels.
.3 Motors, heaters and associated control equipment including sequenced operation of systems where applicable.

.2 Furnish manufacturer's, certificate or letter confirming that entire installation as it pertains to each system has been installed to manufacturers instructions.

.3 Insulation Resistance Testing:
.1 Megger circuits, feeders and equipment up to 350 V with 500 V instrument.
.2 Megger 350-600 V circuits, feeders and equipment with a 1000 V instrument.
.3 Check resistance to ground before energizing.
.4 Provide a type written tabular report indicating test results.

.4 Provide a type written tabular report indicating the normal field measured load current for all motors, indicating the motor circuit protector trip setting or fuse type/rating, the overload heater element sizes and/or settings. Indicate the motor nameplate current.

.5 Advise the Engineer of dates when testing will take place. Provide five (5) days notice of such tests.

.6 Provide instruments, meters, equipment and personnel required to conduct tests during and at conclusion of project.

.7 Submit test results for the Engineer's review and approval.

1.22 CO-ORDINATION OF PROTECTIVE DEVICES

.1 Confirm circuit protective devices such as overcurrent trips, relays and fuses are installed to required values and settings and in accordance with the Canadian Electrical Code. Obtain motor data from the equipment supplier.

1.23 PROCESS EQUIPMENT PACKAGES

.1 Connection details and requirements for interwiring between process equipment packages specified under other Divisions and supplied by the Owner are the requirement of the Contractor.

.2 Refer to manufacturer's shop drawings for connection details and recommended installation details.

.3 Provide all cable, conduit, cable channel/trough, supports and miscellaneous hardware as per the requirements of this specification.

1.24 RECORD DRAWINGS

.1 Record Drawings:
- .1 After a award of Contract, the Engineer will provide a set of full-sized drawings for purpose of maintaining record drawings. Accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by the Engineer.
- .2 Identify drawings as "Project Record Copy". Maintain in new condition and make available for inspection on site by the Engineer.
- .3 On completion of Work and prior to final inspection, submit record documents to the Engineer.
- .4 Refer to Section 01 10 00 for more details.

1.25 CLEANING

.1 Do final cleaning in accordance with Section 01 10 00.

.2 Clean the interior of all cabinets and control equipment.

1.26 WASTE MANAGEMENT AND DISPOSAL

.1 Remove from site and dispose of all debris and waste materials at appropriate disposal/recycling facilities.

.2 Separate and recycle waste materials in accordance with applicable Construction/Demolition Waste Management And Disposal Regulations.

.3 Refer to Section 01 10 00 for additional requirements for disposal and recycling.

END OF SECTION

PART 1 GENERAL

1.01 REFERENCES

.1 CAN/CSA C22.2 No. 65-2025, Wire Connectors (Tri-National standard, with UL 486A-486B and NMX-J-543-ANCE-03) (Tri-National standard, with UL 486A-486B and NMX-J-543-ANCE-03).

1.02 PRODUCT DATA

.1 Submit product data in accordance with Section 01 10 00.

PART 2 PRODUCTS

2.01 MATERIALS

.1 Pressure type wire connectors: to CAN/CSA C22.2 No. 65, with current carrying parts of copper sized to fit copper conductors as required.

.2 Fixture type splicing connectors: to CAN/CSA C22.2 No. 65, with current carrying parts of copper sized to fit copper conductors 10 AWG or less.

.3 Use wire connectors rated for the operating voltage indicated.

PART 3 EXECUTION

3.01 INSTALLATION

.1 Make connections and terminations electrically and mechanically secure. Sizes of connectors to be per manufacturer's recommendations for various sizes and combinations of wire sizes.

.2 Remove insulation from ends of conductors and:

.1 Install mechanical pressure type connectors and tighten screws with appropriate compression tool recommended by manufacturer. Installation shall meet secureness tests in accordance with CAN/CSA C22.2 No. 65.

.2 Install fixture type connectors and tighten. Replace insulating cap.

END OF SECTION

PART 1 GENERAL

1.01 REFERENCES

.1 CSA C22.2 No. 0.3-09(R2023), Test Methods for Electrical Wires and Cables.

.2 CSA C22.1-24, Canadian Electrical Code, Part 1, safety standard for electrical installations.

1.02 PRODUCT DATA

.1 Submit product data in accordance with Section 01 10 00.

PART 2 PRODUCTS

2.01 POWER WIRES

.1 Conductors: soft drawn, stranded, copper (of 98% conductivity). Minimum size: 12 AWG.

.2 Copper conductors: size as indicated, with 600 V insulation of chemically cross-linked thermosetting polyethylene material rated RW90-XLPE.

.3 Copper conductors: size as indicated, with 1000V insulation of chemically cross-linked thermosetting polyethylene material rated RWU90.

.4 Colour code wiring in accordance with the Canadian Electrical Code.

2.02 CONTROL WIRES

.1 Digital Circuits: stranded copper, minimum size #14 AWG with 600 volt chemically cross-linked thermosetting polyethylene material rated RW90.

.2 Analog Circuits: tinned stranded copper, minimum size #16 AWG with individually twisted shielded pairs and minimum 300 volt chemically cross-linked thermosetting polyethylene material rated RW90.

PART 3 EXECUTION

3.01 INSTALLATION OF BUILDING WIRES AND CONTROL WIRES

.1 Do Work in accordance with CSA C22.1.

.2 Install wiring as follows:
  .1 In conduit systems in accordance with Section 26 05 34.

3.02 TESTING

.1 Test wiring in accordance with CSA C22.2 No. 0.3.

END OF SECTION

1 GENERAL

1.01 REFERENCES

.1 IEEE 837-2024, Qualifying Permanent Connections Used in Substation Grounding.

1.02 PRODUCT DATA

.1 Submit product data in accordance with Section 01 10 00.

2 PRODUCTS

2.01 EQUIPMENT

.1 Direct buried grounding conductors: bare stranded copper of minimum 98% conductivity, untinned, soft annealed, size as indicated.

.2 Insulated grounding and bonding conductors: soft drawn, stranded copper of minimum 98% conductivity, type RW90 (green coloured insulation).

.3 Non-corroding accessories necessary for grounding system, type, size, material as indicated, including but not necessarily limited to:
- .1 Grounding and bonding bushings.
- .2 Protective type clamps.
- .3 Bolted type conductor connectors.
- .4 Thermit welded type conductor connectors.
- .5 Bonding jumpers, straps.
- .6 Pressure wire connectors.
- .7 Copper crimp type compression connectors.

.4 Rod electrodes, copper clad steel, 21mm diameter, 3m long.

2.02 MANUFACTURERS

.1 Acceptable Manufacturers: FCI-Burndy, Erico, Thomas & Betts, Ilsco.

3 EXECUTION*-

3.01 INSTALLATION GENERAL

.1 Install complete permanent, continuous, system and circuit, equipment, grounding systems including conductors, connectors, accessories as indicated to conform to requirements of local authority having jurisdiction over installation.

.2 Install connectors in accordance with manufacturer's instructions.

.3 Protect exposed grounding conductors from mechanical injury.

.4 Use mechanical connectors for grounding connections to equipment provided with lugs.

.5 Soldered joints not permitted.

.6 Provide insulated copper bonding conductor in all conduit runs. Minimum Size #14AWG or as indicated in Table No. 16 of the CEC, whichever is larger.

.7 Make grounding connections in radial configuration only, with connections terminating at single grounding point. Avoid loop connections.

.8 Make buried connections, and connections to electrodes, using inspectable copper crimp type compression connectors.

3.02 ELECTRODES

.1 Bond separate electrodes together.

.2 Use direct buried grounding conductors, size as indicated, for connections to electrodes.

3.03 SYSTEM AND CIRCUIT GROUNDING

.1 Install system and circuit grounding connections to neutral of secondary 120/208 V.

3.04 EQUIPMENT GROUNDING

.1 Install grounding connections to typical equipment included in, but not necessarily limited to the following list: service equipment, transformers, instrumentation, pipe systems, frames of motors, starters, control panels and distribution panels.

3.05 FIELD QUALITY CONTROL

.1 Perform tests in accordance with Section 26 05 00.

.2 Perform ground continuity and resistance tests using method appropriate to site conditions and to approval of Engineer and local authority having jurisdiction over installation.

.3 Perform tests before energizing electrical system.

.4 Disconnect ground fault protection during tests.

END OF SECTION

PART 1 GENERAL

1.01 NOT USE

.1 Not applicable.

PART 2 PRODUCT

2.01 SUPPORT CHANNELS

.1 U shape, size 41 mm x 41 mm, 2.7 mm thick, surface mounted, suspended or set in poured concrete walls and ceilings unless otherwise indicated.

.2 Standard rolled structural steel shapes and plates or prefabricated structural systems.

.3 Unless otherwise indicated, use 316 stainless steel.

2.02 CABLE TIES

.1 Nylon flame retardant, low smoke cable tie, size as required.

.2 Nylon flame retardant, low smoke cable tie mounting bracket. Mechanical fastening type only; adhesive mounts are not acceptable.

.3 The use of cable ties for supporting purposes is not permitted. Cable ties can only be used to hold various system cables in place.

PART 3 EXECUTION

3.01 INSTALLATION

.1 Secure equipment to solid masonry, tile and plaster surfaces with lead anchors or nylon shields.

.2 Secure equipment to poured concrete with expandable inserts.

.3 Secure equipment to hollow masonry walls with stainless steel toggle bolts.

.4 Support equipment, conduit or cables using clips, spring loaded bolts, cable clamps designed as accessories to basic channel members.

.5 Fasten exposed conduit or cables to building construction or support system using straps.
- .1 One-hole straps to secure surface conduits and cables 50 mm and smaller.
- .2 Two-hole straps for conduits and cables larger than 50 mm.
- .3 Conduit straps to match conduits in material and finish. Cable straps to be stainless steel.

.6 For surface mounting of two (2) or more conduits and cable, use support channels spaced in accordance with the Canadian Electrical Code (maximum 1.5m spacing).

.7 Provide metal brackets, frames, hangers, clamps and related types of support structures where indicated or as required to support conduit and cable runs.

.8 Provide adequate support for conduits and cables dropped vertically to equipment where there is no wall support.

.9 Do not use wire lashing or perforated strap to support or secure conduits or cables.

.10 Do not use supports or equipment installed for other trades for conduit or cable support except with permission of other trade and approval of the Engineer.

.11 Provide fastenings and supports as required for each type of equipment, cables and conduits, and in accordance with manufacturer's installation recommendations.

.12 Provide isolation pads between dis-similar metals where required.

.13 Coordinate the location of electrical support systems with other trades before installation.

END OF SECTION

PART 1 GENERAL

1.01 SHOP DRAWINGS AND PRODUCT DATA

.1 Submit shop drawings and product data for cabinets in accordance with Section 01 10 00.

PART 2 PRODUCTS

2.01 CABINETS, JUNCTION AND PULL BOXES

.1 General: Provide outlet, tap, junction and pull boxes with. Provide junction and pull boxes longer than 500mm in any dimension complete with continuously hinged cover.

.2 Tap, Junction and Pull Boxes: Provide boxes constructed of welded and galvanized sheet steel, of sizes required by Canadian Electrical Code. Use 14 USS gauge metal on boxes with no dimension of 600 mm or more, except use 10-gauge boxes with any dimension of 900 mm or more.

.3 Watertight Boxes: In damp, wet and outdoor locations, provide NEMA Type 4X water-tight boxes with clamped, threaded or bolted covers. Boxes to be stainless steel (316SS) or copper free cast aluminum boxes.

.4 Hazardous Rated Boxes:
- .1 Boxes must be suitable for the hazardous classification as noted on the drawings and be corrosion resistant.
- .2 Boxes to be copper free, die cast aluminum boxes with threaded connections for use with threaded aluminum conduit.
- .3 Provide boxes complete with integral terminal blocks where specified. Quantity, size and rating of terminal blocks to match application. Terminal blocks to be DIN-rail mounted.
- .4 Boxes to be weatherproof.

.5 Junction boxes for intrinsically safe circuits
- .1 Boxes to be NEMA 4X (316 stainless steel) or hazardous rated as specified in 2.1.4.
- .2 Pre-configured enclosure with DIN-rail mounted terminal blocks.
- .3 Terminal blocks to be coloured blue.
- .4 Quantity, size and rating of terminal blocks to match application.

.6 Provide outdoor enclosures that house electrical components complete with padlocking attachment.

.7 All hazardous rated, intrinsically safe and NEMA 4X junction and pull boxes shall have corrosion resistant stainless steel external hardware (screws, latches, mounting feet, etc.).

PART 3 EXECUTION

3.01 JUNCTION AND PULL BOX INSTALLATION

.1 Install junction and pull boxes in inconspicuous but accessible locations.

.2 Mount junction and pull boxes where noted on the Drawings and as described herein.

.3 Provide all required mounting hardware.

3.02 IDENTIFICATION

.1 Provide equipment identification in accordance with Section 26 05 00.

END OF SECTION

PART 1 GENERAL

1.01 REFERENCES

.1 CSA C22.1-24, Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.

1.02 PRODUCT DATA

.1 Submit product data in accordance with Section 01 10 00.

PART 2 PRODUCTS

2.01 OUTLET AND CONDUIT BOXES GENERAL

.1 Size boxes in accordance with CSA C22.1.

.2 102 mm square or larger outlet boxes as required for special devices.

.3 Blank cover plates for boxes without wiring devices.

.4 Cast FS or FD copper free aluminum boxes with factory-threaded hubs and mounting feet for surface wiring of switches and receptacles.

2.02 FITTINGS- GENERAL

.1 Bushing and connectors with nylon insulated throats.

.2 Knock-out fillers to prevent entry of debris.

.3 Conduit outlet bodies for conduit up to 32 mm and pull boxes for larger conduits.

PART 3 EXECUTION

3.01 INSTALLATION

.1 Support boxes independently of connecting conduits.

.2 Fill boxes with paper, sponges or foam or similar approved material to prevent entry of debris during construction. Remove upon completion of work.

.3 Provide correct size of opening in boxes for conduit and cable connections. Reducing washers not allowed.

END OF SECTION

PART 1 GENERAL

1.01 REFERENCES

.1 CSA C22.2 No. 211.2-06(R2021), Rigid PVC Conduit.

.2 CSA C22.2 No. 56-17(R2022), Flexible Metal Conduit and Liquid - Tight Flexible Metal Conduit.

.3 CSA C22.2 No. 45.2-08(R2023), Electrical Rigid Metal Conduit - Aluminum, Red Brass and Stainless Steel.

1.02 LOCATION OF CONDUIT

.1 Drawings do not indicate all conduit runs. Those indicated are in diagrammatic form only.

1.03 PRODUCT DATA

.1 Submit product data in accordance with Section 01 10 00.

PART 2 PRODUCTS

2.01 CONDUITS

.1 Rigid PVC conduit, fittings and connectors to CSA C22.2 No. 211.2 for underground services or as specified on the drawings.

.2 Liquid-tight flexible metal conduit, fittings and connectors to CSA C22.2 No. 56.

.3 Rigid aluminum conduit, fittings and connectors to CSA C22.2 No. 45.2.

2.02 CONDUIT FASTENINGS

.1 One hole cast aluminum straps to secure surface conduits 50 mm and smaller. Two hole cast aluminum straps for conduits larger than 50 mm.

.2 Use stainless steel "P" clamps to secure conduits to channels.

.3 Refer to specification Section 26 05 29 for surface support systems for conduits.

2.03 CONDUIT FITTINGS

.1 Fittings: manufactured for use with conduit specified. Coating: same as conduit.

.2 Factory "ells" where 90° bends are required for 27mm and larger conduits.

.3 Watertight connectors for liquid tight flexible conduit.

.4 Raintight connectors for vertical connections to enclosures.

.5 Cast type EYS and EYD type sealing fittings with factory threaded hubs and rated for installation

in the hazardous areas as noted on the drawings.

.1 Acceptable Manufacturers: Appleton, Crouse-Hinds or Killark.

2.04 EXPANSION FITTINGS FOR RIGID CONDUIT

.1 Weatherproof expansion fittings with internal bonding assembly suitable for 100mm linear expansion as required.

.2 Watertight expansion fittings with internal bonding jumper suitable for linear expansion and 19mm deflection in all directions.

.3 Provide expansion fittings at exit point (above grade) of all underground services.

2.05 FISH CORD

.1 Polypropylene.

PART 3 EXECUTION

3.01 INSTALLATION

.1 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.

.2 Use rigid aluminum threaded conduit unless otherwise indicated.

.3 Use rigid PVC conduit underground.

.4 Use liquid tight, flexible metal conduit for final connection to instrumentation and vibrating equipment (motors, valves, etc.) located in non-hazardous areas. Minimum length to be 300mm and the maximum length will be 500mm before converting to rigid conduit.

.5 Use flexible couplings (explosion-proof, watertight, Appleton Type EXGJH or EXLK or approved equivalent) for final connection to vibrating equipment (motors, valves, etc.) and instrumentation located in hazardous areas.

.6 Minimum conduit size: 21 mm unless indicated otherwise.

.7 Bend conduit cold. Replace conduit if kinked or flattened more than 1/10th of its original diameter.

.8 Mechanically bend steel conduit over 19 mm dia.

.9 Field threads on rigid conduit must be of sufficient length to draw conduits up tight.

.10 Install fish cord in empty conduits.

.11 Where conduits become blocked, remove and replace blocked section. Do not use liquids to clean out conduits.

.12 Dry conduits out before installing wire.

.13 Rigid PVC conduit to be FT4 rated.

.14 Provide minimum 300 mm spacing between instrumentation/control conduits and 600V power conduits. Where possible, instrumentation/control conduits to cross at right angles to 600V power conduits.

.15 Seal conduit sleeves penetrating into the wet well using duxseal at the termination junction box.

.16 Install conduit sealing fittings in hazardous areas in accordance with Canadian Electrical Code requirements. Fill with compound. All conduit leaving a hazardous area shall be sealed using an approved sealing fitting when conduit is continuous.

.17 Drawings do not show all required unions. Install unions to facilitate removal of equipment. Where seals are installed, install unions between the equipment and the seal.

.18 Install conduits to prevent low pockets where moisture can accumulate. Install a combination breather and drain fitting at the lowest point of each above-grade conduit system, which is unbroken by sealing fittings on other obstructions.

.19 For below grade rigid aluminum conduit, supply and install corrosion protection over conduit in accordance with the manufacturer's instructions.

3.02 SURFACE CONDUITS

.1 Run parallel or perpendicular to structure lines.

.2 Group conduits wherever possible on surface channels.

.3 Do not pass conduits through structural members except as indicated.

.4 Provide offsets for conduits entering surface mounted enclosures and device boxes and fittings.

3.03 CONCEALED CONDUITS

.1 Run parallel or perpendicular to structure lines.

.2 Slope conduits to provide drainage.

END OF SECTION

PART 1 GENERAL

1.01 RELATED WORK

.1 Direct Buried Underground Conduits: Section 33 65 76

PART 2 PRODUCTS

2.01 CABLE PROTECTION

.1 Protection materials and methods as indicated on drawings.

PART 3 EXECUTION

3.01 CABLE INSTALLATION IN DUCTS

.1 Install cables as indicated in ducts.

.2 Do not pull spliced cables inside ducts.

.3 Install multiple cables in duct simultaneously.

.4 Use CSA approved lubricants of type compatible with conductors and cable jackets to reduce pulling tension.

.5 To facilitate matching of colour coded multi-conductor control cables reel off in same direction during installation.

.6 Underground splices are not permitted.

3.02 FIELD QUALITY CONTROL

.1 Perform tests in accordance with Section 26 05 00.

.2 Perform tests using qualified personnel. Provide necessary instruments and equipment.

.3 Check phase rotation and identify each phase conductor of each feeder.

.4 Check each feeder for continuity, short circuits and grounds.

.5 Remove and replace entire length of cable if cable fails to meet any of test criteria.

END OF SECTION

PART 1 GENERAL

1.01 REFERENCES

.1 CAN/CSA C22.2 No. 248.4-00 (R2024), Low-Voltage Fuses - Part 4: Class CC Fuses (Tri-National Standard, with UL 248-4 and NMX-J-009/248/4-2000-ANCE).

.2 CSA C22.2 No. 248.8-11 (R2020), Low-Voltage Fuses - Part 8: Class J fuses (Tri-National Standard, with UL 248-8 and NMX-J-009/248/8-ANCE)

1.02 SHOP DRAWINGS AND PRODUCT DATA

.1 Submit shop drawings and product data in accordance with Section 01 10 00.

1.03 MAINTENANCE MATERIALS

.1 Provide six (6) spare fuses of each type and size.

1.04 DELIVERY AND STORAGE

.1 Ship fuses in original containers.

.2 Do not ship fuses installed.

.3 Store fuses in original containers in moisture free location.

PART 2 PRODUCTS

2.01 FUSES GENERAL

.1 Fuses: provide the product of a single manufacturer throughout the Work.

.2 Low voltage fuses, types as specified, must be CSA certified.

2.02 FUSE TYPES

.1 All fuses must be high rupturing capacity (HRC) type, minimum 200kA interrupting rating (momentary RMS symmetrical).

.2 Class J:
- .1 Fuses rated 1 to 600 amperes, 600 Vac, must be CSA certified Class J in accordance with Standard C22.2 No. 248.8.
- .2 Where a time delay characteristic is required, fuses must carry 500% of their ampere rating for not less than 10 seconds and be clearly labeled "time delay".

.3 Class CC:
- .1 Fuses rated 1 to 30 amperes, 600 Vac, must be CSA certified Class CC in accordance with CAN/CSA C22.2 No. 248.4.
- .2 Where a time delay characteristic is required, fuses shall carry 200% of their ampere

rating for not less than 12 seconds.

.4 Standard of acceptance:
- .1 Class J: Merson type A4J (non-time delay) and AJT (time delay).
- .2 Class CC: Mersen type ATMR (non-time delay) and ATDR (time delay) and ATQR (time delay).

.5 Acceptable manufacturers:
- .1 Mersen.
- .2 Bussmann.
- .3 Littlefuse.

PART 3 EXECUTION

3.01 INSTALLATION

.1 Install fuses in mounting devices immediately before energizing circuit.

.2 Confirm the correct fuses are fitted to physically matched mounting devices.

.3 Confirm the correct fuses fitted to assigned electrical circuit.

.4 Confirm fuse size is correctly identified on equipment.

.5 For feeder circuit fuses, use fast acting Class J fuses unless otherwise noted.

.6 For full voltage non-reversing motor starters, full voltage reversing motor starters, full voltage multi-speed motor starters and transformers, use time delay Class J fuses.

.7 For 600Vac control circuits, use Class CC type fuses. Use time delay Class CC fuses upstream of control transformers and solenoids.

END OF SECTION

PART 1 GENERAL

1.01 SHOP DRAWINGS AND PRODUCT DATA

.1 Submit shop drawings and product data in accordance with Section 01 10 00.

PART 2 PRODUCTS

2.01 BREAKERS GENERAL

.1 Bolt-on moulded case circuit breaker: quick- make, quick-break type, for manual and automatic operation with temperature compensation for 40°C ambient.

.2 Common-trip breakers: with single handle for multi-pole applications.

.3 Magnetic instantaneous trip elements in circuit breakers to operate only when value of current reaches setting. Trip settings on breakers with adjustable trips to range from 5-10 times current rating.

.4 Circuit breakers with interchangeable trips as indicated.

.5 Circuit breakers to have interrupting rating (momentary RMS symmetrical) as indicated.

2.02 THERMAL MAGNETIC BREAKERS

.1 Moulded case circuit breaker to operate automatically by means of thermal and magnetic tripping devices to provide inverse time current tripping and instantaneous tripping for short circuit protection.

.2 Provide ground fault interrupter type for circuits so marked.

2.03 OPTIONS

.1 Suitable for service entrance where specified.

2.04 MANUFACTURERS

.1 Acceptable manufacturers:
- .1 Eaton
- .2 Siemens
- .3 Schneider Electric (Square D)

PART 3 EXECUTION

3.01 INSTALLATION

.1 Install circuit breakers as indicated.

END OF SECTION