SPECIFICATION
FOR

Greenfield Elementary School
IT Consolidation
Summerside, Prince County, PEI

Prepared for:

PEI Department of Transportation, Infrastructure and Energy

Prepared by: Date: December, 2015

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TABLE OF CONTENTS

Specifications:

Section		Title	Pages
AA	-	Site visit	1
A	-	Invitation to Bidders - Tender	1
B	-	Instructions to Bidders	9
C	-	General Conditions	16
D	-	Form of Agreement	2
E	-	Contract Tender	3
G	-	Safety Requirements(Pre-Construction Safety Check List)	10
1A	-	General Instructions	7
1C	-	Cutting & Patching	1
2A	-	Demolition	2
9C	-	Acoustic Ceiling Tile	3
9E	-	Gypsum Board	3
9O	-	Painting	4
Division 01 – General Requirements			
01005	-	General Instructions	3
01010	-	Summary	2
01340	-	Shop Drawings, Product Data and Samples	3
01500	-	Temporary Facilities	1
01561	-	Environmental Protection	1
01600	-	Material and Equipment	3
01710	-	Cleaning	2
01720	-	Project Record Documents	1
01730	-	Operation and Maintenance Manual	2
Division 16 - Electrical			
16010	-	Electrical – General Provisions	12
16111	-	Conduits, Conduit Fastenings and Conduit Fittings	4
16122	-	Wires and Cables 0-1000V	3
16131	-	Junction and Pull Boxes	1
16132	-	Outlet Boxes, Conduit Boxes and Fittings	3
16141	-	Wiring Devices	3
16151	-	Wire and Box Connectors – 0-1000 V	2
16191	-	Fastenings and Supports	2
16440	-	Disconnect Switches – Non-Fused up to 1000V	2
16450	-	Grounding – Secondary	3
16477	-	Moulded Case Circuit Breakers	2
16505	-	Lighting Equipment	2
16506	-	Luminaire Schedule	2

Drawings:

E1 of 3	-	Level 1 & 2 Communications Plans
E2 of 3	-	Enlarged Communications Rooms and Details
E3 of 3	-	Communications Details and Specifications
M1 of 1	-	Main Floor and Second Floor Layouts and Details

End

1. GENERAL

All bidders submitting tenders for this work shall first examine the site and all conditions thereon and/or therein. All tenders shall take into consideration all such conditions as may affect the work under this contract, no claims for extras resulting from conditions existing at the time of tender will be accepted by the Owner.

2. SITE VISIT

There will be a recommended pre-bidders meeting held on Wednesday, December 23rd, 2015 at 12:30am.

End

Sealed tenders will be received at the offices of the PEI Government Department of Transportation, Infrastructure and Energy at 11 Kent Street, Third Floor, Jones Building, Charlottetown, PEI until 2:00 p.m. local time, **Thursday, January 7th, 2016** for:

"Greenfield Elementary School IT Consolidation
Summerside, Prince County, PEI"

This project includes but not limited to demolition, modification to existing areas to accommodate new Communication Rooms which includes steel stud walls, drywall, t-bar ceilings, firestopping, split AC units, ventilation, lighting, power outlets, data wiring, patch panels, terminations, grounding, cable tray and installation of owner supplied equipment including racks and fiber optic cables.

Drawings and Specifications may be obtained from the offices of the PEI Government Department of Transportation, Infrastructure and Energy at 11 Kent Street, Third Floor, Jones Building, Charlottetown, PEI.

Refer to Instructions to Bidders for Bid Security and Contract Security requirements.

Tenders will be opened at the above advertised time and place and Bidders are invited to be present at the opening. Lowest or any Tender will not necessarily be accepted.

Any additional information can be obtained by contacting Regan MacLellan**, at 902-368-4831 or fax 902-569-0590**.

End

1. GENERAL

a) The Tender Documents including General Conditions of Contract, the Instructions to Tenderers, Specifications, Tender Form and Drawings are all complementary and shall be read together.

b) Each Tenderer shall examine the Tender Documents as soon as possible after receipt thereof and should he or she discover any errors or omissions therein, he or she shall notify Department of Transportation, Infrastructure and Energy as soon as possible and at least Seven (7) days prior to the date set for receiving tenders so that further instructions and/or drawings may be issued to all Tenderers before the date set for receiving tenders.

2. ADDENDA

a) Tenders may, during the tendering period, be advised by addenda of required additions to, deletions from, or alterations to the requirements of the tender Documents. All such changes shall become an integral part of the Tender Documents and shall be allowed for in arriving at the fixed sum tender figure.

3. BID AND CONTRACT SECURITY

BID SECURITY

(a) Each tender submitted shall be accompanied by the following security:

.1 General Contract Tender less than Three Million ($3,000,000.00) Dollars, including mechanical and electrical subcontract values:

A Bid Bond equal to at least ten per cent (10%) of the tender amount and a Letter of Surety from a bonding company guaranteeing to supply a Performance Bond in the amount of fifty per cent (50%) of the total contract amount.

Or

A Security Deposit equal to at least ten per cent (10%) of the tender amount.

.2 General Contract Tender more than Three Million ($3,000,000.00) Dollars, including mechanical and electrical subcontract values:

A Bid Bond equal to at least ten per cent (10%) of the tender amount and a Letter of Surety from a bonding company guaranteeing to supply a Performance Bond in the amount of fifty per cent (50%) of the total contract amount and a Labour and Materials Payment Bond in the amount of fifty per cent (50%) of the total contract amount.

(b) .1 All Bonds and Letters of Surety, provided by General Contractors, made payable to the Owner.

.2 Bonds and Letters of Surety supplied by the General Contractor to the Owner shall be from a recognized surety company, satisfactory to, and approved by the Owner.

(c) .1 Security Deposits, provided by General Contractors, must be in the form of a Certified Cheque or Bank Draft drawn on a Bank to which the Bank Act applies or a Credit Union, payable to the Owner.

Or

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

(a) Payable to the bearer, or

(b) Accompanied by a duly executed instrument of transfer to The Owner, in the form prescribed by the Domestic Bonds of Canada Regulations, or

(c) Negotiated as to principle or as to principle and interest in the name of the Owner, pursuant to the Domestic Bonds of Canada Regulations.

(d) .1 Security deposits submitted by subcontractors, to General Contractors, shall be in a form satisfactory to the General Contractor.

CONTRACT SECURITY

(a) Upon award of a contract the Contractor is to provide the following contract security:

.1 General Contract Tender less than Three Million ($3,000,000.00) Dollars, including mechanical and electrical subcontract values:

A Performance Bond in the amount of fifty per cent (50%) of the contract amount.

Or

A Security Deposit in an amount equal to at least ten per cent (10%) of the contract amount.

.2 General Contract Tender more than Three Million ($3,000,000.00) Dollars, including mechanical and electrical subcontract values:

A Performance Bond and a Labour and Materials Payment Bond, each in the amount of fifty per cent (50%) of the contract amount.

(b) .1 All bonds, provided by General Contractors, are to be made payable to the Owner.

.2 Bonds shall be from a recognized surety company, satisfactory, and approved by the Owner.

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

(c) .1 Security Deposits, provided by General Contractors, must be in the form of a Certified Cheque or Bank Draft drawn on a Bank to which the Bank Act applies or a Credit Union, payable to the Owner.

Or

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

(a) Payable to the bearer, or

(b) Accompanied by a duly executed instrument of transfer to the Owner, in the form prescribed by the Domestic Bonds of Canada Regulations, or

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

(d) Contract security shall be provided at the expense of the Contractor, bonds shall be provided by an established surety company satisfactory to, and approved by the Owner. Certified Cheques or Bank Drafts shall be drawn on an account with a recognized financial institution.

(e) Contract security submitted by subcontractors, to General Contractors, shall be in a form satisfactory to the General Contractor.

4. CONSTRUCTION SCHEDULE

.1 Work is to begin immediately after contract award.

.2 The completion date for this project shall be **March 13th, 2016**.

.3 Contractor to provide a construction schedule, safety policy and proof of

insurance prior to starting work.

.4 **The contractor is expected to work typically between the hours of 3:30pm and 11:30pm Monday thru Friday. Some work may be done during the weekends but will be at the discretion of the School and will not be determined until after the project is awarded.**

5. MATERIALS & EQUALS

1) Materials, plant and equipment are described and named specifically in the Specifications ONLY to describe types and qualities of materials, plant and equipment required.

2) Suppliers or manufacturers wishing to have their material, plant or equipment approved as an equal shall submit complete technical information to the Consultant seven (7) days prior to the receipt of tenders. The Consultant shall review the material submitted and notify all prospective bidders of any materials, plant or equipment that has been accepted as equal.

3) All bidders submitting a tender shall include in their tender amount only materials, plant or equipment as specified or that have been approved as an equal.

6. ALTERNATE PRODUCTS

.1 Approval may be given by the Consultant after the award of the Contract, on application in writing from the contractor, for the substitution of a similar material, item or plant or equipment bearing another brand name or of other manufacture, subject to the following:

a. Any top quality material or item of plant and equipment proposed as a substitute by the Contractor and considered by the Engineer to be of equal quality, value and price to that specified and suitable for the purpose intended, may be accepted as a substitute.

b. Materials and items of plant and equipment which the Contractor proposes as substitutes and which are considered by the Engineer to be suitable for the purpose intended, but which are in his or her opinion of lesser value, quality and price than those specified will only be accepted as substitutes if reasonable credits are allowed for their use.

c. Request for alternates must be made by the Contractor well in advance of the time the item is to be ordered. The request shall be accompanied by sufficient information in the form of manufacturers literature, samples, and other data to permit proper investigation of the substitutes proposed.

.2 Bidders are requested to include information on alternates as an appendix to this tender. The information should indicate the proposed credit or

extra, to the tender amount, and include sufficient data to allow the Consultant to evaluate the item proposed as an alternate.

7. SUPERVISION AND COORDINATION

.1 The Contractor shall be responsible for supervising and coordinating all aspects of the work.

.2 The Contractor shall include in his or her quotation all cost relative to supervising sub-contractors, including those submitting tenders directly to the Owner, which form a portion of the complete project and shall be assigned to the successful General Contractor.

8. RESPONSIBILITY

.1 The Contractor shall be responsible to be fully familiar with the complete documents and shall include in his or her tender those items which are named, implied, or traditionally a part of the general contract work.

9. DEFINITIONS

In this specification the following terms shall have the definitions noted below:

OWNER: P.E.I. DEPT. OF Transportation, Infrastructure and Energy
CONSULTANT: Richardson Associates 1993 Limited

10. SITE INSPECTOR

.1 There will be an Inspector representing the Department of Transportation, Infrastructure and Energy, Province of P.E.I.. No work is to be covered without having received approval from the Inspector. The Inspector will have the authority to cause any part of the work to cease, should, in his or her opinion, there be cause to do so.

This work shall be examined by the Department and approval granted to resume when a satisfactory solution has been found.

.2 The inspector does not have authority to authorize changes to work. He or she shall confer with the Consultant or Engineer who, if necessary will authorize any change.

.3 The fact that the inspector does not reject any work shall not remove the responsibility for completing all work as specified; from the Contractor.

11. OWNERS RIGHT TO TERMINATE CONTRACT

The Owner reserves the right to remove the contractor from the site if the work is not completed as specified in Paragraph 4. If the contractor is removed, the Owner shall have the work completed and deduct the cost of this work from the amount owing the contractor and his or her bid deposit.

12. SUB-CONTRACTORS

.1 The bidder shall include with his or her tender, in the space designated for that purpose, the names of each Sub-Contractor included in his or her tender, reserving however, the right to substitute other sub-contractors for any trade in the event that the listed sub-contractor declares bankruptcy after the date of close of the tenders. Any such substitution shall be subject to the approval of the Owner and contingent on evidence of bankruptcy satisfactory to the Owner.

.2 "OWN FORCES" is acceptable only where the bidder can demonstrate that he or she has the resources to carry out the work so designated. Bidders are required, if so requested, to provide information relevant to experience and personnel which will demonstrate to the satisfaction of the Owner that a Sub-Contractor is qualified to perform the work of a particular sub-contract.

.3 All Sub-Contractors are advised to become familiar with all Specifications and Drawings. The General Contractor shall ensure that all sub-trades understand their entire responsibilities in order to complete the project. Sub-trade work may appear in various sections of Specifications and on various drawings.

13. GUARANTEES

.1 The Contractor shall be required to guarantee the work of this Contract for a period of twelve months after the Owner's acceptance of the work, against improper or defective materials and workmanship, and shall repair and make good at his or her own expense any damage to the building and contents through any of the above causes during this period. Any contract omissions and/or deficiencies reported to the Contractor within twelve months after acceptance of the work shall be made good by the Contractor at his or her own expense.

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

14. REJECTION OF TENDERS

The Owner reserves the right to reject any and all tenders.

15. CONSULTANT’S INTERPRETATION

The Consultant's interpretation of plans and specifications shall be final. Should Contractor have any doubt as to interpretation, he or she shall refer to the Consultant for clarification before submitting his or her tender. No allowances or extras will be made for misinterpretation of plans and specifications by Contractor.

16. PERMITS, REGULATIONS AND TAXES

.1 All permits and fees required for the proper completion and inspection of the work herein specified will be paid for by the contractor. All applicable taxes shall be included in the tender price excluding the Harmonized Sales Tax. The Contractor, as per current Provincial Regulations, shall include on all invoices the Harmonized Sales Tax as an additional line item. This would be in addition to the tender amount which does not include HST.

.2 The work shall be completed to the satisfaction of the Consultant and local inspecting authorities.

.3 In the absence of any provisions contained herein, the applicable Provincial Codes or the National Building Code shall govern in that order.

.4 The latest edition of the Canadian Electrical Code shall govern all Electrical work, whether prewired and/or assembled remote from the site or not.

.5 All equipment supplied or installed shall be CSA approved for the intended use.

.6 All materials, components and equipment as well as construction methods shall comply with the latest edition of the National building Code and all other applicable codes or regulations.

.7 The latest edition of the P.E.I. Occupational Health and Safety Act and Regulations shall govern safe construction practices.

17. EXISTING CONDITIONS

.1 Bidders will be held to have examined the Tender Documents, to have visited the site and to have informed themselves as to existing conditions and limitations.

.2 If in the performance of the contract, subsurface or latent conditions at the site are found to be materially different from those indicated by the drawings and specifications, or unknown conditions not usually inherent in work of the character shown and specified, the attention of the Consultant shall be called immediately in writing to such conditions before they are disturbed. Upon such notice, or upon his or her own observation of such conditions, the Consultant shall promptly make such changes in the drawings and specifications as he or she finds necessary to conform to the different conditions and any increase or decrease in the cost shall be adjusted as provided under "Changes in the Work."

18. RECEIPT AND OPENING OF TENDERS

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

19. AWARD OF CONTRACT

.1 If the tender is accepted the Contract will be awarded as promptly after the opening of bids as is possible. The selection of the tender that is accepted shall be at the sole discretion of the Owner.

.2 Each bidder shall be prepared, if so requested by the Owner, to present evidence of his or her experience, qualifications and financial ability to carry out the terms of the contract.

20. TENDER SUBMISSION

.1 Tenders must be submitted on the form included with this specification. This form must be completely filled out in ink, or be typewritten with the signature in longhand. The completed forms shall be without interlineation, alteration or erasures.

.2 The tender, together with the Tender Security described in this section must be addressed and delivered in a sealed envelope marked "Tender" and bearing the name of the Contractor submitting the tender, together with identification indicating the name of the project.

.3 Tenders will be received at the place and time indicated in the tender call. Late tenders will not be accepted and will be returned unopened to the tenderer.

.4 Amendments to the submitted offer will be permitted if received in writing prior to Tender closing and if endorsed by the same party or parties who signed and sealed the offer. Amendments submitted by fax will be accepted, if received prior to tender closing. **(Fax (902) 569-0590)**.

.5 The receipt of addenda for the project shall be acknowledged by filling in the addendum number and date of issue for each addendum on the appropriate line in the tender form. These lines shall be initialled by the person signing the tender after they have been filled in.

.6 Any appendices to the tender form requesting information on suppliers, sub-contractors or alternate prices shall be filled in for the tender to be considered complete.

21. TAXES

All tenders submitted shall **exclude** the Harmonized Sales Tax.

22. CONFIDENTIALITY AND FREEDOM OF INFORMATION (Effective November 1,

2002)

.1 By submitting your bid, you agree to disclosure of the information supplied, subject to the provisions of the Freedom of Information and Protection of Privacy *(FOIPP)* Act.

.2 Anything submitted in your bid that you consider to be "confidential information" because of its proprietary nature should be marked as **"confidential"**, and will be subject to appropriate consideration under the *Freedom of Information and Protection of Privacy Act*.

.3 During the delivery and installation of goods and/or services, you may have access to confidential or personal information. Should this occur, you must ensure that such information is not released to any third party or unauthorized individual.

.4 Any information provided on this contract may be subject to release under the *Freedom of Information and Protection of Privacy Act*. You will be consulted prior to the release of any information.

End

1. DEFINITIONS

(a) The Contract Documents shall include Instructions to Tenderers, General Conditions, Supplementary General Conditions, Specifications, Drawings, Tender Form and the signed agreement.

(b) The Owner, the Contractor and the Consultant are those named as such in the Agreement and Specifications.

(c) The term "Subcontractor" includes only a person, firm or corporation having a contract for the execution of a part or parts of the work included in the Contract, and a person, firm and corporation furnishing material called for in the Contract and worked to a special design according to the Drawings or Specifications, but does not include one who merely furnishes material not so worked.

(d) The term "work" includes all labour, materials and services required, as shown or described in the contract documents, supplied and installed or erected complete at the place of building.

(e) The term "Other Contractor" means any person or firm or corporation employed by or having a contract directly or indirectly with the Owner otherwise than through the Contractor.

(f) The place of building is the designated site or location of the completed work.

(g) The law of the place of building shall govern the work.

(h) For the purpose of contract signing authority, the Director is the Director of the Public Works & Planning Division of the PEI Department of Transportation, Infrastructure and Energy.

2. DOCUMENTS

The contract documents shall be signed in duplicate by the Owner and Contractor. The Contract documents are complementary and what is called for by any one shall be as binding as if called for by all. The intention of the documents is to include all labour and materials reasonably necessary for the proper execution of the work. It is not intended however, that materials or work not covered by or properly inferable from any heading, section or trade in the Specifications shall be supplied unless shown on the drawings. Descriptions of materials or work in words which so applied have well known technical or trade meanings shall be held to refer to such recognized standards. Should the specification conflict with the drawings, the specifications shall govern. In the case of discrepancies between Drawings, those of larger scale, or if the scales are the same, those of later date shall govern.

All drawings and specifications shall be interpreted in conformity with the agreement and these General Conditions which shall govern.

3. DETAIL DRAWINGS & INSTRUCTIONS

The Consultant shall furnish as necessary for the execution of the work, additional instructions, by means of drawings or otherwise. All such additional instructions shall be consistent with the contract documents. The work shall be executed in conformity therewith and the Contractor shall do no work without such additional instructions. In giving such additional instructions, the Consultant shall have authority to make minor changes in the work, not inconsistent with the Contract.

If either the Contractor or the Consultant so request, they shall jointly prepare a schedule, subject to change from time to time in accordance with the progress of the work fixing the dates at which the various detail drawings will be required and the Consultant shall furnish them in accordance with this schedule, and on like request, a schedule shall be prepared, fixing the dates for the submission of shop drawings, for the beginning of manufacture and installation of materials and for the completion of the various parts of the work.

4. COPIES FURNISHED

The Consultant shall furnish to the Contractor, without charge, as many copies of all Drawings and Specifications as are reasonably necessary for the proper execution of the work.

5. SHOP DRAWINGS

The Contractor shall furnish to the Consultant, at proper times, all shop and setting drawings or diagrams which the Consultant may deem necessary in order to clarify the details of the work. The Contractor shall make any changes in such drawings or diagrams which the Consultant may require consistent with the Contract, and shall submit sufficient copies of the revised prints to the Consultant for approval - all but one of which shall be returned to the Contractor if approved by the Consultant. When submitting such shop and setting drawings, the Contractor shall notify the Consultant in writing of changes made therein from the Consultant's Drawings or Specification. The Consultant's approval of such drawings or of the revised drawings shall not relieve the Contractor from responsibility for errors made by the Contractor therein or for changes made from the Consultant's Drawings or Specifications not covered by the Contractor's written notification to the Consultant.

6. DRAWINGS AND SPECIFICATIONS ON THE WORK

The Contractor shall keep one copy of all Drawings, Specifications and approved shop drawings on the work, in good order, available to the Consultant and to his or her representatives.

7. OWNERSHIP OF DRAWINGS AND MODELS

All drawings, specifications and copies thereof and all models furnished by the Consultant are his or her property. They are not to be used on other work and, with the exception of the signed contract set of the Drawings and Specifications, are to be returned to him or her on request on the completion of the work. Any

models furnished by the Contractor or the Owner are the property of the Owner.

8. SAMPLES

The contractor shall furnish for the Consultant's approval such samples as he or she may reasonably require. The work shall be in accordance with approved samples.

9. MATERIAL TESTS AND MIX DESIGNS

The Contractor shall furnish for the Consultant's approval such material tests and mix designs as he or she may reasonably require. The cost of providing the foregoing beyond the extent called for in the specifications shall be charged to the Owner. The work shall be in accordance with approved material tests and mix designs.

10. CONSULTANT AND CONTRACTOR

The Consultant is, in the first instance, the interpreter of the Contract and the judge of its performance; he or she shall use his or her powers under the Contract to enforce its faithful performance by both parties hereto. The Contractor shall, however, have complete control, subject to Article 12, of his or her organization. In case of the termination of the employment of the Consultant, the Owner shall appoint any Consultant whose status under the Contract shall be that of the former Consultant.

11. THE CONSULTANT’S DECISION

The Consultant shall decide on questions arising under the contract documents, whether as to the performance of the work or the interpretation of the Specifications and drawings, but should the contractor hold such decisions to be at variance with the contract documents or to involve changes in work already built, fixed, ordered or in hand in excess of the Contract, or to be given in error, he or she shall notify the Consultant before proceeding to carry them out. In the event of the Consultant and the Contractor failing to agree as to such excess or error and the Consultant deciding to carry out such disputed work, the Contractor shall act according to such decision. Any question of excess of cost due to the aforesaid cause may be decided in the manner hereinafter provided in Article 43.

12. SUPERINTENDENCE

The Contractor shall keep on the work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Consultant. The superintendent shall not be changed except with the consent of the Consultant, unless the superintendent proves to be unsatisfactory to the Contractor or ceases to be in his or her employ. The superintendent shall represent the Contractor in his or her absence and directions on minor matters given to him or her shall be held to be given to the Contractor. Important directions shall be given in writing to the Contractor. The Contractor shall give efficient supervision to the work using his or her best skill and attention.

13. MATERIALS, APPLIANCES, EMPLOYEES

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labour, water, tools, equipment, light and power necessary for the execution of the work. Unless otherwise specified all materials shall be new. Both workmanship and materials shall be of the quality specified. The Contractor shall not employ on the work any unfit person or anyone not skilled in the work assigned to him or her.

14. INSPECTION OF WORK

The Owner, or the Consultant on his or her behalf, and their representatives shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection. If the Specifications, the Consultant's instructions, the laws, or the ordinances of any public authority require any work to be specially tested or approved, the Contractor shall give the Consultant timely notice of its readiness for inspection, and if the inspection is by an authority other than the Consultant, of the date and time fixed for such inspection. Inspections by the Consultant shall be promptly made. If any such work should be covered up without approval or consent of the Consultant, it must, if required by the Consultant, be uncovered for examination and made good at the Contractor's expense. Re-examination of questioned work may be ordered by the Consultant. If such work be found in accordance with the Contract, the Owner shall pay the cost of re-examination and replacement. If such work be found not in accordance with the contract, through the fault of the Contractor, the Contractor shall pay such cost.

15. REJECTED WORK

The Contractor shall promptly remove from the premises any defective work, whether the result of poor workmanship, use of defective materials, damage through carelessness or other act of the Contractor, which has been condemned by the Consultant as failing to conform to the contract documents, whether incorporated in the work or not. The Contractor shall promptly replace and re-execute his or her own work in accordance with the contract and without expense to the Owner and shall bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement. If the Contractor does not remove such condemned materials or work within the time fixed by written notice, the Owner may remove them and may store such materials at the expense of the Contractor. If the Contractor does not pay the expense of such removal within Five (5) days thereafter, the Owner may, upon Ten(10) days written notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs and expenses that should have been borne by the Contractor.

16. DEDUCTIONS FOR UNCORRECTED WORK

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

17. CORRECTION AFTER COMPLETION

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

18. EMERGENCIES

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

19. PROTECTION OF WORK AND PROPERTY

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

20. CONTRACTOR’S INSURANCE

20.1 INDEMNITY/HOLD HARMLESS

.1 The Contractor shall be liable for all injuries to persons and for damage to property caused by his operations, and those of his sub-contractors, and his and their employees, engaged on all operations in connection with the

contract both on and off the site, and he shall indemnify and save harmless the Owner from all suits, claims, expenses, costs, demands, losses, and damages to which the Owner may be put by reason of injury, including death, to persons, and damage to property of the Owner and others, resulting from; negligence, carelessness and any other cause whatsoever in the performance of the work.

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

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

(b) Theft or burglary of, and loss or damage to, any of his own plant and equipment being used on the Project and/or stored on the site.

20.2 <u>BUILDERS RISK, ALL RISK PROPERTY INSURANCE</u>

.1 The contractor shall, without limiting its obligations or liabilities herein and at its own expense, provide and maintain the following insurances with Insurers and in forms and amounts acceptable to Government:

(a) The Contractor shall have Commercial General Liability coverage in an amount not less than $2,000,000.00 inclusive per occurrence against bodily injury and property damage. The Government is to be added as an additional insured under this policy. Such insurance shall include, but not be limited to:

i. Blanket Written Contractual Liability;
ii. Personal Injury Liability;
iii. Non-owned Automobile Liability;
iv. Cross Liability;
v. Operation of Attached Machinery.

Commercial General Liability insurance shall be endorsed to provide the Government with thirty (30) days advance written notice of cancellation or material change and fifteen (15) days notice in the event of non-payment.

(b) Automotive liability coverage (Standard Automobile Policy) on all vehicles, the subject of this Agreement, owned, leased, operated or licensed in the name of the Contractor, in an amount not less than $2,000,000.00.

(c) If the work involves new construction or reconstruction of a property being repaired or maintained, the Contractor shall provide and maintain All Risk Course of Construction (Builder’s Risk) to the full

value of the work in the amount of the Contract Price. The policy will permit partial or complete use or occupancy by the Owner during the term of this insurance.

All the foregoing insurance shall be primary and not require the sharing of any loss by any insurer of the Government nor by any other form of recovery available such as the Provincial Self Insurance and Risk Management Fund.

.2 Proof of Insurance

A Certificate(s) of Insurance and any renewals thereof, shall be furnished to the Government prior to commencement of work by the Contractor and must be updated as required during the Term.

The policies required by this Agreement shall be in a form and with insurers satisfactory to the Government. Default of delivery or receipt by the Government shall not be construed as acknowledgment or concurrence that there has been compliance with the terms of this Agreement.

.3 Indemnification

The Contractor shall indemnify and hold harmless the Government, its agents, representatives and employees from and against all claims, demands, losses, costs, damages, actions, suits or proceedings of every nature and kind whatsoever arising out of or resulting from the performance of work (herein called the “claims”), provided that any such claim is caused in whole or in part of any act, error or omission, including but not limited to those of negligence of the Contractor, or anyone directly or indirectly employed by the Contractor anyone for whom the Contractor may be liable.

21. PERFORMANCE BOND

The Owner shall have the right to require the Contractor to furnish a bond covering the faithful performance of the Contract - including the corrections after completion provided for in Article 17 - and the payment of all obligations arising under the Contract, in such form as the Consultant may prescribe and with such sureties as he or she may approve. If such bond is required by written instructions given previous to the receipt of bids, the

premium shall be paid by the Contractor, if subsequent thereto, it shall be paid by the Owner.

22. CASH ALLOWANCES

The Contractor shall include in the contract sum all cash allowances mentioned in the Specifications, which allowances shall be expended in whole or in part as the Consultant shall direct and the amount of the contract sum being adjusted in conformity therewith. The Contract sum includes such sums for expenses and profit on account of such cash allowances as the Contractor required excepting those allowances included for contingency purposes.

23. SUBSURFACE CONDITIONS

In the event that during the execution of the work, subsurface conditions at the site are found to differ materially from those indicated in the contract documents and soil reports, or otherwise represented by the Owner or Consultant to the Contractor, then the Contractor shall promptly notify the Consultant in writing of such conditions. The Consultant shall promptly investigate such conditions and if he or she finds that they differ materially and will result in an increase or decrease in the cost of, or time required for performance of this Contract, an equitable adjustment shall be made between the parties and the Contract modified in writing accordingly. If the parties fail to agree upon the adjustment to be made, the dispute may be determined as provided for in Article 43.

24. CHANGES IN THE WORK

The Owner or the Consultant, without invalidating the Contract, may make changes by altering, adding to, or deducting from the work, the contract sum being adjusted accordingly. All such work shall be executed under the conditions of the Contract except that any claim for extension or reduction of time caused thereby shall be adjusted at the time of ordering such change. Except as provided in Article 18, no change shall be made unless in pursuance of a written order from the Consultant and no claim for an addition to or deduction from the contract sum shall be valid unless so ordered and at the same time valued, or agreed to be valued, as provided in Article 25.

25. VALUATION OF CHANGES

Change Orders calling for normal changes or additions to the work will be priced in detail giving actual material trade prices (not list prices) and actual labour costs (including Employment Insurance, Worker's Compensation, holiday pay) and actual equipment rental. To these prices the Contractor will add:

.1 For work less than $2,500 involving the General Contractor only, the General Contractor adds 20% to his or her costs.

.2 For work over $2,500 involving the General Contractor only, the General Contractor adds 15% to his or her costs.

.3 For work less than $2,500 involving a Sub-Contractor only, the Sub-Contractor adds 20% to his or her costs, submits this price to the General Contractor who adds 10%.

.4 For work over $2,500 involving a Sub-Contractor only, the Sub-Contractor adds 15% to his or her cost, submits this price to the General Contractor who adds 5%.

.5

(a) For work less than $2,500 involving the General Contractor and Sub-Contractor, the Sub-Contractor adds 20% to his or her costs, submits his or her price to the General Contractor who adds 10%; to this amount the General Contractor adds the cost of his or her own work plus 20% of the cost of his or her own work only.

(b) The General Contractor does not add a further 10% to the cost of his or her own work.

.6

.1 For work over $2,500 involving the General Contractor and a Sub-Contractor, the Sub-Contractor adds 15% to his or her cost, submits this price to the General Contractor who adds 5%; to this amount the General Contractor adds the cost of his or her own work plus 15% of the cost of his or her own work

only.

.2 The General Contractor does not add a further 5% to the cost of his or her own work.

.7 Deletions to Contract: A mark-up shall **not** be charged nor credited on a credit portion of a Change Order.

.8 Supervision related to Change Orders shall be considered as included in the allowable mark-up and shall **not** be included in the labour charges for a Change Order.

26. APPLICATION FOR PAYMENTS

(a) The Contractor shall - before the first application for payment - submit to the Consultant a schedule of values of the various parts of the work aggregating the total sum of the contract, divided so as to facilitate payments, made out in such form, and supported by such evidence as to its correctness as the Consultant may direct. This schedule, when approved by the Consultant, shall be used as a basis for applications of payment, unless it can be found to be in error.

(b) The Contractor, as per current Provincial regulation, shall include on all invoices the Harmonized Sales Tax (HST) as an additional line item. This amount would be addition to the tender amount which does not include HST. See article 28 of this Section.

27. CERTIFICATES AND PAYMENTS

(a) Partial payments will be made monthly and within thirty (30) days after approval by the Owner and on the basis of a duly certified and approved estimate of work performed during the preceding period. In preparing estimates, the material delivered on the site and preparatory work done shall be taken into consideration.

(b) In making such partial payments, there shall be retained a hold back in the amount of 15% (fifteen percent) of the estimated amount on each partial payment estimate, less any holdback release which may have been made to specific sub-contractors under any progressive

release of holdback provisions in Provincial legislation.

(c) All materials and work covered by partial payments made shall thereupon become the sole property of the Owner, but this shall not be construed as relieving the Contractor from the sole responsibility for the safety and preservation of all materials and work upon which payments have been made and restoration of any damaged work or as a waiver of the right of the Owner to require the fulfilment of all the terms of the contract. Nor shall Consultant's Certification of Partial Payment for any work be construed as his or her final or irrevocable acceptance of that work.

(d) Document of Completion: Upon completion and acceptance of all work whatsoever required and the release of all claims against the Owner as specified, the Consultant shall file a written document with the Owner and with the Contractor as to the entire amount of work performed and compensation earned by the Contractor B including the extra work and compensation therefor.

(e) Final Payment: Within sixty (60) days after the filing of such document of completion and minimum one (1) day after the lien period, and upon receipt from the General Contractor of declarations signed by each of his sub-contractors that the sub-contractor has been paid up to, and including the past previous partial payment, the Owner will pay the Contractor the amount stated therein less all deductions authorized by the terms of this contract and previous payments and advances whatsoever to or for the account of the Contractor. All previous estimates and payments, including those relating to extra work, shall be subject to correction at the time of this payment which is, throughout this Contract, called Final Payment. Final Payment shall be subject to inspection and acceptance by the Owner or duly authorized representatives of the Owner and by representatives of all agencies having direct interest in the project.

Submittals to include:

*Certificate or letter of clearance from the Provincial Worker’s Compensation Board.

*Certificate or letter of clearance from the Provincial Treasury.

(f) With the second and all subsequent applications for payment, the

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

(g) With application for release of lien holdback, the Contractor shall include certificates issued by the Worker's Compensation Board and Provincial Sales Tax Revenue, indicating that Worker's Compensation premiums and Provincial Sales Tax in relation to the project have been paid in full.

28. TAXES

Unless otherwise provided herein, the Contractor shall pay all government sales or excise taxes in force at the date of the Agreement, provided that any increase or decrease in such taxes shall increase or decrease the contract sum accordingly.

29. PERMITS, NOTICES, LAWS AND RULES

The Contractor shall apply and pay for all necessary permits or licenses required for the execution of the work (But this shall not include the obtaining of the Building Permit or permanent easement or rights of servitude). The Contractor shall give all necessary notices and pay all fees required by law and comply with all laws, ordinances, rules and regulations relating to the work and to the preservation of the public's health. The Contractor shall be responsible for the safety of all workmen and equipment on the project in accordance with all applicable safety legislation passed by federal, provincial and local authorities governing construction safety.

If the contract documents are at variance therewith, any resulting additional expense incurred by the Contractor shall constitute an addition to the contract price.

30. PATENT FEES

The Contractor shall pay all royalties and license fees and shall save the Owner harmless from loss on account of suits or claims for infringement of patents in the doing of the work.

31. USE OF PREMISES

The Contractor shall confine his or her apparatus, the storage of materials and the operations of his or her workmen to limits indicated by laws, ordinances, permits or by direction of the Consultant and shall not unreasonably encumber the premises with his or her materials. The Contractor shall not load - or permit to be loaded - any part of the work with a weight that will endanger its safety. The Contractor shall enforce the Consultant's instructions regarding signs, advertisements, fires and smoking.

32. CLEANING UP

The Contractor shall at all times keep the premises free from accumulations of waste material or rubbish caused by his or her employees or work and, at the completion of the work, he or she shall remove all his or her rubbish and all tolls, equipment and surplus materials from and about the work and shall leave the work "broom clean" or its equivalent, unless more exactly specified. In case of dispute, the Owner may remove the rubbish and charge the cost as the Consultant shall determine to be just.

33. CUTTING, PATCHING AND DIGGING

The Contractor shall do all cutting, fitting or patching of his or her work that may be required to make its several parts come together properly and fit it to receive or be

received by work of Other Contractors shown upon, or reasonably implied by, the contract documents.

Any cost caused by ill-timed work shall be borne by the party responsible therefor.

The Contractor shall not endanger any existing work by cutting, digging or otherwise and shall not cut or alter the work of any other contractor save with the consent of the Consultant.

34. DELAYS

If the Contractor is delayed in the completion of the work by any act or neglect of the Owner, Consultant or any Other Contractor or any employee of any one of them or by changes ordered in the work, then the time of completion shall be extended for such reasonable time as the Consultant may decide. If the Contractor is delayed in completion of the work by labour disputes, strikes, lock-outs, (including lock-outs decreed or recommended by a recognized contractors' association for its members of which the Contractor is a member), fire, unusual delay by common carriers or unavoidable casualties or without limit to any of the foregoing by any cause of any kind whatsoever beyond the Contractor's control, then the time of completion shall be extended for a period of time equal to the time lost due to such delays. In addition and without limit to the foregoing, the time of completion shall be extended because of any cause whatsoever within the Contractor's control which the Consultant shall decide as justifying a delay for such reasonable time as the Consultant may decide.

No such extension shall be made for delay unless written notice of claim is given to the Consultant within seven (7) days of its commencement provided, however, that in the case of a continuing cause of delay only one claim shall be necessary.

If no schedule is made under Article 3, no claim for delay shall be allowed on account of failure to furnish drawings until two (2) weeks after demand for such drawings and not then unless such claim be reasonable.

The Consultant shall not, except by written notice to the Contractor, or as provided in Article 18, stop or delay any part of the work pending decisions or proposed changes either by him or herself or by the Owner.

35. OWNER'S RIGHT TO DO WORK

If the Contractor should neglect to execute the work properly or fail to perform any provision of this Contract, the Owner, after five (5) days written notice to the Contractor, may without prejudice to any other right or remedy he or she may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor; provided however, that the Consultant shall approve both such actions and the amount charged to the Contractor.

36. OWNER'S RIGHT TO TERMINATE CONTRACT

If the Contractor should be adjusted as bankrupt, or if he or she should make a general assignment for the benefit of his or her creditors, or if a receiver should be appointed on account of his or her insolvency or if he or she should - except in case of recited in Article 35 - refuse or fail to supply enough properly skilled workmen or proper materials after having received seven (7) days' notice in writing from the Consultant to supply additional workmen or materials, or if he or she should fail to make prompt payment to Sub-Contractors or for material or labour, or persistently disregard laws, ordinances or the instruction of the Consultant, or otherwise be guilty of a substantial violation of the provisions of the Contract, then the Owner, upon the certificate of the Consultant that sufficient cause exists to justify such action, may, without prejudice to any right or remedy he or she may have, by giving the Contractor written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method he or she may deem expedient, but without undue delay or expense. In such case, the Contractor shall not be entitled to receive the expense of finishing the work, including compensation to the Consultant for his or her additional services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, shall be certified by the Consultant.

37. CONTRACTOR'S RIGHT TO SUSPEND WORK OR TERMINATE CONTRACT

If the work should be stopped under an order of any court or other public authority through no act or fault of the Contractor or of anyone employed by him or her, or if the Consultant fails to issue a certificate in accordance with Article 27, or if the Owner should fail to pay to the Contractor within seven (7) days of its maturing and presentation, any sum certified by the Consultant or awarded by arbitrators, then the Contractor may, upon five (5) days written notice to the Owner and the Consultant, stop work and/or terminate this Contract without prejudice to any other right or remedy he or she may have and recover from the Owner payment for all work executed and any loss sustained upon the plant or material with reasonable profit and damages.

38. DAMAGES AND MUTUAL RESPONSIBILITY

If either party to this Contract should suffer damage in any manner because of any wrongful act or neglect of the other party or of anyone employed by him or her then he or she shall be reimbursed by the other party for such damage. Claims under this paragraph shall be made in writing to the party liable within a reasonable time

after the first observance of such damage and not later than the time of final certificate, except as expressly stipulated otherwise in the case of faulty work or materials, and may be adjusted by agreement or in the manner set out in Article 43 and the party reimbursing the other party as aforesaid shall thereupon be subrogated to the rights of the other party in respect of such wrongful act or neglect if it be that of a third party. Should the Contractor cause damage to any other contractor on the work, the Contractor agrees - upon due notice - to settle with such other contractor by agreement or arbitration, if he or she will so settle. If such other contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify the Contractor who shall defend such proceedings at the Owner's expense and if any final order or judgement against the Owner arises therefrom the Contractor shall pay or satisfy it and pay all costs incurred by the Owner provided that if the Contractor becomes liable to pay or satisfy any final order or judgement against the Owner, then the Contractor shall have the right upon undertaking to indemnify the Owner against any and all liability for costs to appeal, in the name of the Owner, such final order or judgement to any and all courts or competent jurisdiction.

39. SEPARATE CONTRACTS WITH OTHER CONTRACTORS

The Owner reserves the right to let separate contracts in connection with the undertaking of which the work is a part and the Contractor shall connect properly and coordinate this work with that of other contractors. If any part of the Contractor's work depends - for its proper execution or results - upon the work of any other contractor, the Contractor shall inspect the work prior to proceeding with his or her work as required by the Contract. Should the Contractor fail so to inspect and report, he or she shall have no claim against the Owner by reason of the defective or unfinished work of any other contractor except as to latent defects not reasonably noticeable at the time of the commencement of the Contractor's work. In letting separate contracts, the Owner shall be responsible for the coordination of fire and the other insurance coverages and shall take all precautions reasonably possible to avoid possible occurrence of a labour dispute or disputes on the work.

40. ASSIGNMENT

Neither party to the Contract shall assign the Contract without the written consent of the other.

41. SUBCONTRACTS

The Contractor agrees that the list of names of sub-contractors supplied prior to the signing of the Contract is the list of Sub-Contractors proposed to be used to carry out those parts of the work noted thereon and he or she shall not employ any to whom the Consultant may reasonably object.

If the change of any name on such list is required by the Consultant and the work has to be awarded to a higher bidder, the Contract price shall be increased by the difference between the two bids.

The Consultant shall, on request, furnish to any Sub-Contractor wherever practicable, evidence of the amounts certified to on his or her account.

The Contractor shall be held as fully responsible to the Owner for the acts and

omissions of his or her sub-contractors and of persons directly or indirectly employed by them, as for the acts and omissions of persons directly employed by him. In view of this responsibility, the Contractor shall not be obliged to employ as a sub-contractor or supplier any person or firm to whom he or she may reasonably object.

Nothing contained in the contract documents shall create any contractual relation between any sub-contractor and the Owner.

42. RELATIONS OF CONTRACTOR AND SUB-CONTRACTOR

The Contractor agrees to bind every sub-contractor by the terms of the contract documents, as far as applicable to his or her work.

43. ARBITRATION

In the case of any dispute arising between the Owner (or the Consultant acting on his or her behalf) and the Contractor as to their respective rights and obligations under the Contract, either party hereto shall be entitled to give to the other notice of such dispute and to request arbitration thereof; and the parties may, with respect to the particular matters then in dispute, agree to submit the same to arbitration in accordance with the applicable law of the place of building.

Arbitration proceedings shall not take place until after the completion or alleged completion of the work except (a) on a question of certificate for payment, or (b) in a case where either party can show that the matter in dispute is of such nature as to require immediate consideration while evidence is available.

44. OWNER SIGNING AUTHORITY

Mr. Alan Maynard, P. Eng. is designated as the Director for the purposes of this agreement. The Director shall represent Government in all matters pertaining to the Construction Project being provided pursuant to this agreement, and will administer said agreement, and shall complete necessary approvals of all plans and specifications provided for under this agreement on behalf of Government, provided however, that the Director shall not be authorized to amend the terms of the agreement.

Government may replace the Director by providing written notice, in accordance with the notice requirements of this agreement.

End

PROJECT: Greenfield Elementary School IT Consolidation
Summerside, Prince County, PEI

1. GENERAL

The undersigned tenderer (hereinafter called the "Contractor") hereby offers to the Minister of Transportation, Infrastructure and Energy (hereinafter called the "Owner") to furnish all necessary tools, plant, services, materials and labour to execute and complete in a careful and workmanlike manner the work set out under the **Project 250-15090** herein, which is more particularly described in the Plans and Specifications titled "Greenfield Elementary School IT Consolidation, Summerside, Prince County, PEI" and dated December, 2015 for the lump sum as set out in Clause 3.

The Contractor agrees:

.1 To complete the work by the date indicated in the Instructions to Bidders.

.2 That this Form of Agreement supersedes and cancels all communication, negotiations and agreements relating to the work other than contained in the completed tender.

.3 To use all suppliers and sub-contractors indicated on his tender unless prior approval is received from the Engineer to make a change.

2. ADDENDA

The following addenda are included in this contract:

_____

_____

_____

3. CONTRACT PRICE

3.1 The Contract Price,(*the lump sum referred to in Clause 1:*) which excludes value added taxes is:

_____

_____

3.2 Value added (HST) (of _____ %) payable by the Owner to the Contractor are:

_____

_____

3.3 Total amount payable by the Owner to the Contractor for the construction of the work is:

_____

_____

4. CORRESPONDENCE

The Owner, Engineer, Consultant, and Contractor may be contacted in writing at the addresses below:

Owner, Engineer, & Consultant

P.E.I. Department of Transportation, Infrastructure and Energy
P.O. Box 2000
Charlottetown, P.E.I.
C1A 7N8

Contractor

_____

_____

_____

5. CONTRACTOR'S ACCEPTANCE

Accepted and executed on behalf of the Contractor this _____ day of _____, 20__, in the

presence of _____.

_____ _____
Witness Signature & Corporate Seal

6. OWNER'S ACCEPTANCE

Accepted and executed on behalf of the Owner this _____ day of _____, 20__, in the

presence of_____.

_____ _____
Witness Signature & Seal

End

TENDER

SUBMITTED BY: _____

ADDRESS: _____

_____

Phone: _____ Fax _____

DATE: _____

FOR: Greenfield Elementary School IT Consolidation
Summerside, Prince County, Prince Edward Island

TO: Minister of Transportation, Infrastructure and Energy
11 Kent Street
P.O. Box 2000
Charlottetown, P.E.I.
C1A 7N8

HAVING examined the drawings and specifications for this project as well as any addenda issued, we hereby offer to furnish all materials and labour necessary for the full and proper completion of:

"Greenfield Elementary School IT Consolidation
Summerside, Prince County, Prince Edward Island"

INCLUDING all prime cost allowances, or other taxes in force at this date **excluding HST**; but not including any additional or deductible allowance or taxes which may be applicable subsequent to this date, and which shall be payable by or to the Owner, in accordance with the above mentioned documents, for the sum of:

_____Dollars ($_____)

in lawful money of Canada.

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

This tender includes the following addenda:

Addendum #	Date	Initial

ALTERNATIVE PRICES

The following are our prices for the Alternative Work listed here under. Such Alternative Work and amounts are **NOT** included in the Base Bid. HST included.

* All conditions of the specification are to apply to complete the Installation.

Description of Alternative Work		**Effect on Base Bid ($)**	
Specified Product (Base Bid)	Alternative Product	Addition	Deduction
1._____	_____	_____	_____
2._____	_____	_____	_____

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

Enter into a formal contract agreement with the Owners.

Furnish a general analysis of the contract sum, the total aggregating the amount of our tender.

Provide a construction schedule and complete the entire work on or before the dates stated.

Our tender includes the following sub-contractors and suppliers, (own forces may be used).

Ceiling	_____
Cutting and Patching	_____
Roofing	_____
Firestopping	_____
Select Demolition	_____
Electrical	_____
Mechanical	_____
_____	_____
_____	_____

_____
Submitted by (Name of Bidder)

_____
Authorized Signature
(SEAL)

End

1 References

.1 CSA S269.1 - [1975] Falsework for Construction Purposes.

.2 CAN/CSA-S269.2-[M87] Access Scaffolding for Construction Purposes.

2 Construction Safety Measures

.1 Observe construction safety measures of:
- .1 National Building Code 1995, Part 8
- .2 National Fire Code of Canada
- .3 Provincial Government, including but not limited to the:
  - .1 Provincial Building Code Act
  - .2 Occupational Health & Safety Act revised Statutes of Prince Edward Island 1988 (including any amendments to December 20, 2000) and regulations.
  - .3 Workers' Compensation Act
  - .4 Fire Prevention Act
  - .5 Dangerous Goods Transportation Act
  - .6 Industrial Best Practices for Equipment Isolation and Lockout Policy

.2 In case of conflict or discrepancy the more stringent requirement shall apply.

.3 Maintain clear emergency exit paths.

.4 Ensure that employees working on this specific project have met training requirements as legislated by the Prince Edward Island Occupational Health and Safety Act and its regulations.

.5 Where reference is made to jurisdictional authorities, it shall mean all authorities who have within their constituted powers the right to enforce the laws of the place of the building or workplace.

3 Overloading

.1 Ensure no part of Work is subjected to loading that will endanger its safety or will cause permanent deformation.

4 Falsework

.1 Design and construct falsework in accordance with CSA S269.2.

5 Hoists & Cranes

.1 Operate such equipment only by qualified hoist or crane operators, and maintain current inspection certificate.

6 Scaffolding & Fall Arrest

.1 Design and Construct Scaffolding in accordance with CSA S269.2.

.2 Each user of scaffolding shall examine scaffolding for sufficiency before using it. He shall make it secure, or shall notify the Contractor in Writing that he will not commence work until it is made secure.

.3 Comply with the requirements of the Fall Protection & scaffolding Regulations, Province of Prince Edward Island 1988.

7 Equipment & Tools

.1 Each user of equipment or tools shall be appropriately trained and be responsible to examine for sufficiency before use. Make equipment and tools safe if necessary, or notify the Contractor in writing that user will not commence work with such tools until it is made safe.

8 WHMIS

.1 Comply with the requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and comply regarding labelling and provision of material safety data sheets.

.2 Have a copy of WHMIS data sheets available at the workplace on delivery of materials.

9 Hazardous Material

.1 Should material resembling hazardous materials [other than those identified with the Contract Documents], including but not limited to spray or trowel applied asbestos, be encountered in course of work; stop work immediately. Do not proceed until written instructions have been received from Consultant.

.2 Any material which contains asbestos that is disturbed or removed during construction work (see Asbestos Content Report), shall be removed in accordance with the regulations set out by the Occupational Health & Safety Act. All costs for proper cutting, removal and disposal of all asbestos on this contract shall be included in Tender. Refer also to Section 01900.

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

10 Site Cleaning

.1 Except where special permission is obtained, maintain clear access on public sidewalks and roads.

.2 Maintain walks and roads clear of construction materials and debris, including excavated material. Clean walks and roads as frequently as required to ensure that they are cleared of materials, debris and excavated material.

.3 Remove snow and ice from public sidewalks.

11 Fire Safety Requirements

.1 Enforce fire protection methods, good housekeeping and adherence to local and underwriter's fire regulations including, but not limited to, Fire Protection Act and the Provincial Building Code Act. Provide UL approved fire extinguishers, and other fire fighting services and equipment, except where more explicit requirements are specified as the responsibility of individual Sections.

.2 Hot Work will not be permitted on or within the building structure, tanks, or confined spaces, except as outlined herein. Prior to conducting hot work, a hot work permit shall be prepared and submitted. An example format for a hot work permit shall be included in the Safety document submission. The permit shall describe compliance with the following procedures. After tank or confined space interiors or building areas have been decontaminated, hot work may be conducted only when the tank or confined space is inverted. Hot work shall not be performed unless monitoring indicates atmospheres within and immediately surrounding are less than 8% oxygen inside less than 10% of the LFL outside; continuous monitoring shall continue until the hot work is completed. The hot work prohibition includes welding, cutting, grinding, sawing, or other similar operations which could be expected to potentially generate combustion-producing temperatures or sparks, or which could produce potentially hazardous fumes or vapors. An individual at each hot work site shall be designated as a fire watch. This person's sole responsibility shall be to monitor the hot work and have immediate access to at least two (2) twenty pound fire extinguishers located at each hot work site. All extinguishers shall be currently inspection tagged, approved safety pin and tamper resistant seal. A new permit shall be obtained at the start of each work shift during which hot work will be conducted.

.3 Smoking permitted in designated areas only. Exercise care in the use of smoking materials.

.4 Advise Fire Chief in the area of Work of any work that would impede fire apparatus response, including but not limited to violation of minimum overhead clearance prescribed by the fire chief, erecting of barricades and digging of trenches.

.5 Fire Separations:

.1 Ensure that fire separations are installed to maintain total integrity and that they are not breached by Work following their installation.

.2 Replace fire separations which have suffered a lessening of their required rating during construction.

.6 Ensure nothing subverts the integrity of fire protection provided for the building structure.

.7 Coordinate work of all sections so that they do not encroach on space required for fire protection and it's installation. Ensure that fire protection damaged during construction is totally replaced.

12 Reporting Fires

.1 Know the location of the nearest fire alarm box and telephone, including the emergency phone number.

.2 Report immediately all fire incident to the fire department as follows:

.1 Activate nearest fire alarm box, or
.2 Telephone 911
.3 Where fire alarm box is exterior to building, the person activating the fire alarm box shall remain at the box to direct Fire Department to scene of the fire.
.4 When reporting a fire by telephone, give location of fire, name or number of building and be prepared to verify the location.

13 Environmental Protection

.1 Ensure that pollution and environmental control of construction activities are exercised during the Work to requirements of the federal and provincial environmental acts; including, but not limited to, the Prince Edward Island Environmental Protection Act.

14 Safety Document Submission

.1 Ensure Safety Document Submission applies to Work of this specific project and site.

.2 Submit two copies of Safety Document at the Pre-Construction Meeting. Do not commence Work nor deliver material on-site prior to submission.

.3 Include in Safety Document submission specific information detailing the methods and procedures to be implemented ensuring adherence to the acts, regulations, codes and policies specified in this section and to:

.1 Ensure the health and safety of persons at or near the Work; including, but not limited to, the Public.
.2 Ensure the measures and procedures of the regulatory agencies specified are carried out.
.3 Ensure every employee, self-employed person and employer performing Work under this contract complies with the regulatory agencies specified.
.4 Where changes to the methods and procedures in the execution of work change submitted safety methods and procedures, modify

submitted Safety Documentation and submit modifications, in writing to the Consultant and Minister prior to implementation.

15 Safety Document Organization

.1 Organize information in the form of an instructional manual as follows:
- .1 Place in binders of commercial quality, 8-1/2"x 11"x3" maximum ring size.
- .2 Cover: Identify binder with typed or printed title “Project Safety Document” and list the title of project.
- .3 Provide tabbed fly leaf for each separate heading, with typed heading on tab.
- .4 Where drawings are within the safety document, provide with reinforced punched binder tab. Bind in with text; fold in larger drawings to size text pages.
- .5 Arrange content under Safety Document headings specified herein.

16 Safety Document Headings

.1 Employee Safety Training
- .1 Place, under this heading, a statement indicating employees working on this specific project have met specified training requirements.

.2 Company Safety Policy
- .1 Place, under this heading, information pertaining to the company’s policy and commitment to Occupational Health and Safety, including the responsibilities of management, supervisors and workers.

.3 Company Safety Rules in General Terms
- .1 Place, under this heading, information of a general, global nature, applying to every work environment where the company has staff and pertaining to rules directing compliance to policy. For example state company safety rules with respect to use of hard hats, safety glasses, safety foot ware, CSA approval on such items, use of alcohol or non-prescription drugs.

.4 Hazard Assessment
- .1 Place, under this heading, information identifying possible hazards specific to this project and identify safe methods and procedures for the execution of work to ensure safety in the work place.
- .2 Arrange contents of this heading by technical section number on the project manual.

.5 Emergency Action Plan
- .1 Place, under this heading, information detailing action to be taken in the event of various emergencies.

.2 Arrange content under the following sub-headings:

.1 First Aid

.1 Include information concerning establishment of a First Aid Station, related supplies, staff awareness of location and staff training in First Aid Care of Casualties.

.2 Contact of Emergency Support Groups:

.1 Include relative information including phone location for emergency use, the emergency telephone numbers (and their location) for the various organizations which must be contacted in case of an emergency, and staff training in procedures.

.3 Cessation of Work:

.1 Include relative information how work cessation during emergencies is handled and communicated to persons present on site.

.6 Joint Occupational Health & Safety Committee Representative:

.1 Place under this heading information detailing membership and terms of reference.

17 <u>Safety Officer</u>

.1 Provide a Safety Officer at the work site to perform safety management, surveillance, inspections, and safety enforcement for the contractor. The Safety Specialist shall be the safety "competent person." The Safety Officer shall be at the work site at all times whenever work or testing is being performed, shall conduct daily safety inspections.

.1 Qualifications

.a Qualifications of Safety Officer:

.1 Ability to manage the on-site contractor safety program through appropriate management controls.

.2 Ability to identify hazards and have the capability to expend resources necessary to abate the hazards.

.3 Must have worked on similar types of projects that are equal to or exceed the scope of the project assigned with the same responsibilities.

.4 Shall, as a minimum, have attended a recognized training qualification program including at least 40 hours of classroom instruction.

b. Qualifications of Qualified Person, Confined Space Entry. The qualified person shall be capable (by education and specialized training) of anticipating, recognizing, and evaluating employee exposure to hazardous substances or other unsafe conditions in a confined space. This person shall be capable of specifying necessary control and protective action to ensure worker safety.

c. Qualification of Crane Operators must be submitted to the consultant for approval and must be authorized to operate the crane.

.2 Meetings

a. Preconstruction Conference
The safety officer shall attend the preconstruction conference. (see outline attached).

b. Meeting on Work Procedures
Meet with Contracting Officer to discuss work procedures and safety precautions required by the APP. Ensure the participation of the contractor's superintendent, the quality control, and representatives of each subcontractor or trade performing work at the site.

.3 Weekly Safety Meetings
Hold weekly at the project site. Attach minutes showing contract title, signatures of attendees and a list of topics discussed.

.4 Work Phase Meetings
The appropriate activity hazard analysis shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

.5 New Employee indoctrination
New employees will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

End

PRE-CONSTRUCTION CONTRACTOR SAFETY CHECKLIST

Use this text as a guideline for completing the attached checklist. This checklist is a general, *pre-construction* review of the contractor safety program, as well as an information session to identify what the P.E.I. Department of Transportation, Infrastructure and Energy requires of our contractors. Where the item requires a submission, ensure that it is received. If the item does not apply, enter N/A for not applicable.

The following information will assist you in establishing what will be reviewed in each section.

1. ***Safety Policy:*** Each employer is required by law (in Prince Edward Island) to have a safety policy and program and to implement that policy. TIE will ask for and receive a copy of that program.

2. ***Safety Representative:*** Each contractor is required to advise TIE who their safety representative is. That representative has duties as described in the Occupational Health and Safety Act.

3. ***Emergency Procedure:*** Each contractor must have a site specific layout and emergency plan complete with emergency phone numbers.

4. ***Employee Orientation:*** Each and every person working for a contractor, including sub-contractors, will be given an orientation to familiarize them with the site safety program. Unless otherwise specified, each sub-contractor is responsible for the orientation of their workers.

5. ***Safe Work Plan:*** Most contractors are involved in tasks that subject workers to hazards. In order to ensure that these workers are secured from hazard, the contractor will supply TIE with a written safe work plan which affords protection against the hazards. This plan must be signed by a company representative and communicated to the workers involved in the task.

6. ***Personal Protective Equipment Review:*** Advise that all workers require CSA Class "B" hard-hat, CSA "Green patch" (eight inch) footwear, eye, ear, and respiratory protection as required (boots and hat at all times).

7. ***Fall Protection:*** Fall restraint or fall arrest protection required where a fall of 2.4 meters (8 feet) or more is possible. **NO EXCEPTIONS.**

8. ***Housekeeping:*** Advise of daily, or as needed, clean-up requirements.

9. ***Tool Box Talks:*** Each contractor is required to conduct weekly safety meetings with their forces and advise TIE they have been done.

10. ***Material Handling/Storage:*** Advise contractor about storage areas and handling of material so as not to endanger their worker or another worker. Stacked material to be banded, chained, blocked, or otherwise secured.

11. ***Landing Platforms:*** Advise contractor about movement of material on or off platforms. All material to be secured. Platform gates or chains to be kept closed at all times workers are on platform. If not possible, worker to be tied off with fall restraint system independent of platform.

12. ***WHMIS Training:*** Receive verification that all contractor workers are trained and that the contractor submits their MSDS.

13. ***GFCI:*** Advise contractor that all tools are required to have ground fault circuit

interrupters (where electricity is supplied by contractor).

14. ***Accident Investigations:*** Any injury to any of their workers must be investigated and reported to TIE.

15. ***Verbal, Written, Gone:*** Explain Zero Tolerance Program.

16. ***Joint/Worker Safety Committee:*** Sites of over 20 workers must establish a safety committee; over 50, an additional worker committee. Workers required to attend committee meetings will do so and not be prevented by employers.

17. ***Fire Protection:*** All trades involved in performing hot work of any kind are required to provide fire protection at the work location.

18. ***Guardrails:*** Advise contractors that where temporary removal of guardrails is necessary, the area around them must be cordoned off with a barrier. Guardrails must be replaced as soon as possible.

19. ***First Aider:*** Each contractor is required to have a first aid kit and trained first aider. Employer must name their first aider.

20. ***Visitors:*** Advise contractor that any visitors to site must be suitably protected from hazard. They must wear hard hat, safety vest, and proper safety footwear while on site.

21. ***Task Lighting:*** Review responsibilities of task specific lighting (who provides it).

22. ***Swamper/Riggers Competency:*** Where cranes are used, the contractor must use a swamper/rigger. They shall provide TIE with a written statement identifying, by name(s), their rigger and that the named person is a competent worker as described in the construction regulations.

23. ***Scaffolds:*** Review scaffold building requirement:
    - ☞ Use all braces required by design.
    - ☞ Access ladder for platform over 1.5 meters.
    - ☞ Full width platform if height over 3 meters (ten feet.) (PEI Regulations require double planks)
    - ☞ Full guardrails and toeboards.
    - ☞ Tied in three times base dimension or use of outriggers.
    - ☞ Engineered over 50 feet in height (standard frame type).

24. ***Elevating Work Platforms:***
    - ☞ All boom and scissors lifts required to be CSA approved and have approval on machine.
    - ☞ Operators manual required on machine at all times.
    - ☞ Maintenance record on machine at all times.
    - ☞ Operator must receive training in operation of equipment.
    - ☞ Fall protection must be used at all times on a boom lift.
    - ☞ Fall protection required to be used on scissors lift when unit is being moved.

25. ***Protruding Rebar:*** Installer's of reinforcing steel must protect the protruding hazard or make arrangements to have it protected. Removal of protective coverings for task purposes only is allowed, however, protective covering must be replaced as soon as possible.

26. ***WCB Clearance Certificates:*** Advise contractor that TIE will not release any funds for payment until Workers Compensation Board Clearance Certificate has been received by TIE.

PRE-CONSTRUCTION CONTRACTOR SAFETY CHECKLIST

PROJECT: _____ DATE:_____

CONTRACTOR:_____

WORK BEING PERFORMED:_____

_____ _____

_____ _____
(Print name and title) (Print name and title)

_____ _____
E-D Project Manager/Superintendent (Sign) Contractor Representative (Sign)

✓Means Yes ☒ Means No

1. Safety Policy Submitted ☐
2. Safety Representative ☐
3. Emergency Procedure Review ☐
4. Employee Orientation ☐
5. Written Safe Work Plan Submitted ☐
6. Personal Protective Equipment Review ☐
   - Hard Hats & Footwear
   - Safety Glasses
   - Hearing
   - Dust & Fumes
7. Fall Protection ☐
8. Housekeeping ☐
9. Tool Box Safety Talks (Weekly) ☐
10. Material Handling/Storage ☐
11. Landing Platforms ☐
12. WHMIS Training Verification - MSDS Received ☐
13. GFCI Requirements ☐
14. Accident/Incident Investigations Notification ☐
15. Verbal, Written, Gone ☐
16. Joint/Worker Safety Committee ☐
17. Fire Protection ☐
18. Guardrails ☐
19. First Aider on Staff - Name Supplied ☐
20. Visitors & Safety Equip. ☐
21. Task Lighting ☐
22. Swampers/Riggers Competency (in writing) ☐
23. Scaffolds ☐
24. Elevating Work Platforms ☐
25. Protruding Rebar Protection ☐
26. WCB Clearance Certificate ☐

End

1. GENERAL

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

b. The General Contractor shall co-ordinate, administer and supervise all work and material acquisition unless noted otherwise in either the Specifications or Drawings. Faulty work by any Section which could have been avoided by proper co-ordination and/or supervision by the General Contractor will not be accepted.

c. Unless specified otherwise, the provisions of this Section shall apply to all Sections of the specifications.

d. Study all Contract documents to determine additional work required by your section on which the work of other sections depends.

e. Establish rates of wages and conditions of work in accordance with the Industrial Standards Act of the Province of Prince Edward Island. Wherever possible give preference to local labour.

f. Workmanship shall be of highest quality in accordance with best standard practice for this type of work, except where specified more precisely.

2. SPECIFICATION FORMAT

a. These specifications are not intended as a detailed description of installation methods but serve to indicate particular requirements in the completed work.

b. Conform to the latest edition of the National Building Code, together with all its related supplements, hereinafter referred to as the "Code" or "code". Where Drawings and Specifications exceed code requirements provide such additional requirements.

c. Where a material is designated on Drawings or in the Specifications for a certain application, unless otherwise specified, that material shall conform to standards designated in the latest edition of the National Building Code and any other Code, Act or Bylaw of Provincial or Local Application provided that in the case of conflict or discrepancy the more stringent requirement shall apply. Similarly, unless otherwise specified, installation methods and standards of workmanship shall also conform to standards invoked by the aforementioned code. Where no particular material is specified for a certain use, the bidder shall select from the choice offered in the code in each case.

d. References to codes, standards, including manufacturers direction for installation shall be the latest edition thereof.

e. Provide a copy of all certificates of acceptance issued by Provincial or Local authorities.

f. Parts of the specification are written in short form, therefore it is understood that where a component of the work is stated in a heading followed by a material or operation, the words "Shall be", "Shall consist of" or similar words or phases are implied which denote complete supply and installation of such materials of operations for the component of work designated by the heading.

g. Where the aforementioned Code or this specification does not provide all information necessary for complete installation of any item, then the manufacturer's instructions for first quality workmanship shall be strictly complied with.

h. Where words in the Contract Documents occur in the singular number, they shall be taken as plural where applicable in accordance with the quantities required to satisfy the requirements of the Contract.

3. STANDARDS AND DEFINITIONS

a. Where a reference is made to specification standards produced by various organizations, conform to latest edition of standards, as amended and revised to date of Contract.

b. Have a copy of each specified standard which relates to your work available on the Site to be produced immediately on the Consultant’s request.

4. CO-OPERATION

a. Co-operate with and co-ordinate with other trades as required for the satisfactory and expeditious completion of the work. Take field dimensions relative to this work. Fabricate and erect work to suit field dimensions and field conditions. Provide all forms, templates, anchors, sleeves, inserts and accessories required to be fixed to or inserted in the work and set in place or instruct the related trades as to their location. Pay the cost of extra work caused by and make up time lost as the result of failure to provide the necessary co-operation, information or items to be fixed to or built in, in adequate time.

b. This Section shall provide other Sections with and be responsible for levels and dimensions which other sections require for establishing proper locations for their work.

5. MATERIAL STORAGE AND HANDLING

a. Store packaged materials in original, undamaged condition with manufacturers' labels and seals intact. Handle and store materials in accordance with manufacturers' and suppliers' recommendations and in a manner to prevent damage to materials during storage and handling.

6. SITE VISIT

a. All bidders submitting tenders for this work shall first examine the site and all conditions therein. All tenders shall take into consideration all such conditions as may affect the work under this contract, no claims for extras resulting from conditions existing at the time of tender will be accepted by the Owner.

7. EXAMINATION

a. All trades shall examine the existing conditions upon which their work depends. Report to the General Contractor with a copy to the consultant in writing defects in such work. The application of their work, or any part of it, shall be deemed acceptance of the work upon which their work, or that part of it which has been applied depends.

b. Drawings are, in part, diagrammatic and are intended to convey scope of work and indicate general and approximate location, arrangement and sizes of building components.

8. CONSTRUCTION SAFETY

a. Observe construction safety measures of the latest edition of the National Building Code Part 8, Provincial Government Workers/ Workers Compensation Board and municipal authority provided in any case of conflict or discrepancy more stringent requirements shall apply.

b. Comply with requirements of FCC no. 301.

c. Ensure no part of Work is subjected to loading that will endanger its safety or will cause permanent deformation.

d. Design and construct falsework in accordance with CSA S269.2.

e. Operate such equipment only by qualified hoist or crane operators, and maintain current inspection certificate.

f. Design and Construct Scaffolding in accordance with CSAS269.2.

g. Comply with the requirements of the Fall Protection & scaffolding Regulations, Province of Prince Edward Island 1988.

h. Each user of equipment or tools shall be appropriately trained and be responsible to examine for sufficiency before use. Make equipment and tools safe if necessary, or notify the Contractor in writing that user will not commence work with such tools until it is made safe.

i. Comply with the requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and comply regarding labelling and

provision of material safety data sheets.

.1 Have a copy of WHMIS data sheets available at the workplace on delivery of materials.

9. PROTECTION

a. Take reasonable and required measures, including those required by authorities having jurisdiction to protect the public and those employed on work from bodily harm and to protect adjacent public and private property from damage. Make full restitution for such harm and damage resulting from failure to take adequate protective measures. Make good damage to work from whatever cause.

b. Take all necessary precautions to guard site, premises, materials and the public at times other than when supervised work is in progress.

c. Provide and maintain in working order, suitable Underwriters' labelled, fire extinguishers and locate in prominent positions to approval of authorities having jurisdiction.

d. Provide all signs, ramps, barricades and hoarding and protective measures necessary to the safe execution of the work and protection of the public.

e. Protect, relocate and maintain existing, active services wherever they are encountered. Wherever inactive services are encountered, cap them off and remove the unwanted portion, with the approval of the authorities having jurisdiction or the public utility concerned, in the manner approved by them.

f. All trades shall protect previously installed work while carrying out their own work.

g. Damaged work shall be made good by appropriate trades but at the expense of those causing damage.

h. Attach and fasten fixtures and fittings in place in safe, sturdy, secure manner so that they cannot work loose or fall or shift out of position during the occupancy of building as a result of vibration or other causes in normal use.

i. Protect existing buildings, landscaping, curbs, roads and lanes and utilities. If, during work, any buildings, landscaping, curbs, roads and lanes are damaged, repair or replace them at no extra expense to the Owner.

j. Provide safety helmets for Consultants, Owner's representatives and any other authorized visitors to site if required.

10. FASTENINGS

a. Supply all fastenings, anchors and accessories and adhesives required for

fabrication and erection of the work.

b. Exposed metal fastenings and accessories shall be of same texture, colour and finish as base metal on which they occur.

c. Exterior anchors for windows and roofing sheet metal and anchors occurring on or in an exterior wall shall be noncorrosive or hot dip galvanized steel.

d. Anchoring and fastening devices or adhesive shall be of appropriate type and shall be used in sufficient quantity in such a manner as to provide positive permanent anchorage of the unit to be anchored in position. Install anchors at spacing to provide for required load carrying capacity.

e. Keep exposed fastenings to a minimum, evenly spaced and neatly laid out.

f. Supply adequate instructions and templates and, if necessary, supervise installation where fastenings or accessories are required to be built into work of other trades.

g. Fastenings shall be of permanent type. Wood plugs are not permitted.

h. Fastenings which cause spalling or cracking of material to which anchorage is being made are not permitted.

i. Do not use powder actuated fastening devices which are stressed in withdrawal on any part of this work without written approval from the Consultant. Take particular stringent safety precautions when using powder actuated fastenings. Only low velocity plunger-type are permitted.

11. CUTTING, FITTING, AND PATCHING

a. All cutting and patching shall be the responsibility of the General Contractor.

b. All excavation backfilling and concrete work required to complete the work of Section 15 and or Section 16 shall be the responsibility of the General Contractor.

c. Where new work connects with existing and where existing work is altered, cut and patch and make good to match existing work.

d. Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.

12. EXISTING SERVICES

a. Where work involves breaking into or connecting to existing services, submit work schedule sufficiently in advance to allow coordination of possible interruption with the Owner. Confirm each interruption 24 hours immediately prior to scheduled date of implementation.

13. ENVIRONMENTAL PROTECTION

a. Ensure that pollution and environmental control of construction activities are exercised during the work to requirements of the federal and provincial environmental acts; including, but not limited to, the Prince Edward Island Environmental Protection Act.

14. HAZARDOUS MATERIAL

a. Should material resembling hazardous materials [other than those identified within the Contract Documents], including, but not limited to spray or trowel applied asbestos, be encountered in course of work; stop work immediately. Do not proceed until written instructions have been received from Consultant.

b. Any material which contains asbestos that is disturbed or removed during construction work (see Asbestos Content Report (where applicable)), shall be removed in accordance with the regulations set out by the Occupational Health & Safety Act. All costs for proper cutting, removal and disposal of all asbestos on this contract shall be included in Tender. Refer also to Section 2C (as applicable) .

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

15. CLEANING

a. All rubbish and construction debris must be removed from all the site on a regular basis, so that the site is maintained in a clean, safe condition. Materials removed are to be disposed of in a manner acceptable to the Provincial Department of Environment and Energy.

b. Vacuum clean all areas prior to painting and close all areas after completion of painting to restrict access to authorized persons.

c. On completion of work, by other trades, mop clean all resilient flooring strip using wet method to remove all layers of new or existing finish. Reseal with one coat sealer and two coats wax (wax to contain a minimum of 22% solids). Vacuum Clean all carpets. All cleaning to be carried out by competent cleaners.

d. Dust and clean all surfaces including glass (interior and exterior), doors and hardware.

e. Arrange and pay for replacement of heating, ventilation and air conditioning filters if operated during construction.

16. FIRES

a. Do not light fires of any sort to burn rubbish resulting from the work.

17. ACCESS TO SITE

a. Access to site shall be directed by the Consultant.

18. SITE LIMITS

a. The limits of the site are shown on the drawings and all activity relating to the contract shall be confined within these limits.

19. MAINTENANCE MANUALS

Prior to the issuance of the final certificate the following items shall be assembled and incorporated into a three-ring binder complete with table of contents:

a. All warranties and guarantees submitted by manufacturers.

b. The printed or typewritten copies of recommended maintenance procedures for all items requiring regular maintenance.

c. A copy of all approved Shop drawings.

20. PERMITS

Obtain and pay for all required permits, licenses, and inspections; required by applicable laws and regulations. Except the building permit which will be paid for by the Owner.

21. TOBACCO PRODUCT USAGE BAN

The use of Tobacco products is not permitted within the building or property.

a. Property - Includes all lands and buildings under the control of the department of health.

b. Tobacco Products - Includes cigarettes, cigars, pipes, chewing tobacco, snuff, and any other products containing or reasonably resembling tobacco or tobacco products except approved cessation products used in approved cessation programs.

c. Tobacco Usage Ban - Includes smoking, chewing, dipping or any other form of use of tobacco products.

End

1. CUTTING AND PATCHING

a. Cut, patch and make good to leave work in a finished condition where new work connects with existing.

b. Sections responsible for various categories of cutting and patching are as follows:

1. All cutting and patching shall be the responsibility of the General Contractor.

c. Carry out cutting and patching in the following manner:

1. Regardless of which Subcontractor or Section of the specifications is responsible for any portion of cutting and patching work, in each case tradesmen qualified in the work being cut and patched shall be employed to carry out or supervise this work to ensure that it is correctly done.

2. Where new work connects with existing and where existing work is altered, cut and patch and make good to match existing work.

3. Do not cut, drill or sleeve load-bearing members without first obtaining The Consultant's written authority for each condition.

4. Drill work carefully, leaving clean hole not larger than required. This applies to both new and existing work.

5. Cut holes after they are located by trades requiring them.

6. Bulkheads to be constructed with steel studs, furring and seam filled gyproc.

7. Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.

8. Co-ordinate work of your Section with work of other Sections, taking into account existing installations to assure best arrangement of components in available space. For critical locations consult with Consultant before commencing work.

9. At penetrations of fire rated ceilings, walls and floor/roof assemblies, completely seal voids with fire rated material, fill thickness of constructed element

END

1. GENERAL

.1 This section shall be responsible for the demolition and removal of items indicated on the drawings and those which must be demolished to allow for new construction, including mechanical or electrical components, which will be demolished under the supervision of the section sub-contractor.

2. PROTECTION

.1 Prevent movement, settlement or damage of structures and parts of existing building to remain. Provide bracing, shoring and underpinning as required. Make good damage caused by demolition.

.2 Take precautions to support affected structures and, if safety of building services appears to be endangered, cease operations and notify Architect.

.3 If during the demolition work a situation should develop or a condition be exposed which has the potential to endanger the safety of the occupants or users of the building or structure in which demolition work is being carried out, or occupants or users of adjoining buildings or structures, the Contractor will cease operations, take whatever emergency action, in the Contractor's opinion, is required to ensure the immediate safety of the occupants or users of these buildings or structures, and notify the Engineer before continuing with the work.

3. DESCRIPTION OF WORK

.1 Perform all demolition removal and restitution as indicated, implied and required to properly complete the work of this contract.

.2 Refer closely to drawings and specifications to determine extent of demolition requirement.

.3 Demolition drawings serve only as a guide to demolition requirements. Location of new components and finishes where components exist implies removal of such components prior to new construction.

.4 Demolition of existing components, required to facilitate construction of new work is required.

4. EXECUTION

.1 Dispose of demolished materials in accordance with authorities having jurisdiction.

.2 Do not disrupt active or energized utilities and services.

.3 At the end of each days work leave the site in a safe condition, with no danger of any component toppling or falling.

.4 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.

.5 Do not sell or burn materials on site.

.6 Remove contaminated or dangerous materials, as defined by authorities having jurisdiction relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.

.7 All demolished materials become the property of the Contractor, unless indicated otherwise, and are to be removed from the site and disposed of in a manner and in a location acceptable to Provincial Authority governing such disposal.

End

1. GENERAL

This section shall provide all labour and material to clean the existing ceiling grid, install new acoustic ceiling tile as well as reinstall mechanical and electrical components normally supported by the ceiling tile. New suspension grid is to be installed in areas noted on drawings.

2. MATERIALS

.1 Acoustic Ceiling Tile

.1 Acoustic units for suspended non-fire rated ceiling systems:

.1 Type: Fissured, lay in, square edge, non-fire rated.
.2 Content: Mineral fibre, .6 lb/SF.
.3 Surface Finish: Factory applied vinyl latex paint.
.4 Colour: White
.5 Size: 24 inches x 48 inches x 5/8 inches for non-fire rated exposed tee grid.
.6 Armstrong Whispertone fissured mineral fibre ceiling tile (tiles to match existing in replacement areas).

.2 Acoustic units for suspended fire-rated ceiling systems:

.1 Type: Fissured, lay in, square edge, UL lable.
.2 Content: Mineral fibre, 1 lb/SF.
.3 Surface Finish: Factory applied vinyl latex paint.
.4 Colour: White
.5 Size: 24 inches x 48 inches x 5/8 inches for ULC fire-rated exposed tee grid.
.6 Armstrong #823, 5/8 fire code, Georgian Pattern (tiles to match existing in replacement areas).

.3 Provide sample tile prior to ordering material or commencing work on site.

.2 Suspension System (Required Where Noted On Plan)

.1 Heavy duty system to ASTM C635-78.

.2 Basic materials for suspension system: commercial quality cold rolled steel electro-galvanized finish.

.3 Exposed tee bar grid components: shop painted satin sheen white. Components die cut. Main tee with double web, rectangular bulb and 25 mm rolled cap on exposed face. Cross tee with double web and rectangular bulb; web extended to form positive interlock with main tee webs; lower flange extended and offset to provide flush intersection with

fire-rated controlled wall moulding to be channel for angle shape expansion in similar finish.

.4 Hanger wire: galvanized soft annealed steel wire, 3.6 mm diameter for access tile ceiling to ULC tested design requirements for fire rated assemblies.

.5 Hanger inserts: purpose made.

.6 Accessories: splices, clips, wire ties, retainers and wall moulding flush, to complement suspension system components.

WORKMANSHIP

.1 Clean existing suspension system with a solution of water and heavy duty detergent to remove dirt, smudges and grease.

.2 Scrape top surface at T-bar to remove any small sections of tile surface that have stuck to T-bar.

.3 Install new tile in existing grid, accurately cut tile to fit around projections and supported items.

.4 Install new suspension system as follows:

.1 Install hangers.

.2 Lay out centre line of ceiling both ways, to provide balanced borders at room perimeter with border units of less than 50% of standard unit width.

.3 Ensure suspension system is co-ordinated with location of related components and other trades.

.4 Install wall mould to provide correct ceiling height. Finished ceiling system to be level within 1:1000.

.5 Complete suspension system to support superimposed loads, such as lighting fixtures, diffusers grilles and speakers.

.6 Interlock cross member to main runner to provide rigid assembly.

.7 Install suspension system to manufacturer’s instructions.

.8 Frame at openings for air diffusers, speakers, etc., and at changes in ceiling heights.

.9 Provide fire rated light boxes to ULC standards above all recessed light fixtures in rated areas.

.10 Provide hold-down clips in all rated ceilings with visible access tile at service locations.

End

1. GENERAL

.1 This section shall supply all labour and materials required to erect and finish the drywall in the locations shown on the drawings as per ASTM C 840 Application and Finishing of Gypsum Board.

2. MATERIALS

.1 Gypsum Board

.1 Standard board to ASTM C36/C 36M 16mm thick and Type X, 1200mm wide x maximum practical length, ends square cut, edges bevelled.

.2 Abuse Resistant board: Standard 16mm thick , firecode core when used in fire-rated partition, 1200mm wide x maximum practical length, ends square cut, edges bevelled.

.3 Water and Mold Resistant board to ASTM D 3273 and ASTM C 1396: Standard 16mm thick , firecode core when used in fire-rated partition, 1200mm wide x maximum practical length, ends square cut, edges bevelled.

.2 Metal Accessories:

.1 Casing Beads, corner beads, reveal beads, control joints and edge trim: to ASTM C 1047, metal, zinc-coated by electrolytic process, 0.5mm base thickness, perforated flanges, one peice length per location.

.3 Fastenings:

1. Drywall Screws: to ASTM C 1002.

2. Drywall Nails: to ASTM C 514

3. Adhesive: to CGSB 71-GP-25M

.3 Acoustic sealant: to CAN/CGSB-19.21-M87

.4 Joint Treatment Material:

1. Joint Compounds & Tape: to ASTM C475, asbestos free.

3. INSTALLATION

.1 In strict accordance with manufacturer's specifications.

.2 Gypsum board on ceilings shall be applied in longest lengths available to minimize end joints.

.3 Unnecessary joints shall be removed if directed by the Consultant, or these joints shall be back-blocked as per manufacturer’s recommendations.

.4 Joint treatment material shall be mixed according to manufacturer's printed instructions.

.5 Pre-filling: All "V" grooves formed by abutting radial edges of wallboard shall be filled flush to plane of taper with pre-fill compound. Excess compound beyond the "V" groove shall be struck clean leaving a flat joint for taping.

.6 Taping: After pre-fill has hardened, a thin, uniform layer of taping compound shall be applied to all joints and angles to be reinforced. Reinforcing tape shall be applied immediately, centred over joint, seated into compound. A skim coat shall follow immediately, but shall not function as a fill or second coat. Tape shall be properly folded and embedded in all angles to provide a true angle.

.7 Filling: After taping compound has hardened, topping compound shall be applied, filling board tape flush with surface. Fill coat shall cover tape and feather out slightly beyond taper. On joints with no taper, fill coat shall cover tape and feather out at least 100 mm on either side of tape. No fill coat is necessary on interior angles.

.8 Finishing: After topping compound is dry, a finishing coat of topping compound shall be spread evenly over and extending slightly beyond fill coat on all joints and feathered to a smooth, uniform finish. Over tapered edges, finished joint shall not protrude beyond plane of surface. All taped angles shall receive a finish coat to cover tape and taping compound, and provide a true angle. Where necessary, sanding shall be done between

coats and after final application of compound to provide a smooth surface, ready for decoration.

.9 This Contractor shall promptly remove from the site all debris resulting from this work.

.10 Any jointing material which became adhered to adjacent surfaces must be removed by this Contractor, leaving those surfaces in a condition similar to when he started work.

End

1. GENERAL

This section shall provide all labour and materials to paint all walls, existing ceilings, window trims, existing doors, frames within the renovation area.

.1 References:

.1 Canadian Painting Contractors' Architectural (CPCA) Painting Specifications Manual, latest edition.

.2 Canadian General Standards Board (CGSB) latest edition for specified paints

.3 National Fire Code of Canada 1995.

.2 Quality Assurance:

.1 Walls. No defects visible from a distance of 1000 mm at 90 degrees to surface.

.2 Ceilings. No defects visible from floor at 45 degrees to surface when viewed using final lighting source.

.3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

.3 Environmental Requirements:

.1 Apply paint finishes only when temperature at location of installation can be satisfactorily maintained within manufacturers recommendations.

.2 Apply paint finish only in areas where dust is no longer being generated by related construction operations such that airborne particles will not affect the quality of the finished surface.

.3 Apply paint only when surface to be painted is dry, properly cured and adequately prepared.

.4 Extra Materials:

.1 Submit one - one - 2 litre can of each type and colour of finish coating. Identify colour and paint type in relation to established colour schedule and finish formula.

2. MATERIALS

.1 Qualified products: Paint finishes shall be selected by the Consultant from any of the following brand paint materials for interior paint application on this project:

.1 Olympic
.2 Behr
.3 Benjamin Moore
.4 Para
.5 Pittsburgh
.6 Pratt & Lambert

.2 Maintenance grade paint will not be acceptable.

.3 Paint materials for each coating formula to be products of a single manufacturer.

.4 Paint materials: to CGSB Standards listed in Finishing formula.

.5 Colours:

.1 The Consultant will provide colour schedule after contract award.

.2 Interior colour schedule will be based upon the selection of no more than three base colours and two trim colours.

.3 Selection of colours will be from manufacturers full range of colours.

.4 Perform all colour tinting operations prior to delivery of paint to site.

.6 Interior Finishes:

.1 For new gypsum board walls in finished areas apply:

.1 One coat primer/sealer
.2 Two coats scrubbable latex base paint satin finish

.2 For existing painted walls apply:
.1 One coat of superstick primer
.2 Two coats scrubbable latex base paint satin finish .

.3 For existing painted concrete block masonry walls apply:
.1 Two coats scrubbable latex base paint satin finish

.4 For existing unpainted masonry wall repairs apply:
.1 One coat primer/sealer
.2 One coat block filler

.3 Two coats scrubbable acrylic latex base satin finish

.5 For existing ceilings apply:
.1 One coat of superstick primer
.2 Two coats scrubbable latex base paint flat finish .

.6 For new wood doors and trim to remain apply:
.1 Sand doors fully
.2 One coat alkyd primer/sealer
.3 Two coats melamine (alkyd polyurethane) enamel. Paint all six sides of the door.

.7 For primed ferrous metal surfaces (i.e. metal door frames) apply:
.1 One coat primer/sealer
.2 Two coats scrubbable latex base paint semi-gloss finish .

3. INSTALLATION

.1 Perform all painting operations in accordance with CAN/CGSB-85.100 except where specified otherwise.

.2 Perform all painting operations in accordance with CPCA Painting Specifications Manual except where specified otherwise.

.3 Preparation:

.1 Remove electrical cover plates, light fixtures, surface hardware on doors, door stops, and all other surface mounted fittings and fastenings prior to undertaking any painting operations. Store for re-installation after painting is completed.

.3 As painting operations progress, place “WET PAINT” signs in occupied areas to approval of the Consultant.

.4 Protection:

.1 Protect existing building surfaces not to be painted from paint spatters, markings and other damage. If damaged, clean and restore such surfaces as directed by the Consultant.

.2 Cover or mask floors, windows and other ornamental hardware adjacent to areas being painted to prevent damage and to protect from paint drops and splatters. Use non-staining coverings.

.3 Protect items that are permanently attached such as Fire Labels on doors and frames.

.4 Protect factory finished products and equipment.

.5 Protect passing pedestrians and the general public in and about the building.

.5 Cleaning:

.1 Clean all surfaces to be painted as follows:

.1 Remove all dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
.2 Wash existing surfaces with solution of T.S.P. bleach and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
.3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
.4 Allow surfaces to drain completely and allow to dry thoroughly.

.6 Surface Preparation:

.1 Prepare new wood surfaces to CGSB 85-GP-1M.
.1 Apply vinyl sealer to CAN/CGSB-1.126 over knots, pitch, sap and resinous areas.
.2 Apply wood filler to nail holes and cracks.

.2 Where possible, prime all surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.

.3 Prepare plaster and wallboard surfaces to CGSB 85-GP-33M.

.7 Application

.1 Apply paint by brush, roller or air sprayer. Conform to manufacturer's application instructions unless specified otherwise.

.2 Sand and dust between each coat to remove visible defects.

.8 Mechanical / Electrical Equipment

.1 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.

.2 Do no paint over name plates.

END

1 Documents Required

.1 Maintain at job site, one copy each of the following:
- .1 Contract drawings.
- .2 Specifications.
- .3 Addenda.
- .4 Reviewed shop drawings.
- .5 Change orders.
- .6 Other modifications to Contract.
- .7 Field test reports.
- .8 Copy of approved work schedule.
- .9 Manufacturers' installation and application instructions.

2 Work Schedule

.1 Provide within 10 working days after Contract award, selected project milestones and construction schedule showing anticipated progress stages and final completion of work within time period required by Contract documents.

.2 Provide in form acceptable to Engineer, within 10 working days after Contract award, schedule showing dates for:
- .1 Submission of shop drawings, material lists and samples.
- .2 Delivery of equipment and materials:
- .3 Commencement and completion of work of each Section of Specification.
- .4 Final completion date within time period required by Contract documents.

.3 Interim reviews of work progress based on work schedule will be conducted as decided by Engineer and schedule updated by Contractor in conjunction with and to approval of Engineer.

3 Cost Breakdown

.1 Before submitting first progress claim, submit breakdown of Contract price in detail as directed by Engineer. After approval by Engineer, this cost breakdown will be used as the basis for progress payments.

4 Contractor's Use of Site

.1 Use of site: exclusive and complete for execution of work, in cooperation and with approval of the Department of Transportation & Infrastructure Renewal Officials.

5 Project Meetings

.1 Hold project meetings at times and locations approved by Engineer.

.2 Notify participants of meetings.

.3 Record minutes of meetings, and distribute to participants within 3 days of meeting.

6 Setting Out of Work

.1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.

.2 Provide devices needed to lay out and construct work.

.3 Supply stakes and other survey markers required for laying out work.

7 Location of Equipment and Fixtures

.1 Locate equipment as indicated or specified.

.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

.3 Submit field drawings to indicate relative position of various services and equipment when required by Engineer.

8 Cutting, and Patching

.1 Execute cutting, fitting and patching as required to make work fit properly.

.2 Make cuts with clean, true, smooth edges.

.3 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.

9 Existing Services

.1 Where Work involves breaking into or connecting to existing services, carry out work at times directed by Consultant and/or authorities having jurisdiction, with minimum of disturbance to pedestrian and vehicular traffic and to the services being provided.

.2 Submit schedule to and obtain approval from Engineer for any shut-down or closure of active service or facility. Adhere to approved schedule.

.3 Where unknown services are encountered, immediately advise Engineer and confirm findings in writing.

.4 Record locations of maintained, re-routed and abandoned service lines.

10 Alterations, Additions or Repairs to Existing Building

.1 Where security has been reduced by work of Contract, provide temporary means to maintain security.

.2 Coordinate security with the Department of Transportation & Infrastructure Renewal and with Security personnel.

11 Additional Drawings

.1 Engineer may furnish additional drawings for clarification. These additional drawings have same meaning and intent as if they were included with plan referred to in Contract documents.

END

PART 1 - GENERAL

1.1 Section Includes

.1 Work covered by Contract Documents.

.2 Contract Method.

.3 Work sequence.

.4 Contractor use of premises.

.5 Owner occupancy and equipment use.

1.2 Related Sections

.1 Section B - Instructions to Bidders.

.2 Section E - Contract Tender.

.3 Division 1 - General Requirements: All sections.

1.3 Work Covered by Contract Documents

.1 Single Contract: This project includes but not limited to demolition, modification to existing areas to accommodate a new Communications Room which includes steel stud walls, drywall, fire rated t-bar ceilings, firestoppping, split AC units, ventilation, lighting, power outlets, data wiring, patch panels, terminations, grounding, cable tray and installation of owner supplied equipment including racks and fiber optic cables.

1.4 Contract Method

.1 Single Contract: Construct the Work under a single stipulated price contract.

1.5 Work Sequence

.1 Construct work in stages to accommodate Owner's continued supply of power during construction.

.2 Coordinate Progress Schedule and coordinate with Engineer during construction.

1.6 Contractor Use of Premises

.1 Contractor shall limit use of premises for storage, and for access, to allow:
   .1 Owner occupancy.
   .2 Work by other subcontractors.

1.7 Owner Occupancy and Equipment Use

.1 Owner will occupy premises and periodically utilize equipment during entire construction period for execution of normal operations.

.2 Cooperate with Owner in scheduling operations to minimize conflict and power interruptions and to facilitate Owner's usage.

END

1 General

.1 This section specifies general requirements and procedures for contractors submissions of shop drawings, product data, samples and mock-ups to Engineer for review. Additional specific requirements for submissions are specified in individual sections of Divisions 2 to 16.

.2 Do not proceed with work until relevant submissions are reviewed by Engineer.

.3 Contractor's responsibility for errors and omissions in submission is not relieved by Engineer's review of submissions.

.4 Notify Engineer, in writing at time of submission, identifying deviations from requirements of Contract Documents, from Industry Standards and/or of any contravention of pertinent Codes or Regulations.

.5 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Engineer's review of submission, unless Engineer gives written acceptance of specific deviations. No equipment shall be ordered until reviewed shop drawings for same have been received. Final review will not be given until the complete system is proven satisfactory in operation and meets the requirements of the specification.

.6 Make any changes in submissions which Engineer may require consistent with Contract Documents and resubmit as directed by Engineer.

.7 Notify Engineer, in writing, when resubmitting any revisions other than those requested by Engineer.

2. Submission Requirements

.1 Coordinate each submission with requirements of work and Contract Documents. Individual submission will not be reviewed until all related information is available.

.2 Allow ten days for Engineer's review of each submission.

.3 Submissions shall include:
- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
  - .1 Subcontractor
  - .2 Supplier
  - .3 Manufacturer
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .5 Details of appropriate portions of Work as applicable.
  - .1 Fabrication
  - .2 Layout, showing dimensions, including identified field dimensions and clearances.
  - .3 Setting or erection details.
  - .4 Capacities
  - .5 Performance characteristics
  - .6 Standards
  - .7 Operating weight
  - .8 Wiring diagrams
  - .9 Single line and schematic diagrams
  - .10 Relationship to adjacent work

.4 After Engineer's review, distribute copies.

3. Shop Drawing

.1 Shop drawings: original drawings, or modified standard drawings provided by Contractor to illustrate details of portions of Work which are specific to project requirements.

.2 Submit shop drawings as follows:
- .1 One electronic copy in PDF format.

.3 Cross-reference shop drawing information to applicable portions of Contract Documents.

4. Product Data

.1 Product data: manufacturers' catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.

.2 Submit electronic copy to the Consultant.

.3 Delete information not applicable to project.

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

.5 Cross-reference product data information to applicable portions of Contract Documents.

5. Samples

.1 Samples: examples of materials, equipment, quality, finishes, workmanship.

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

END

1 Access

.1 Access to the site will be made available by the Department of Transportation and Infrastructure Renewal, 11 Kent Street Charlottetown, P.E.I.

2 Parking

.1 Parking space will be made available on-site. Contractors to abide by the Provincial buildings' parking rules and regulations.

3 Power

.1 Arrange with the Owner temporary electrical power supply for construction in accordance with governing regulations and ordinances.

4 Removal of Temporary Facilities

.1 Remove temporary facilities from site when directed by Engineer.

END

1 Fires

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

.2 Where fires or burning permitted, prevent staining or smoke damage to structures, materials or vegetation which is to be preserved. Restore, clean and return to new condition stained or damaged work.

.3 Provide supervision, attendance and fire protection measures as directed.

2 Disposal of Wastes

.1 Do not bury rubbish and waste materials on site unless approved by Engineer.

.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

3 Drainage

.1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.

.2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

END

1 General

.1 Use new material and equipment unless otherwise specified.

.2 Within 7 days of written request by Engineer, submit following information for materials and equipment proposed for supply:
- .1 name and address of manufacturer,
- .2 trade name, model and catalogue number,
- .3 performance, descriptive and test data,
- .4 manufacturer's installation or application instructions,
- .5 evidence of arrangements to procure.

.3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.

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

2 Manufacturers' Instructions

.1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.

.2 Notify Engineer in writing of any conflict between these specifications and manufacturer's instructions. Engineer will designate which document is to be followed.

3 Fastenings - General

.1 Provide metal fastenings and accessories same texture, colour and finish as base metal in which they occur. Prevent electrolytic action between dissimilar metals. Use non-corrosive fasteners, anchors and spacers for securing exterior work.

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

.3 Keep exposed fasteners to minimum; space evenly and lay out neatly.

.4 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

.5 Obtain Engineer's approval before using explosive actuated fastening devices. If approval is obtained comply with CSA Z166.

4 Fastenings- Equipment

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

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

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

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

5 Delivery and Storage

.1 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact.

.2 Prevent damage, adulteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from site.

.3 Store material and equipment in accordance with suppliers' instructions.

.4 Touch-up damaged factory finished surfaces to Engineer's satisfaction. Use primer or enamel to match original. Do not paint over name plates.

6. Conformance

.1 When material or equipment is specified by standard or performance specifications, upon request of Engineer, obtain from manufacturer an

.1 (Cont'd)
independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.

END

1. General

.1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

.2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.3 Prevent accumulation of waste which creates hazardous conditions.

.4 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

2. Materials

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

3. Cleaning During Construction

.1 On daily basis, maintain premises including roofs, free from debris and waste material.

.2 Maintain the work, including roof and building systems, at least on a daily basis free from accumulations of waste material and debris.

.3 Provide on-site containers for collection of waste materials, and debris.

.4 Remove waste materials and debris from site.

.5 Vacuum clean building areas when ready to receive finish painting, and continue vacuum cleaning on an as-needed basis until building is ready for substantial completion or occupancy.

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

4. Final Cleaning

.1 Remove grease, dust dirt, stains, labels, fingerprints, and other foreign materials, from interior and exterior finished surfaces including glass and other polished surfaces.

.2 Clean lighting, lenses, and other lighting surfaces.

5. Financial Responsibility

.1 Contractor shall be financially responsible for cleaning at all stages of the work as outlined above.

END

1 Record Drawings

.1 Engineer will provide two sets of white prints for record drawing purposes.

.2 Maintain project record drawings and record accurately deviations from Contract documents caused by site conditions and changes ordered by Engineer.

.3 Record changes in red.

.4 Record following information:
.1 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
.2 Field changes of dimension and detail.
.3 Changes made by Change Order or Field Order.

.5 At completion of project and prior to final inspection, neatly transfer notations to second set and submit both sets to Engineer.

END

1 Manual

.1 An organized compilation of operating and maintenance data including detailed technical information, documents and records describing operation and maintenance of individual products or systems as specified for each Division.

2 General

.1 Assemble, coordinate, bind and index required data into Operation and Maintenance Manual.

.2 Submit complete Operation and Maintenance Manual to Engineer prior to application for Certificate of Substantial Completion of project.

.3 Submit 3 copies in English.

.4 Organize data into same numerical order as contract specifications.

.5 Material: label each section with tabs protected with celluloid covers fastened to hard paper dividing sheets.

.6 Type lists and notes.

.7 Drawings, diagrams and manufacturers literature must be legible.

3 Contents

.1 Binder 1:

.1 Cover sheet containing:

.1 Date submitted.

.2 Project title, location and project number.

.3 Names and addresses of Contractor and all Sub-contractors.

.2 Table of Contents of individual binder.

.3 Provide data as specified in individual sections of Division 16.

.1 List of equipment including service depot.

.2 Nameplate information including equipment number, make, size, capacity, model number and serial number.

.1 Binder 1:(Cont'd)
- .3 (Cont'd)
  - .3 Parts list.
  - .4 Installation details.
  - .5 Operating instructions.
  - .6 Maintenance instructions for equipment.
  - .7 Maintenance instructions for finishes.
- .4 Warranties, guarantees.
- .5 Copies of approvals and certificates.

.2 Shop drawings:
- .1 Bind separately one complete set of reviewed final shop drawings and product data.

END

1 General

.1 This section covers items common to Sections of Division 16. This section supplements requirements of Division 1.

2 Codes and Standards

.1 Do complete installation in accordance with CSA C22.1,latest edition in effect, except where specified otherwise.

.2 Comply with CSA Certification Standards and Electrical Bulletins in force at time of tender submission.

.3 Do overhead and underground systems in accordance with CSA C22.3No.1-M1979 except where specified otherwise.

.4 Abbreviations for electrical terms: to CSA Z85-1983.

3 Permits, Fees and Inspection

.1 Submit to Electrical Inspection Department and Supply Authority necessary number of drawings and specifications for examination and approval prior to commencement of work.

.2 Pay associated fees.

.3 Engineer will provide drawings and specifications required by Electrical Inspection Department and Supply Authority at no cost.

.4 Notify Engineer of changes required by Electrical Inspection Department prior to making changes.

.5 Furnish Certificates of Acceptance from Inspection Department and Authorities having jurisdiction on completion of work.

4 Shop Drawings, Product Data and Samples

.1 Submit shop drawings, product data and samples in accordance with Section 01340.

.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.

5 Operation and Maintenance Data

.1 Provide operation and maintenance data for incorporation into operation and maintenance manual specified in Section 01730.

.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 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.

6 Maintenance Materials

.1 Provide maintenance materials in accordance with Section 01730.

.2 Refer to sections in this Division for requirements.

7 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 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.

.3 (Cont'd)

8 Voltage Ratings

.1 Operating voltages: to CAN3-C235-83.

.2 Motors, electric heating, 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.

9 Materials and Equipment

.1 Provide materials and equipment in accordance with Section 01600.

.2 Equipment and material to be CSA certified. Where there is no alternative to supplying equipment which is not CSA certified, obtain special approval from Inspection Department.

.3 Factory assemble control panels and component assemblies.

10 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 coats of finish enamel.
.1 Paint outdoor electrical equipment "equipment green" finish to EEMAC Y1-1-1955.
.2 Paint indoor switchgear and distribution enclosures light grey to EEMAC 2Y-1-1958.

.2 Clean and touch up surfaces of shop painted equipment scratched or marred during shipment or installation, to match original paint.

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

11 Equipment Identification

.1 Identify electrical equipment with nameplates and labels as follows:

.2 Nameplates:
.1 Lamicoid 1/8" (3mm) thick plastic engraving sheet, black face, white core, self adhesive unless specified otherwise.

NAMEPLATE SIZES

Size 1	3/8 "	x 2"(10x50mm)	1 line	1/8" high letters 3mm
Size 2	1/2 "	x 3"(12x70mm)	1 line	1/5" high letters 5mm
Size 3	1/2 "	x 3"(12x70mm)	2 lines	1/8" high letters 3mm
Size 4	3/4 "	x 3-1/2"(20x90mm)	1 line	8/25" high letters 8mm
Size 5	3/4 "	x 3-1/2"(20x90mm)	2 lines	1/5" high letters 5mm
Size 6	1"	x 4"(25x100mm)	1 line	1/2" high letters 12mm
Size 7	1"	x 4"(25x100mm)	2 lines	1/4" high letters 6mm

.3 Labels:
.1 Embossed plastic labels with 1/4"(6mm) high letters unless specified otherwise.

.4 Wording on nameplates and labels to be approved by Engineer prior to manufacture.

.5 Allow for average of twenty-five (25) letters per nameplate and label.

.6 Identification to be English.

.7 Nameplates for terminal cabinets and junction boxes to indicate system and/or voltage characteristics.

.8 Terminal cabinets and pull boxes: indicate system and voltage.

12 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 C22.1-1998.

13 Wiring Terminations

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

14 Manufacturers' and CSA labels

.1 Visible and legible after equipment is installed.

15 Warning Signs

.1 Provide warning signs, as specified and/or to meet requirements of Inspection Department and Engineer.

.2 Use decal signs, minimum 7"x10" (175 x 250mm) size.

16 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.

17 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.

.3 Arrange for installation of temporary doors for rooms containing electrical distribution equipment. Keep these doors locked except when under direct supervision of electrician.

18 Load Balance

.1 Measure phase current to panelboards with normal loads (lighting) operating at time of acceptance. Adjust branch circuit connections as required to

.1 (Cont'd)
obtain best balance of current between phases and record changes.

.2 Submit, at completion of work, a report listing phase and neutral currents on panelboards operating under normal load. State hour and date on which each load was measured, and voltage at time of test.

19 Conduit and Cable Installation

.1 Install conduit, and sleeves prior to pouring of concrete. Sleeves through concrete: sheet metal, sized for free passage of conduit, and protruding 2".

.2 Install cables, conduits, and fittings to be embedded or plastered over, neatly and close to building structure so furring can be kept to minimum.

20 Sealing

.1 Where cables or conduits pass through non fire-rated floors, walls or roof, provide internal and external sealing thereto.

.2 Retain the services of a specialty sealant contractor for the work required.

.3 Comply with manufacturer's installation instructions for all sealant applications.

.4 For non fire-rated locations, sealant shall be silicone that meets requirements of CGSB 19-GP-23, for the size of the joint required and the types of materials being bonded.

.5 For fire-rated locations, the fire stop shall meet the requirements of ULC with regards to the type of assembly and the fire separation.

21 Performance 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.

.1 (Cont'd)
.3 Each receptacle to be tested for correct wiring, open ground, reverse polarity, open hot, open neutral, hot on neutral, hot and ground reversed with open hot.

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

.3 Insulation resistance testing:
.1 Megger circuits, feeders and equipment up to 350V with a 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 Carry out tests in presence of Engineer.

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

.6 Submit test results for Engineer's review.

22 Co-ordination of Protective Devices

.1 Ensure circuit protective devices such as overcurrent trips, relays, fuses, are installed to values and settings as indicated.

23 Cleaning

.1 Do final cleaning in accordance with Section 01710.

.2 At time of final cleaning, clean lighting reflectors, lenses, and other lighting surfaces that have been exposed to construction dust and dirt. Clean the insides and outsides of panelboards, splitters and other electrical equipment, and completely remove all debris and tools from the project. Owner to inspect interiors prior to closure.

24 Standard of Acceptance

.1 Means that item named meets specifications in all respects regarding performance, quality of material

.1 (Cont'd)
and workmanship, and is acceptable to Engineer without qualification. Equipment proposed shall meet same standards and must be approved ten (10) days prior to tender closing.

.2 Requests for approvals will only be accepted from manufacturers or their representatives.

.3 "Approved Equals" will be acceptable as a base bid item.

.4 "Approved Alternates" will be indicated with the tender on the form supplied, indicating price increase or decrease to the bid, should the alternate be accepted.

25 Cutting and Patching

.1 All cutting and patching shall be provided by the Contractor in accordance with Sections 1C and 01005.

.2 This Contractor to provide layout drawings and supervision for all openings required for the completion of their work.

26 Access Doors

.1 Wherever any item of electrical equipment requiring accessibility, maintenance or adjustment is concealed, ensure adequate access, or provide an Access Door and arrange for its installation by the Division in whose work it occurs.

.2 Doors shall be sized for proper and easy access, and located to suit the concealed device. In removable acoustic panel ceilings, no Access Doors are required, but after completion of the ceilings, install approved coloured marking devices at four corners of each panel below all points requiring access, or where so directed by the Consultant. Use ULC labelled rated Access doors in all fire rated walls and ceilings, which act as fire barriers and match the door type with the ceiling type and applied finish.

.3 Submit for the Consultant's review, floor plans and shop drawings showing the size, type and exact

.3 (Cont'd)
location of all Access doors and tiles requiring markers. Owner to confirm location.

.4 All Access Doors and tiles requiring removal shall be shown on the Record Drawings. Notations adjacent to each Access door shown on the Drawings, shall indicate frequency of maintenance required for item or items above or behind the Door.

27 Contract Drawings

.1 The Drawings for the Electrical work are diagrammatic performance Drawings only, intended to convey the scope of work and indicate the general arrangement and approximate location of apparatus and fixtures, and the approximate sizes and locations of equipment and outlets. The Drawings do not intend to show Architectural, Mechanical or Structural details.

.2 Do not scale or measure Drawings, but obtain information regarding accurate dimensions, from the dimensions shown on the Architectural Drawings, or by site measurements. Follow the Electrical Drawings for laying out the work.

.3 Refer to the other Division's Coordination Drawings, to become familiar with all conditions affecting the work, and verify suitable spaces exist, in which the equipment will be installed.

.4 Make, at no additional cost, any changes or additions to materials and equipment necessary to accommodate Structural conditions (offsets around beams, columns, etc.).

.5 Alter, at no additional cost, the location of materials and/or equipment as directed, provided that the changes are made before installation, and do not necessitate additional materials.

.6 Leave space clear, and install equipment to accommodate future materials and/or equipment as indicated or specified, or to accommodate equipment and/or materials supplied by other Contractors.

.7 Verify that the spaces in which the equipment is to be installed is sufficient and install all equipment to

.7 (Cont'd)
maintain head room and clearances, to conserve space, comply with Codes, and to ensure adequate space for future servicing.

.8 Confirm at the site, the exact location of equipment, outlets and fixtures, and the location of outlets for equipment supplied by other Contractors, before installation.

28 Inserts, Hangers and Sleeves

.1 Provide hangers, inserts, sleeves and supports as required.

.2 Inserts are to be of lead shield type.

.3 Hangers must not be welded to structural steel members and burning of holes in structural steel is prohibited.

.4 Sleeves in new construction are to be of a type suitable for the application, and be sealed and made watertight. Sleeves through concrete shall be Schedule 40 steel pipe, sized for free passage of conduit, and installed flush with underside of concrete slab and extend 4" above finished floor unless otherwise shown.

.5 Be responsible for the installation of sleeves in accordance with the Construction Schedule.

29 As-Built Drawings

.1 Provide As-Built Drawings of the installation from the Record Drawings.

30 Completion of Contract

.1 All the equipment must be cleaned and tested, before final acceptance by the Consultant.

.2 From the date of issuance of a "Certificate of Substantial Performance", all equipment, materials and workmanship, other than lamps, must be unconditionally warranted for not less that 1 (one) year.

.3 Defects and deficiencies which originate or become evident during the warranty period must be repaired or replaced, at no cost.

.4 If, during the warranty period, transformers, ballasts or other noise and vibration producing equipment are considered by the Consultant to exceed acceptable standards, then these must be replaced without delay or additional cost to the Owner. All work relating to the replacement of defective items must be carried out after normal working hours and at a time which is acceptable to the Owner.

31 Existing Conditions

.1 Visit the site and examine existing conditions affecting the work of this Division

.2 No claim for extra payment shall be made for extra work made necessary by circumstances encountered due to conditions which were visible upon, or reasonably inferable from an examination of the site prior to submission of the bid.

32 Noise and Vibration

.1 Electrical equipment is to operate without objectionable noise or vibration. If, in the opinion of the Consultant, the equipment operates with excessive noise or vibration, then the equipment must be replaced or noise or vibration eliminated.

.2 Connections to noise-producing and vibrating equipment must be made with flexible conduit. Use a minimum of 3 ft. (1m) of flexible cable at each device, formed into a 360 deg. loop.

.3 Vibration isolators are to be provided where indicated or required.

33 Field Quality Control

.1 All electrical work to be carried out by qualified, licensed electricians or apprentices as per the conditions of the Provincial Act respecting manpower vocational training and qualification. Employees registered in a provincial apprentices program shall be permitted, under the direct supervision of a qualified licensed electrician, to perform specific

.1 (Cont'd)
tasks - the activities permitted shall be determined based on the level of training attained and the demonstration of ability to perform specific duties.

.2 Throughout the construction of the Project, a properly qualified Electrical Superintendent must be available at all times. The Superintendent who starts the work must not be changed unless requested by the Consultant, or by the Contractor with written permission from the Consultant.

.3 In addition, provide proper office supervision of the work. The person responsible for office supervision must visit the site as often as necessary, to ensure work is properly performed, and attend meetings when so requested.

.4 The work of this Division is to be carried out by a Contractor who holds a valid Master Electrical Contractor license as issued by the Province where the work is being constructed.

END

PART 1 - GENERAL

1.1 Location of Conduit

.1 Drawings do not show all conduits. Those shown are in diagrammatic form only.

PART 2 - PRODUCTS

2.1 Conduits

.1 Rigid galvanized steel threaded conduit: size as indicated; to CSA C22.2 No.45.

.2 Electrical metallic tubing (EMT): with steel set screw couplings and connectors, size as indicated; to CSA C22.2 No. 83.

.3 Rigid PVC conduit: size as indicated; to CSA C22.2 No.211.2-1983.

.4 Flexible metal conduit and liquid-tight flexible metal conduit: size as indicated to CSA C22.2 No. 56.

2.2 Conduit Fastenings

.1 One hole steel straps to secure surface conduits 2"(50mm) and smaller. Two hole steel straps for conduits larger than 2"(50mm).

.2 Beam clamps to secure conduits to exposed steel work.

.3 Channel type supports for two or more conduits.

.4 Six threaded rods to support suspended channels.

2.3 Conduit Fittings

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

.2 Factory "ells" where 90 degree bends are required for 1"(27mm) and larger conduits.

2.4 Expansion Fittings for Rigid Conduit

.1 Watertight expansion fittings with integral bonding jumper suitable for linear expansion and 3/4"(19mm) deflection in all directions as indicated.

2.5 Fish Cord

.1 Polypropylene.

PART 3 - EXECUTION

3.1 Installation

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

.2 Conceal conduits except in mechanical and electrical service rooms and in unfinished areas.

.3 Use rigid galvanized steel threaded conduit where subject to mechanical damage; also where indicated; also where not specified or indicated otherwise.

.4 Use electrical metallic tubing (EMT) for feeders and branch circuits above 8 ft(2.4m) and below, where not subject to mechanical injury.

.5 Use rigid PVC conduit underground in wet or corrosive areas, in poured concrete slabs and up to 6"(150mm) above poured concrete slabs.

.6 Use flexible metal conduit for connection to motors in dry areas, connection to recessed incandescent fixtures without a prewired outlet box, connection to surface or recessed fluorescent fixtures, and connection to dry-type transformers.

.7 Use liquid tight flexible metal conduit for connection to motors in damp, wet or corrosive locations.

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

.9 Mechanically bend steel conduit over 3/4"(19mm) dia.

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

.11 Install fish cord in empty conduits.

.12 Where conduits become blocked, remove and replace blocked section.

.13 Dry conduits out before installing wire.

3.2 Surface Conduits

.1 Run parallel or perpendicular to building lines.

.2 Group conduits wherever possible on channels.

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

.4 Do not locate conduits less than 3"(75mm) parallel to steam or hot water lines with a minimum of 1"(25mm) at crossovers.

3.3 Concealed Conduits

.1 Run parallel or perpendicular to building lines.

.2 Do not install horizontal runs in masonry walls.

3.4 Conduits in Cast-in-place Concrete

.1 Locate to suit reinforcing steel. Where possible, install in centre one third of slab.

.2 Protect conduits from damage where they stub out of concrete.

.3 Install sleeves where conduits pass through slab or wall.

.4 Where conduits pass through waterproof membrane provide oversized sleeve before membrane is installed. Use cold mastic between sleeve and conduit.

.5 Do not place conduits in slabs in which slab thickness is less than 4 times conduit diameter.

.6 Encase conduits completely in concrete with minimum 1"(25mm) concrete cover.

.7 Organize conduits in slab to minimize cross-overs.

3.5 Conduits Underground

.1 Slope conduits to provide drainage.

END

PART 1 - GENERAL

1.1 References

.1 CSA C22.2 No. 0.3, Test Methods for Electrical Wires and Cables.

1.2 Product Data

.1 Submit product data in accordance with Section 01340.

1.3 Wiring Methods

.1 Wiring methods used shall be in accordance with the Canadian Electrical Code, Part 1, CSA Standard C22.1 - latest edition and the requirements of the Electrical Inspection Department of Prince Edward Island. The standards of this specification shall not be reduced to the minimum safety standards of the above.

.2 All conductors shall be **copper.**

.3 Service conductors shall be as indicated on the drawings.

.4 Branch feeders from the service distribution and subdistribution equipment to panels, major equipment, etc. shall be sized as indicated on the drawings. Conductors in conduit shall be used.

.5 Branch circuit wiring shall be conductors in conduit: where exposed; where subject to mechanical damage; in concrete; underground; in concrete block walls; in wet locations; in hazardous locations and where indicated. Armoured cable Type AC90 (BX) may be used for light fixture drops and for wiring in stud walls. Fixture drop length not to exceed 10 feet(3m) in length.

1.4 Related Work Specified Elsewhere

.1 Conduits, Conduit Fastenings and Conduit Fittings: Section 16111.

PART 2 - PRODUCTS

2.1 Building Wires

.1 Conductors: stranded for 10 AWG and larger. Minimum size: 12 AWG.

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

2.2 Armoured Cables

.1 Conductors: insulated, copper, size as indicated.

.2 Type: AC90.

.3 Armour: interlocking type fabricated from aluminum strip.

2.3 Control Cables

.1 Type LVT: 2 soft annealed copper conductors, sized as indicated, with thermo plastic insulation, outer covering of thermoplastic jacket, fire rated FT4.

.2 Low energy 300 V control cable: annealed copper conductors sized as indicated, with PVC insulation type TW or TWH and shielding over each conductor and overall PVC jacket, fire rated FT4.

PART 3 - EXECUTION

3.1 Installation of Building Wires

.1 Install wiring as follows:
.1 In conduit systems in accordance with Section 16111.
.2 In underground ducts in accordance with Sections 16106 and 16107.

3.2 Installation of Armoured Cables

.1 Group cables wherever possible.

.2 Install cable in trenches in accordance with Section 16106.

.3 Terminate cables in accordance with Section 16151.

3.3 Installation of Control Cables

.1 Install control cables in conduit, as indicated.

.2 Ground control cable shield.

END

PART 1 - GENERAL

1.1 Shop Drawings and Product Data

.1 Submit shop drawings and product data for cabinets in accordance with Section 01340.

PART 2 - PRODUCTS

2.1 Junction and Pull Boxes

.1 Welded steel construction with screw-on flat covers for surface mounting.

.2 Covers with 1"(25 mm) minimum extension all around, for flush-mounted pull and junction boxes.

PART 3 - EXECUTION

3.1 Junction, Pull Boxes and Cabinets Installation

.1 Install pull boxes in inconspicuous but accessible locations.

.2 Only main junction and pull boxes are indicated. Install pull boxes so as not to exceed 100ft(30 m) of conduit run between pull boxes.

3.2 Identification

.1 Provide equipment identification in accordance with Section 16010.

.2 Install size 2 identification labels indicating system name, voltage and phase.

END

PART 1 - GENERAL

1.1 Related Work Specified Elsewhere

.1 Box Connectors: Section 16151.

.2 Conduit: Section 16111.

PART 2 - PRODUCTS

2.1 Outlet and Conduit Boxes General

.1 Size boxes in accordance with CSA C22.1-1986, Section 12.

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

.3 Gang boxes where wiring devices are grouped.

.4 Blank cover plates for boxes without wiring devices.

.5 347 V outlet boxes for 347 V switching devices.

.6 Combination boxes with barriers where outlets for more than one system are grouped.

2.2 Sheet Steel Outlet Boxes

.1 Electro-galvanized steel single and multi gang flush device boxes for flush installation. Square outlet boxes when more than one conduit enters one side with extension and plaster rings as required.

.2 Electro-galvanized steel utility boxes for outlets connected to surface-mounted EMT conduit.

.3 Square or octagonal outlet boxes for lighting fixture outlets.

.4 Square outlet boxes with extension and plaster rings for flush mounting devices in finished plaster or tile walls.

2.3 Masonry Boxes

.1 Electro-galvanized steel masonry single and multi gang boxes for devices flush mounted in exposed block walls.

2.4 Concrete Boxes

.1 Electro-galvanized sheet steel concrete type boxes for flush mount in concrete with matching extension and plaster rings as required.

2.5 Floor Boxes

.1 Concrete tight electro-galvanized sheet steel floor boxes with adjustable finishing rings to suit floor finish with brass faceplate. Device mounting plate to accommodate short or long ear receptacles.

2.6 Conduit Boxes

.1 Cast feraloy boxes with factory-threaded hubs and mounting feet for surface wiring where rigid steel conduit is used.

2.7 Fittings- General

.1 Bushing and connectors with nylon insulated throats.

.2 Knock-out fillers to prevent entry of foreign materials.

.3 Double locknuts and insulated bushings on sheet metal boxes.

PART 3 - EXECUTION

3.1 Installation

.1 Support boxes independently of connecting conduits.

.2 Fill boxes with paper, sponges or foam or similar approved material to prevent entry of construction material.

.3 For flush installations mount outlets flush with finished wall with all voids filled around box.

.4 Provide correct size of openings in boxes for conduit, mineral insulated and armoured cable connections. Reducing washers not allowed.

END

PART 1 - GENERAL

1.1 Shop Drawings and Product Data

.1 Submit shop drawings and product data in accordance with Section 01340.

1.2 Related Work Specified Elsewhere

.1 Outlet Boxes - Section 16132.

PART 2 - PRODUCTS

2.1 Materials

.1 Receptacles, specification grade, duplex or single, code configurations for voltage applied.

.2 Toggle switches, specification grade, single pole, 3-way, 4-way, for voltage applied.

.3 Appliance cord and cap sets as indicated.

2.2 Receptacles

.1 Duplex receptacles, CSA Type 5-15R, 125V, 15A, U ground, with following features:
.1 White thermoplastic base, nylon face.
.2 Suitable for No. 10 AWG for back and side wiring.
.3 Break-off links for use as split receptacles.
.4 Eight back wired entrances, four side wiring screws.
.5 Triple wipe contacts and rivetted grounding contacts.
.6 Standard of Acceptance: Hubbell HBL5252W.

.2 Other receptacles with ampacity and voltage as indicated.

.3 Receptacles of one manufacturer throughout project.

.4 Standard of Acceptance: Hubbell, Leviton.

2.3 Toggle Switches

.1 15A, 20A, or 120V as indicated, single pole, three-way/four-way switches.

.2 Manually operated general purpose ac switches with following features:
- .1 Terminal holes approved for No. 10 AWG wire.
- .2 Silver Alloy contacts.
- .3 Urea or melamine molding for parts subject to carbon tacking.
- .4 Suitable for back and side wiring.
- .5 White toggle.
- .6 Standard of Acceptance:
  - .1 15A, 120V, single pole Hubbell HBL1201W.
  - .2 15A, 347V, single pole Hubbell HBL1 8201WCN.

.3 Toggle operated fully rated for tungsten filament and fluorescent lamps, and up to 80% of rated capacity of motor loads.

.4 Switches of one manufacturer throughout project.

.5 Standard of Acceptance: Hubbell, Leviton, Cooper.

2.4 Cover Plates

.1 Cover plates for wiring devices.

.2 Cover plates from one manufacturer throughout project.

.3 Sheet steel utility box cover for wiring devices installed in surface mounted utility boxes.

.4 Stainless steel, vertically brushed 1 mm thick cover plates for wiring devices mounted in flush-mounted outlet box, single or multi-gang as required.

.5 Cast cover plates for wiring devices mounted in surface mounted FS or FD type conduit boxes.

.5 (Cont'd)

2.5 Manufacturers

.1 Acceptable manufacturers: Leviton, Hubbell.

PART 3 - EXECUTION

3.1 Installation General

.1 Switches:
.1 Install single throw switches with handle in "UP" position when switch closed.
.2 Install switches in gang type outlet box when more than one switch is required in one location.
.3 Mount switches at height specified in Section 16010.

.2 Receptacles:
.1 Install receptacles in gang type outlet box when more than one receptacle is required in one location.
.2 Mount receptacles at height specified in Section 16010.

.3 Cover Plates:
.1 Protect stainless steel cover plate finish with paper or plastic film until painting and other work is finished.
.2 Install suitable common coverplates where wiring devices are grouped.
.3 Do not use cover plates meant for flush outlet boxes on surface mounted boxes.

END

PART 1 - GENERAL

1.1 References

.1 CSA C22.2 No. 65-1956 (R1965) Wire Connectors.

.2 EEMAC 1Y-2, 1961 Bushing Stud Connectors.

1.2 Related Work Specified Elsewhere

.1 Wires and Cables 0-1000 V: Section 16122.

.2 Outlet Boxes, Conduit Boxes and Fittings: Section 16132.

PART 2 - PRODUCTS

2.1 Materials

.1 Pressure type wire connectors: with current carrying parts of copper sized to fit copper conductors as required.

.2 Fixture type splicing connectors: with current carrying parts of copper sized to fit copper conductors 10 AWG or less.

.3 Bushing stud connectors: to EEMAC 1Y-2-1961 to suit conductor.

.4 Clamps or connectors for armoured cable and flexible conduit, as required.

PART 3 - EXECUTION

3.1 Installation

.1 Remove insulation carefully 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 CSA C22.2 No.65-1956(R1965).

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

.3 Install bushing stud connectors in accordance with EEMAC 1Y-2-1961.

.4 Install crimp type connectors with snap-on nylon caps on splices and joints in branch circuits.

END

PART 1 - GENERAL

1.1 Related Work

.1 Fastenings and supports: Section 01600.

PART 2 - PRODUCT

2.1 Support Channels

.1 U shape, size 1-5/8" x 1-5/8", 0.1" thick surface mounted or suspended as indicated.

2.2 Manufacturers

.1 Acceptable manufacturers: Burndy Ltd., Electrovert Ltd., Unistrut Ltd.

PART 3 - EXECUTION

3.1 Installation

.1 Secure equipment to masonry, tile and plaster surfaces with anchors to suit.

.2 Secure equipment to poured concrete with expandable inserts.

.3 Secure equipment to hollow masonry walls or suspended ceilings with toggle bolts.

.4 Secure surface mounted equipment with twist clip fasteners to inverted T bar ceilings. Ensure that T bars are adequately supported to carry weight of equipment specified before installation.

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

.6 Fasten exposed conduit or cables to building construction or support system using straps.
.1 One-hole steel straps to secure surface conduits and cables 2" and smaller.

.6 (Cont'd)
.2 Two-hole steel straps for conduits and cables larger than 2".
.3 Beam clamps to secure conduit to exposed steel work.

.7 Suspended support systems.
.1 Support individual cable or conduit runs with 1/4" dia threaded rods and spring clips.
.2 Support 2 or more cables or conduits on channels supported by 1/4" dia threaded rod hangers where direct fastening to building construction is impractical.

.8 For surface mounting of two or more conduits use channels at 5' oc spacing.

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

.10 Ensure adequate support for raceways and cables dropped vertically to equipment where there is no wall support.

.11 Do not use wire lashing or perforated strap to support or secure raceways or cables.

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

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

END

PART 1 - GENERAL

1.1 Product Data

.1 Submit product data in accordance with Section 01340.

PART 2 - PRODUCTS

2.1 Disconnect Switches

.1 Non-fusible disconnect switch in CSA Enclosure as indicated.

.2 Provision for padlocking in off switch position by three locks.

.3 Mechanically interlocked door to prevent opening when handle in ON position.

.4 Quick-make, quick-break action.

.5 ON-OFF switch position indication on switch enclosure cover.

2.2 Equipment Identification

.1 Provide equipment identification in accordance with Section 16010.

.2 Indicate name of load controlled on size 4 nameplate.

2.3 Manufacturers

.1 Acceptable manufacturers: Schneider Electric, Cutler Hammer, Siemens or approved equal.

PART 3 - EXECUTION

3.1 Installation

.1 Install disconnect switches as indicated.

END

PART 1 - GENERAL

PART 2 - PRODUCTS

2.1 Materials

.1 Grounding equipment to: CSA C22.2No.41 l950 (R1967).

.2 Copper grounding conductors to: ASA G7.1-1964.

2.2 Equipment

.1 System and circuit, equipment, grounding conductors, bare stranded copper, un-tinned, soft annealed, unarmoured, size as indicated.

.2 Insulated grounding conductors: green, Type RW90 to Section 16122.

.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 Bonding jumpers, straps.
- .5 Pressure wire connectors.

2.3 Manufacturers

.1 Acceptable manufacturers: Burndy Corp, McGraw-Edison (Canada) Ltd.

PART 3 - EXECUTION

3.1 Installation General

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

.2 Install connectors to 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 Install bonding wire for flexible conduit, connected at both ends to grounding bushing, solderless lug, clamp or cup washer and screw. Neatly cleat bonding wire to exterior of flexible conduit.

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

.8 Bond single conductor, metallic armoured cables to cabinet at supply end, and provide non-metallic entry plate at load end.

3.2 Equipment Bonding

.1 Install grounding connections to typical equipment included in, but not necessarily limited to following list: Cable Trays, Racks, etc.

3.3 Tests

.1 Perform tests in accordance with Section 16010.

.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.

END

PART 1 - GENERAL

1.1 Product Data

.1 Submit product data in accordance with Section 01340.

.2 Include time-current characteristic curves for breakers with ampacity of 50 A and over or with interrupting capacity of 14,000 A symmetrical rms and over at system voltage.

PART 2 - PRODUCTS

2.1 Breakers General

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

.2 Common-trip breakers with single handle for multipole applications.

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

.4 Circuit breakers with interchangeable trips as indicated.

2.2 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.

2.3 Manufacturers

.1 Acceptable manufacturers: Schneider, Cutler Hammer, Siemens to match existing.

PART 3 - EXECUTION

3.1 Installation

.1 Install circuit breakers as indicated.

END

PART 1 - GENERAL

1.1 Shop Drawings and Product Data

.1 Submit shop drawings in accordance with Section 01340.

.2 Submit shop drawings on lamps and ballasts.

1.2 Related Work Specified Elsewhere

.1 Electrical General Provisions - Section 16010.

.2 Luminaire Schedule - Section 16506.

PART 2 - PRODUCTS

2.1 Fluorescent Lamps

.1 Fluorescent lamps shall be rated: 1. T8, 32 watts, 2950 initial lumen output, 24,000 hours life, 3500 degrees K colour temperature, minimum CRI of 82, medium bi-pin base. Standard of Acceptance: General Electric F32T8/XL/SPX35/ECO.

.2 Approved Equals: GE, Osram-Sylvania, Phillips.

2.2 Fluorescent Ballasts

.1 All fluorescent lighting ballasts shall be high power factor, 120 volt (or 347V as indicated)electronic, programmed rapid start, rated for lamps.

.2 Power Factor 99%; crest factor less than 1.5; harmonics less than 10% THD; Ballast factor greater than 0.9; lumens/watt greater than 90; parallel lamp operation; less than 0.7s start time.

.3 Standard of Acceptance: GE, Phillips, Osram-Sylvania.

PART 3 - EXECUTION

3.1 Installation General

.1 Luminaires shall be surface mounted, suspended or recessed in accordance with their type. This Contractor shall supply and install necessary supports. This Contractor shall be responsible to see that all luminaires are properly cleaned at the time of installation.

.2 Any luminaires showing marks or scratches due to handling or tool marks, shall be replaced by the Contractor at his own expense. All luminaires shown in continuous rows or broken lines shall be carefully aligned so that all rows appear to be straight lines. Crooked lines or misplaced luminaires shall be corrected.

.3 All luminaires shall be installed in locations indicated.

.4 All luminaires shall be complete with lamps as indicated and shall be operable at the time of the building takeover.

END

PART 1 - GENERAL

1.1 Related Work

.1 Lighting Equipment: Section 16505.

1.2 Shop Drawings and Product Data

.1 Submit shop drawings and product data in accordance with Section 11340.

.2 Submit complete photometric data prepared by independent testing laboratory for luminaires where indicated, for approval by Engineer.

1.3 Spare Lamps

.1 Provide spare lamps as follows:
.1 5%, or 5 of each type of lamp, whichever is greater.

1.4 Guarantee

.1 Replace:
.1 Fluorescent and HID lamps burning out within 12 months of takeover.
.2 Ballasts that fail or exceed their original noise level rating within 12 months of takeover.

PART 2 - PRODUCTS

2.1 Materials

.1 Socket screw-shell lampholders: to CSA C22.2No.43-1965.

.2 Electric discharge lampholders: to CSA C22.2No.74-1969.

.3 Fluorescent lamps: to ANSI C78 Series.

.4 Ballasts: to CSA C22.2No.74-1969.

2.2 Luminaires

.1 Type A

.1 1220mm long surface mounted fluorescent fixture c/w wraparound acrylic lens.

.2 Lamps: Two 32W T8.

.3 Ballast: Electronic, instant start, 120 or 347 volt, as indicated.

.4 Standard of Acceptance:

.1 Metalux #WS-232-120/347-EB81.

.2 Phillips # TX248-120/347-50.

.3 Lithonia # SB 232 120/347 GEB10IS.

END