SPECIFICATION

FOR

Public Address System Upgrade

Charlottetown Rural High School

Charlottetown, Queens County, PEI

Project #100-20024

Prepared by:

Richardson Associates (1993) Limited

Prepared For:

PEI Department of Transportation, Infrastructure and Energy

July 14, 2020

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SECTIONS 26 and 27

DRAWINGS

1. GENERAL

   a) 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

   a) **There will be a recommended site visit held, Tuesday, July 21st, 2020, at 1pm. Contractors are asked to meet outside the main entrance of the building.**

END

TIE Public Works and Planning is moving forward with our capital building repair and construction program and will be issuing tenders as follows:

We have developed modifications to the tender process to minimize everyone's potential exposure to COVID-19.

Tenders will continue to be advertised and posted to the PEI Government tender site: https://www.princeedwardisland.ca/en/tenders

Sealed tenders will be received at the Security Desk at the main entrance to Jones Building, 11 Kent Street, Charlottetown, PEI, CIA 7N8 until **2 PM, Local Time, on Thursday, July 30th, 2020.** Tenders are to be clearly marked to indicate the project being tendered on.

Charlottetown Rural High School – Public Address System Upgrade
Charlottetown, Queens County, PE

Scope of Work:

1. Disconnect and remove the existing public address system in the School.
2. Install, connect and commission the new public address system.

Hard copies (paper copies) of tender documents will **not** be made available to bidders at this time. All tender documentation will only be available electronically. Electronic documents will be posted electronically to the Government tender page:

https://www.princeedwardisland.ca/en/tenders

Electronic documents will be issued to Construction Association of PEI (CAPEI) as well as to NB and NS Construction Associations. Addenda will only be posted to the Government tender site and issued to the Construction Associations. **It is the Contractor's responsibility to ensure that they have incorporated all addenda into their bid submission.**

- Tender envelops must be clearly marked with the project Name.
- Tender documents will need to be received prior to 2PM on the date specified in the tender.
- No submissions will be accepted after that time.
- The tender opening will not be opened to the public.
- Tender envelops will be opened immediately after the tender closing and there will be a representative of CAPEI present to witness the opening.

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

Lowest or any Tender will not necessarily be accepted.

Any additional information can be obtained by contacting **Chris Silliker, P.Eng at 902-368-4999(O), 902-218-4698(C) or fax 902-569-0590.**

END

1. GENERAL

COVID-19

a) The parties acknowledge that the obligations of each party from time to time to meet certain terms and conditions of this Contract may be impeded by the COVID-19 pandemic and related issues. The parties agree to act in good faith by making all reasonable accommodations as the circumstances of the pandemic may require and each party will exercise reasonable efforts to comply with this Contract notwithstanding the effect of the pandemic. No party will require or encourage any person acting on its behalf to violate the terms of any public health directive or to perform any act which would place such person at a material risk of contracting the COVID-19 virus.

b) This contractor acknowledges that any costs associated with Covid-19 construction protocol related to all required Health and Safety measures during the duration of this construction contract, as referenced in the Tender Documents, shall be included in the base bid for this Contract.

c) COVID-19. Until further notice, and as directed by the Provincial Chief Public Health Office (CPHO), all works shall be conducted with the intent and spirit of the health directives given. As such, bidders shall include provisions within their bids to achieve social and physical distancing between all workers during travel times to and from the site, working, rest breaks, lunch breaks, etc. For more information related to CPHO and COVID – 19 refer to the following links provided by the Government of PEI, Federal Government of Canada and the Construction Association of PEI:

1. Government of PEI: www.princeedwardisland.ca/covid19
2. Government of Canada: canada.ca/coronavirus
3. CAPEI: www.capei.ca/

d) In response to the current COVID -19 pandemic we will require all Contractors to:

a. Develop a written work site specific Pandemic Preparedness plan based on the criteria in the CAPEI industry guide PANDEMIC PLANNING FOR THE CONSTRUCTION INDUSTRY – A GUIDE found at the following link: Https://capei.ca/member_access/LiveEditor/images/pdf/INDUSTRY_GUIDE_COVID_19.pdf

b. Contractor will be responsible to complete and return the "COVID-19 Contractor Affidavit", as part of the contract documents; it is not required to be submitted with the tender submission.

e) The successful contractor shall have designated an on-site staff person with the authority to enforce the requirements of the 'Pandemic Preparedness plan' throughout the project(s) or until such directive is deferred by the CPHO. TIE will require that the Contractor develop a written site specific Pandemic Preparedness plan and have it available prior to the award of a tender.

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

g) 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 the Department 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. Addenda will only be posted to the Government tender site and issued to the Construction Associations. **It is the Contractor's responsibility to ensure that they have incorporated all addenda into their bid submission.**

3. BID AND CONTRACT SECURITY

BID SECURITY

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

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

A Bid Bond equal to at least ten percent (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 percent (50%) of the total contract amount.

OR

A Security Deposit equal to at least ten percent (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 percent (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 percent (50%) of the total contract amount and a Labour and Material Payment Bond in the amount of fifty percent (50%) of the total contract amount.

b) .1 All Bonds and Letter 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 "**Minister of Finance, Province of Prince Edward Island**".

OR

.2 Bond 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 principal or as to principal and interest in the name of the Owner, pursuant to the Domestic Bonds of Canada Regulations.

d) Security deposits submitted through the Bid Depository shall be accompanied by the Bid Security. The subcontractors shall advise General Contractors what form of bid security is being used and what form of contract security will be used.

CONTRACT SECURITY

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

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

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

OR

A Security Deposit in an amount equal to at least ten percent (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 percent (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 "**Minister of Finance, Province of Prince Edward Island**".

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 principal or as to principal 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

a) Work is to begin immediately following contract award unless indicated otherwise.

b) The completion date for this project shall **August 21st, 2020**.

c) Contractor to provide a construction schedule, safety policy, proof of insurance, and signed contract documents prior to starting work.

5. MATERIALS AND EQUALS

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

b) 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 have been accepted as equal.

c) 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

a) 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:

.1 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.

.2 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 their opinion of lesser value, quality and price than those specified will only be accepted as substitutes if reasonable credits are allowed for their use.

.3 Requests 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.

b) 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

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

b) The Contractor shall include in their 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

h) The Contractor shall be responsible to be fully familiar with the complete documents and shall include in their 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: **Government of Prince Edward Island as represented by the Minister of Transportation, Infrastructure and Energy**

CONSULTANT: **Richardson Associates (1993) Limited**

10. SITE INSPECTOR

a) There will be an Inspector representing the Department of Transportation, Infrastructure and Energy, Province of PEI. 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 their opinion, there be a cause to do so.

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

b) 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.

c) 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

a) 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 their bid deposit.

12. SUB-CONTRACTORS

a) Bidders shall include with their tender, in the space in **Section E – Contract Tender**, Appendix A, the name of each Subcontractor and/or Supplier, as designated, whose price has been included in their tender and who will perform the trade work. Substitution for another Subcontractor in the event that the listed Subcontractor is unable to do the work shall be subject to the approval of the Owner and contingent on evidence satisfactory to the Owner that the original

Subcontractor's price was legitimately carried in the Tender, and that the original Subcontractor is now incapable of carrying out the work required under the subcontract, or that he refuses to carry out the work and provides documented reasons for such incapability or refusal.

b) The term "Own Forces," as a subcontractor, may be used by a Bidder where the Bidder is equipped to and in fact normally carries out the trade work using employees in the direct employment of the Contractor or a wholly owned subsidiary company. Other designations such as "Own Estimate" are unacceptable and may be cause for rejection of the tender by the Owner. **Carrying Subcontractor options next to identified work will not be acceptable.**

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

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

e) 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. <u>GUARANTEES</u>

a) The Contractor shall be required to guarantee the work of this Contract for a period of twelve (12) months after the Owner's acceptance of the work, against improper or defective materials and workmanship, and shall repair and make good at their 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 (12) months after acceptance of the work shall be made good by the Contractor at their own expense.

b) Notwithstanding 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 (12) months. These specific requirements are to be found in various sections of the Specifications for this project.

14. ACCEPTANCE / REJECTION OF TENDERS

a) Bids shall remain open to acceptance and irrevocable for a period of 30 days after the bid closing date.
b) The Owner reserves the right to reject any and all tenders.

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

15. CONSULTANT'S INTERPRETATION

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

16. PERMITS, REGULATIONS AND TAXES

a) All permits and fees required for the proper completion and inspection of the work herein specified will be paid for by the Contractor. Except the building permit which will be paid for by the Owner. 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.

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

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

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

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

f) 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.

g) The latest edition of the PEI Occupational Health and Safety Act and Regulations shall govern safe construction practices.

17. EXISTING CONDITIONS

a) 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.

b) 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 their 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

a) 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

a) Bids shall remain open to acceptance and irrevocable for a period of 30 days after the bid closing date.

b) In making the decision to award the Contract pursuant to this invitation to tender, the Owner may take into account:

    a. The history of work performance of each bidder on similar or different types of work in prior Contracts with the Owner.
    b. The bidder’s qualifications to perform the Work, the quality of the Bidder’s past work, the bidder’s financial capability to do the Work and the competence of the Bidder.

c) 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.

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

20. TENDER SUBMISSION

a) 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 interlineations, alteration or erasures.

b) 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.

c) 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.

d) 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).

e) 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 initialed by the person signing the tender after they have been filled in.

f) 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

a) All tenders submitted shall EXCLUDE the Harmonized Sales Tax.

22. CONFIDENTIALITY AND FREEDOM OF INFORMATION (Effective November 1, 2002)

a) 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.

b) 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.

c) 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.

d) 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

INDEX

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 names 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 or 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, 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 and Planning Division of the PEI Department of Transportation, Infrastructure and Energy.

2. DOCUMENTS

a) 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 call 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

a) 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

a) 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

a) 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

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

7. OWNERSHIP OF DRAWINGS AND MODELS

    a) All drawings, specifications and copies thereof and all models furnished by the Consultant are property of the Owner. 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

    a) 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

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

10. CONSULTANT AND CONTRACTOR

    a) 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

    a) 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 the 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 even t 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

a) 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

a) 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

a) 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

a) 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 material 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) day's 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

a) 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

a) 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

a) 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

a) 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. CONTRACTORS' INSURANCE

a) INDEMNITY/HOLD HARMLESS

.1 The Contractor shall be liable for all injuries to persons and for damage to property caused by his or her operations, and those of his or her sub-contractors, and his or her and their employees, engaged on all operations in connection with the contract both on and off the site, and he or she 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 or her 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 or her own plant and equipment being used on the Project and/or stored on the site.

b) BUILDERS RISK, ALL RISK PROPERTY INSURANCE

.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 Two Million ($2,000,000.00) dollars inclusive per occurrence against bodily injury and property damage. **The Government of Prince Edward Island 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 Owner with thirty (30) day 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 Two Million ($2,000,000.00) dollars

(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 deliver or receipt by the government shall not be construed as

acknowledgement or concurrence that there has been compliance with the terms of this Agreement.

.3 Indemnification

The Contractor shall indemnify and hold harmless the Government of Prince Edward Island, 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

a) 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

a) 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 requires except those allowances included for contingency purposes.

23. SUBSURFACE CONDITIONS

a) 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 Contact, 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

a) The Owner or the Consultant, without invalidating the contract, may make changes by altering, adding to, or deducting from the work, the contracts 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

a) 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

(a) 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.

(b) 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 to 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 as an additional line item. This amount would be in 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 fifteen percent (15%) 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 fulfillment 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 – including the extra work and compensation therefore.

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 contact, 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

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 Sub-Contractors, 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, indicating that Worker's Compensation premiums in relation to the project have been paid in full.

28. TAXES

a) 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

a) 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 right 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

a) 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

a) 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

a) 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 tools, 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

a) 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-times work shall be borne by the party responsible therefore.

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

a) 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.

b) If the Contractor is delayed in the performance of the Work by:

.1 labor disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractors' association, of which the Contractor is a member or to which the Contractor is otherwise bound),

.2 fire, unusual delay by common carriers or unavoidable casualties,

.3 abnormally adverse weather conditions, or any cause beyond the Contractor's control other than one resulting from a default or breach of Contract by the Contractor the Contractor will make reasonable efforts to counter the circumstances giving rise to the delay or to otherwise remedy its inability to perform its obligations by utilizing all resources reasonably required in the circumstances, including obtaining supplies or services from other sources if the same are reasonably available (including seeking injunctive relief or other judicial, quasi-judicial or law enforcement remedy, provided that the Contractor will not be required to settle or resolve any labor disturbance, strike, lock-out, or work slowdown (collectively “Employment Matters”) but excluding any Employment Matters involving persons retained, employed or hired by the Contractor to supply materials or services to meet the Contractor’s obligations under this Contract; or

any Employment Matter caused by, or attributable to, any act (including any pricing or other practice or method of operation) or omission of the Contractor. Only after the Contractor has made such reasonable efforts the Contract Time shall be extended for such reasonable time as the Consultant may recommend in consultation with the Contractor. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless the Contractor agrees to a shorter extension. The Contractor shall not be entitled to payment for costs incurred by such reasonable efforts or delays unless such reasonable efforts or delays were required as a result of actions by the Owner, Consultant or anyone employed or engaged by them directly or hall be necessary.

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

a) 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

a) 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

a) 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

a) 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 judgment 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 judgment

against the Owner, then the Contractor shall have the right upon undertaking to indemnify the Owner against any and all liability for sots to appeal, in the name of the Owner, such final order or judgment to any and all courts or competent jurisdiction.

39. SEPARATE CONTRACTS WITH OTHER CONTRACTORS

a) 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 other insurance coverages and shall take all precautions reasonable possible to avoid possible occurrence of a labour dispute or disputes on the work.

40. ASSIGNMENT

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

41. SUB-CONTRACTS

a) 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 reasonable 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 or her. 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 reasonable object.

42. RELATIONS OF CONTRACTOR AND SUB-CONTRACTOR

a) 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

a) 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

a) 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.

45. CONFLICT OF INTEREST

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

i) allow the Contractor to resolve the actual or potential conflict to the satisfaction of Government; or
ii) terminate the Agreement in accordance with the Termination section of this Agreement.

END

PROJECT:

1. GENERAL

a) 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 #100-20024** herein, which is more particularly described in the Plans and Specifications titled **Charlottetown Rural High School Public Address System Upgrade** and dated **July 14, 2020** for the lump sum as set out in Clause 3.

The Contractor agrees:

.1 To complete the work by the date indicated on 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 or her tender unless prior approval is received from the Engineer to make a change.

2. ADDENDA

a) The following addenda are included in this contract:

_____

_____

_____

_____

3. CONTRACT PRICE

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

_____

_____

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

_____

_____

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

_____

_____

4. CORRESPONDENCE

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

Owner & Consultant

PEI Department of Transportation, Infrastructure and Energy
PO Box 2000
Charlottetown, PE
C1A 7N8

Contractor

_____
_____
_____
_____

5. CONTRACTOR'S ACCEPTANCE

a) Accepted and executed on behalf of the Contractor this _____ day of _____, 20___, in the presence of _____.

_____ _____
Witness Signature & Corporate Seal

6. OWNER'S ACCEPTANCE

a) 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: Charlottetown Rural High School – Public Address System Upgrade
100 Raiders Rd, Charlottetown
Queens County, Prince Edward Island

TO: Minister of Transportation, Infrastructure and Energy
11 Kent Street
PO Box 2000
Charlottetown, PE
C1A 7N8

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

"Charlottetown Rural High School – Public Address System Upgrade"

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

In the event of this tender being accepted within thirty (30) days of the time stated for the closing of tenders, and our failing or declining to enter into a contract, then our bid deposit shall be forfeited to the Owner in lieu of any damages which he or she may suffer by reason of our failure or refusal to enter into such contract.

In the event of our tender not being accepted within thirty (30) days of the time stated for the closing of tenders, the bid deposit will be returned to us forthwith unless a satisfactory arrangement is made with us covering its retention for a further stated period.

This tender includes the following addenda:

Addendum #	Date	Initial

Prior to signing the Contract, the Contractor is to provide General Contractor and Stub-Trade labour rates to substantiate actual labour costs and wage levies for extra work (Change Orders).

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, see Item 12, Section B).

Electrical _____
Cutting and Patching _____
Other _____

_____
Submitted by (Name of Bidder)

_____
Authorized Signature

END

1. REFERENCES

.1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
  .1 Material Safety Data Sheets (MSDS).
.3 Province of Prince Edward Island
  .1 Occupational Health and Safety Act, R.S.P.E.I.1988 (including any amendments to and regulations)
.4 CSA C22.1-18 – Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.
.5 CSA C22.3 No. 7-94 (R2005) - Underground Systems
.6 COSH, Canada Occupational Health and Safety Regulations (SOR/86-304)
.7 Fire Protection Standards issued by Fire Protection Services of Human Resources Development Canada as follows:
  .1 FCC No. 301 – June 1982 Standard for Construction Operations.(or latest edition)
  .2 FCC No. 302 – June 1982 Standard for Welding and Cutting. (or latest edition)

2. COMPLIANCE REQUIREMENTS

.1 Comply with Occupational Health and Safety Act, Occupational Health and Safety Act Regulations PEI (including any amendments to and regulations).
.2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.
.3 Perform lockouts in compliance with:
  .1 Canadian Electrical Code
  .2 Federal and Provincial Occupational Health and Safety Acts and Regulations.
  .3 Regulations and code of practice as applicable to mechanical equipment or other machinery being de-energized.
.4 In event of conflict between any provisions of above Authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Consultant will advise on the course of action to be followed.

3. CONSTRUCTION SAFETY MEASURES

.1 Observe and enforce construction safety measures required by latest National Building Code, Part 8, Provincial Government, Worker's Compensation Board and municipal statues and authorities.
.2 Provide and maintain first aid equipment appropriate to the work and its location in accordance with the First Aid Regulations. Implement recommendations from Occupational Health and Safety Division specific to the project work site.

4. HEALTH AND SAFETY COORDINATOR

.1 Employ and assign to work, competent and authorized representative as Health and Safety Coordinator. Health and Safety Coordinator must:
  .1 Have minimum 2 years site-related working experience specific to activities associated with Construction.
  .2 Having working knowledge of occupational health and safety regulations.
  .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
  .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

5. SAFETY ASSESSMENT

.1 Perform site specific hazard assessment related to project.
.2 Perform on-going hazard assessments during the progress of Work identifying new or potential health risks and safety hazards not previously known. As a minimum, hazard assessments shall be carried out when:
  .1 New subtrade work, new subcontractor(s) or new workers arrive at the site to commence another portion of work.
  .2 The scope of work has been changed by Change Order.
  .3 Potential hazard or weakness in current health and safety practices are identified by Consultant or by an authorized safety representative.
.3 Each hazard assessment to be made in writing. Keep copies of all assessments on site for duration of Work. Upon request, make available to Consultant for inspection.

6. SUBMITTALS

.1 Submit site-specific Health and Safety Plan within seven (7) days after date of Notice to Proceed and prior to commencement of Work. (one copy electronically and one hard copy).
.2 Upon request, submit one copy electronically and one hard copy of the Contractor's authorized representative's worksite health and safety inspection reports to Consultant.
.3 Upon request, submit copies of construction safety tool box meetings and formal contractor safety meetings.
.4 Submit copies of incident and accident reports.
.5 Maintain Worker's Compensation Coverage for duration of contract. Submit Letter of Good Standing to Consultant prior to commencement of work.

7. SITE CONTROL AND ACCESS

.1 Control worksite and entry points. Grant and allow entry to only workers and other persons so authorized. Immediately stop non-authorized persons from circulating within construction areas and remove from site.
.2 Prior to gaining access to the site, all contractors, subcontractors and suppliers shall file with the General Contractor their proof of Workers Compensation coverage, proof of required Insurance and proof of contract. Upon request, proof of these documents will be provided to the Owner and Consultant.
.3 Delineate and isolate construction areas from other areas of site by use of appropriate means. Erect barricades, fences, hoarding and temporary lighting as required.
.4 Erect signage at entry points and at other strategic locations around site, clearly identifying construction areas(s) as being “off limits” to non-authorized persons. Signage must be professionally made.
.5 Ensure persons granted access are fitted and wear appropriate personal protective equipment (PPE).

8. PROTECTION

.1 Provide temporary facilities for protection and safe passage of building occupants, public pedestrian and vehicular traffic around and adjacent to work site.
.2 Provide safety barricades, lights and signage within work site as required to provide a safe working environment for workers.

9. MEETINGS

.1 Prior to commencement of work hold a Health and Safety meeting. Have Contractor’s Site Superintendent in attendance.
.2 Provide site safety orientation session to all workers and all workers new to the site and other authorized persons prior to granting them access to work site. Brief persons on site conditions and on the site safety rules in force at site.
.3 Conduct site specific occupational health and safety meetings during the entire work as follows and submit minutes as requested.
    .1 Formal meetings on a minimum monthly basis.
    .2 Informal tool box meetings on a regular basis from a predetermined schedule.
.4 Attend Health and Safety meetings as directed by the Contractor.

10. HAZARDOUS MATERIALS

.1 Should material resembling hazardous materials (other than those identified within the Contract Documents) be encountered in the course of work, stop work immediately. Do not proceed until written instructions have been received from the Consultant.
.2 Any material which contains asbestos, lead paint or PCB's that is disturbed or removed during construction work shall be removed in accordance with the regulations set out by the Occupational Health and Safety Act.

11. WHIMIS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) Regulations regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of Safety Data Sheets.
.2 Have a copy of WHMIS Safety Data Sheets available at the workplace on delivery of hazardous products.

12. SITE CLEANING

.1 Except where special permission is obtained, maintain clean 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 areas as required to execute the work.

13. FIRE SAFETY REQUIREMENTS

.1 Comply with requirements of latest standard for Building Construction Operations issued by the Fire Commissioner of Canada and Fire Safety Regulations of Local Authority. (latest editions)
.2 Implement and follow fire safety measures during Work. Comply with following:
  .1 National Fire Code, (latest edition)
  .2 Fire Protection Standards FCC 301 and FCC 302, (latest edition).
  .3 Federal and Provincial Occupational Health and Safety Acts and Regulations.
.3 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirements, Consultant will advise on the course of action.

14. EMERGENCY MANAGEMENT PLAN

.1 Must include response for medical and fire emergencies.
.2 Know the location of the nearest fire alarm box and telephone (if no cell phone available), including the emergency phone number.
.3 Know where the "Civic Address" of worksite is posted to report to emergency personnel.
.4 Report immediately all fire incidents to the fire department as follows:
  .1 Activate nearest fire alarm box
  .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.
.5 Notify the Owner of any emergency.

15. POSTING OF DOCUMENTS

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

16. CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by Authority having Jurisdiction or by Consultant.
.2 Provide Consultant with written report of action taken to correct non-compliance of health and safety issues identified.

17. OPEN EXCAVATIONS

.1 If open foundations or demolition areas are to be left at the end of a work day, a protective barrier must be placed around the entire perimeter of the open excavation or demolition areas to limit access by others. Barrier to be approved by the requirements established in the OH&S Regulations.

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, and standards, including manufacturer's 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 phrases 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 CSA S269.2.

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

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 labeling 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 body 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 time other than when supervised work is in progress.

c) Provide and maintain in working order, suitable Underwriters' labeled fire extinguishers and locate in prominent position 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 a 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 devises, 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 no 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 the entire 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 Communities, Land & Environment.

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

a) 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 Government of PEI.

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.

.2 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) 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 a 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 parches 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

   a) 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 the new motor control center, including electrical components and site material which will be demolished under the supervision of the section sub-contractor. These materials include, but are not limited to: **electrical components as required to complete work as per the specifications & drawings.**

2. PROTECTION

   a) 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.

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

   c) 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 buildings 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 actions, 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 Architect before continuing with the work.

3. DESCRIPTION OF WORK

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

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

   c) 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.

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

4. EXECUTION

   a) Dispose of demolished materials in accordance with authorities having jurisdiction.

b) Do not disrupt active or energized utilities and services.

c) At the end of each day's work leave the site in a safe condition, with no danger of any component toppling or falling.

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

e) Do not sell or burn materials on site.

f) 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.

g) 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

Public Works and Planning Division
Transportation, Infrastructure and Energy

PO Box 2000
Charlottetown
Prince Edward Island
Canada C1A 7N8

Tel 902 368 5160
Fax 902 368 5090
princeedwardisland.ca

COVID-19 CONTRACTOR AFFIDAVIT

TIE Project: _____

The undersigned ("Contractor") hereby acknowledges the Province's concerns regarding safety at the worksite due to the COVID-19 pandemic. The Contractor agrees that it shall conduct its operations in strict compliance with all applicable regulations, guidelines, and requirements imposed by the Chief Public Health Office (CPHO), Worker's Compensation Board (WCB), and that it will comply with the Construction Association of PEI (CAPEI) "Pandemic Planning For The Construction Industry – A Guide" for all construction sites and workers at all Public Works locations.

The Contractor understands that it is the Contractor's responsibility to develop, maintain, and follow a written Covid-19 Operational Plan specifying how it will meet its obligations. The Contractor is to provide a copy of their Covid-19 Operational Plan upon request by the TIE representative.

The Contractor, if acting as the General, also certifies that each Subcontractor, Sub-subcontractor, and other parties that will perform work on their behalf, will also comply and will satisfy these requirements.

The Contractor acknowledges and agrees that non-compliance with any of the requirements above, including failure to abide by its own COVID-19 Operational Plan, may result in suspension or termination of any or all work in progress.

_____
Contractor/ Company Name (Please Print)

_____
Contractor/Company Email (Please Print)

_____
Contractor/Company Phone

Certification:

By signing below, on behalf of the Contractor/Company, I certify we have COVID-19 Operational Plan, all staff have read and acknowledged the plan and we agree to the foregoing.

_____
Contractor/Company Representative (Please Print)

_____
Contractor/Company Representative (Please Sign)

_____
Signature Date

Please email completed form to adminpwp@gov.pe.ca or fax to 902-569-0590 prior to construction activity.

END

PART 1 - GENERAL

1.1 References

.1 Canadian Standards Association (CSA International)
- .1 Do complete installation in accordance with CSA C22.1-06, Canadian Electrical Code, Part 1 (latest Edition), Safety Standard for Electrical Installations, except where specified otherwise.
- .2 Comply with CSA Certification Standards and Electrical Bulletins in force at time of Tender submission.
- .3 CAN/CSA-C22.3 No. 1-01(Update March 2005), Overhead Systems.
- .4 CAN3-C235-83(R2000), Preferred Voltage Levels for AC Systems, 0 to 50,000 V.

.2 Electrical and Electronic Manufacturer's Association of Canada (EEMAC)
- .1 EEMAC 2Y-1-1958, Light Gray Colour for Indoor Switch Gear.

.3 Institute of Electrical and Electronics (IEEE)/National Electrical Safety Code Product Line (NESC)
- .1 IEEE SP1147, The Authoritative Dictionary of IEEE Standards Terms, 7th Edition.

1.2 Definitions

.1 Electrical and electronic terms: unless otherwise specified or indicated, terms used in these specifications, and on drawings, are those defined by IEEE SP1147.

1.3 Design Requirements

.1 Operating voltages: to CAN3-C235.

.2 Equipment to operate satisfactorily at 60 Hz within normal operating limits established by above standard.
- .1 Equipment to operate in extreme operating conditions established in above standard without damage to equipment.

.3 Language operating requirements: provide identification nameplates and labels for control items in English.

1.4 Submittals

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

.2 Product Data: submit WHMIS MSDS in accordance with Section 01 35 43.13- Hazardous Materials.

.3 Submit for review Public Address riser diagram, under plexiglass at the contral panel in LAN Rooms.

.4 Shop drawings:

1.4 Submittals (Cont'd)

.4 Shop drawings:(Cont'd)

.1 Submit shop drawings, product data and samples in accordance with Section 01 33 00.

.2 Submit drawings to be stamped and signed by professional engineer.

.3 Where applicable, submit wiring diagrams and installation details of equipment indicating proposed location, layout and arrangement, control panels, accessories, piping, ductwork, and other items that must be shown to ensure co-ordinated installation.

.4 Where applicable, identify on wiring diagrams circuit terminals and indicate internal wiring for each item of equipment and interconnection between each item of equipment.

.5 Where applicable, indicate on drawings clearances for operation, maintenance, and replacement of operating equipment devices.

.6 If changes are required, notify Engineer of these changes before they are made.

.5 Quality Control: in accordance with Section 01 45 00 - Quality Control.

.1 Provide CSA certified equipment and material.

.2 Where CSA certified equipment and material is not available, submit such equipment and material to inspection authorities for special approval before delivery to site.

.3 Submit test results of installed electrical systems and instrumentation.

.4 Permits and fees: in accordance with General Conditions of contract.

.5 Submit certificate of acceptance from Electrical Inspection Department upon completion of work to Engineer.

1.5 Quality Assurance

.1 Quality Assurance: in accordance with Section 01 45 00 - Quality Control.

.2 Qualifications: electrical Work to be carried out by qualified, licensed journeymen electricians or apprentices in accordance with authorities having jurisdiction

.1 Employees registered in provincial apprentices program: permitted, under direct supervision of qualified licensed electrician, to perform specific tasks.

.2 Permitted activities: determined based on training level attained and demonstration of ability to perform specific duties.

.3 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.6 Delivery, Storage and Handling

.1 Material Delivery Schedule: provide Engineer with schedule within 2 weeks after award of Contract.

.2 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with The General Contractor's Waste Management and Disposal Plan.

1.7 System Startup

.1 Instruct operating personnel in operation, care and maintenance of systems, system equipment and components.

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

.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.

1.8 Operating Instructions

.1 Provide for each system and principal item of equipment as specified in technical sections for use by operation and maintenance personnel.

.2 Operating instructions to include following:
.1 Wiring diagrams, control diagrams, and control sequence for each principal system and item of equipment.
.2 Start up, proper adjustment, operating, lubrication, and shutdown procedures.
.3 Safety precautions.
.4 Procedures to be followed in event of equipment failure.
.5 Other items of instruction as recommended by manufacturer of each system or item of equipment.

.3 Print or engrave operating instructions and frame under glass or in approved laminated plastic.

.4 Post instructions where directed.

.5 For operating instructions exposed to weather, provide weather-resistant materials or weatherproof enclosures.

.6 Ensure operating instructions will not fade when exposed to sunlight and are secured to prevent easy removal or peeling.

1.9 Operation and Maintenance Data

.1 Provide operation and maintenance data for incorporation into operation and maintenance manual specified in Section 01 33 00.

1.9 Operation and Maintenance Data (Cont'd)

.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.

1.10 Permits, Fees and Inspections

.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 the 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 Electrical Inspection Department and authorities having jurisdiction on completion of work to Engineer.

1.11 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.).

1.11 Contract Drawings (Cont'd)

.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 Install ceiling mounted components (such as speakers, etc.) in accordance with dimensioned reflected ceiling drawings, prepared by the (Architectural) Consultant.

.7 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.

.8 Verify that the spaces in which the equipment is to be installed is sufficient and install all equipment to maintain head room and clearances, to conserve space, comply with codes, and to ensure adequate space for future servicing.

.9 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.

1.12 As-Built Drawings

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

1.13 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, must be unconditionally warranted for not less than 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, 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.

1.14 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

1.14 Existing Conditions (Cont'd)

.2 (Cont'd)
were visible upon, or reasonably inferable from an examination of the site prior to submission of the bid.

PART 2 - PRODUCTS

2.1 Materials and Equipment

.1 Provide material and equipment in accordance with Section 01 61 00 - Common Product Requirements.

.2 Material and equipment to be CSA certified. Where CSA certified material and equipment are not available, obtain special approval from inspection authorities before delivery to site and submit such approval as described in PART 1 - SUBMITTALS.

.3 Factory assemble control panels and component assemblies.

2.2 Warning Signs

.1 Warning Signs: in accordance with requirements of authority having jurisdiction inspection authorities and Engineer.

.2 Decal signs, minimum size 175 x 250 mm (7" x 10").

2.3 Wiring Terminations

.1 Ensure lugs, terminals, screws used for termination of wiring are suitable for either copper or aluminum conductors.

2.4 Equipment Identification

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

.1 Nameplates: lamicoid 3 mm (1/8") thick plastic laser engraving sheet, white face, black core, lettering accurately aligned and engraved into core, 3M self adhesive unless specified otherwise. Emergency powered devices to have white face, red core.

.2 Sizes as follows:

NAMEPLATE SIZES

Size 1	10 x 50 mm(2/5"x 2")	1 line	3 mm(1/8") high
Size 2	12 x 70 mm(1/2"x 2 3/4")	1 line	5 mm(1/5") high
Size 3	12 x 70 mm(1/2"x 2 3/4")	2 lines	3 mm(1/8") high
Size 4	20 x 90 mm(3/4"x 3 1/2")	1 line	8 mm(1/3") high
Size 5	20 x 90 mm(3/4"x 3 1/2")	2 lines	5 mm(1/5") high
Size 6	25 x100 mm(1" x 4")	1 line	12mm(1/2") high
Size 7	25 x100 mm(1" x 4")	2 lines	6 mm(1/4") high

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

2.4 Equipment Identification (Cont'd)

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

.4 Allow for minimum of twenty-five (25) letters per nameplate and label.

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

.6 Receptacles/outlets: Laminated self adhering label mounted to front of coverplate (Use Brother P-Touch series labeller or equivalent).

2.5 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 coding: to CSA C22.1.

.4 Use colour coded wires in communication cables, matched throughout system.

2.6 Conduit and Cable Identification

.1 Colour code conduits, boxes and metallic sheathed cables.

.2 Code with plastic tape or paint at points where conduit or cable enters wall, ceiling, or floor, and at 15 m intervals.

.3 Colours: 25 mm (1") wide prime colour and 20 mm (3/4") wide auxiliary colour.

	Prime	Aux
up to 250 V	Yellow	
Telephone	Green	
Other Communication Systems	Green	Blue

.4 Cabling colours:

Public Address - Blue

2.7 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 Y-1-1-1955.

2.7 Finishes (Cont'd)

.1 (Cont'd)

.2 Paint indoor switchgear and distribution enclosures light gray to EEMAC 2Y-1-1958.

2.8 Standard of Acceptance

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

PART 3 - EXECUTION

3.1 Installation

.1 Do complete installation in accordance with CSA C22.1 except where specified otherwise.

3.2 Nameplates and Labels

.1 Ensure manufacturer's nameplates, CSA labels and identification nameplates are visible and legible after equipment is installed.

3.3 Location of Outlets

.1 Locate outlets in accordance with Section 26 05 32 - Outlet Boxes, Conduit Boxes and Fittings, where indicated on the Drawings.

.2 Do not install outlets back-to-back in wall; allow minimum 150 mm (6") horizontal clearance between boxes.

.3 Change location of outlets at no extra cost or credit, providing distance does not exceed 3000 mm (10') , and information is given before installation.

3.4 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 specified or indicated, verify before proceeding with installation.

3.4 Mounting Heights (Cont'd)

.3 Install electrical equipment at following heights unless indicated otherwise.
- .1 Wall receptacles:
  - .1 General: 450 mm (18").
- .2 Public Address outlets 450 mm (18").
- .3 Public Address call stations: 1200 mm (48").
- .4 Wall mounted speakers: as indicated.

3.5 Field Quality Control

.1 Conduct following tests in accordance with Section 01 45 00 - Quality Control.
- .1 Systems: public address, sound systems,

.2 Carry out tests in presence of Engineer.

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

3.6 Cleaning

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

.2 Clean and prime exposed non-galvanized hangers, racks and fastenings to prevent rusting.

3.7 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.

3.8 Fireproofing

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

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

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

3.8 Fireproofing (Cont'd)

.4 For non fire-rated locations, sealant shall be silicone that meets the 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.

3.9 Cutting and Patching

.1 All cutting and patching for the work of this Contractor shall be the responsibility of this Contractor in accordance with Section 01.

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

.3 Electrical contractors are responsible for any core drilling through existing foundations or concrete walls.

3.10 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 (i.e. transformers) must be made with flexible conduit. Use a minimum of 1m (3 ft.)of flexible cable at each device, formed into a 360 deg. loop.

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

END

PART 1 - GENERAL

1.1 Section Includes

.1 Materials and installation for wire and box connectors.

1.2 References

.1 Canadian Standards Association (CSA International)
- .1 CAN/CSA-C22.2 No.18-98, Outlet Boxes, Conduit Boxes, Fittings and Associated Hardware.
- .2 CSA C22.2 No.65-93(R1999), Wire Connectors.

.2 Electrical and Electronic Manufacturers' Association of Canada (EEMAC)
- .1 EEMAC 1Y-2, 1961 Bushing Stud Connectors and Aluminum Adapters (1200 Ampere Maximum Rating).

.3 National Electrical Manufacturers Association (NEMA)

1.3 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with the General Conatractor's waste management and disposal plan.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused wiring materials from landfill to metal recycling facility as approved by Engineer.

PART 2 - PRODUCTS

2.1 Materials

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

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

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

.4 Clamps or connectors for armoured cable and flexible conduit as required to: CAN/CSA-C22.2 No.18.

PART 3 - EXECUTION

3.1 Installation .1 Remove insulation carefully from ends of conductors and:

.1 Apply coat of zinc joint compound on aluminum conductors prior to installation of connectors.

.2 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.

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

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

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

END

PART 1 - GENERAL

1.1 Related Sections

.1 Section 26 05 20 - Wire and Box Connectors - 0 - 1000 V.

1.2 References

.1 CSA C22.2 No .0.3-96, Test Methods for Electrical Wires and Cables.

.2 CAN/CSA-C22.2 No. 131-M89(R1994), Type TECK 90 Cable.

1.3 Product Data

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

1.4 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with the General Contractor's Waste Management And Disposal plan.

.2 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

.3 Fold up metal banding, flatten and place in designated area for recycling.

1.5 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. Aluminum conductors will be acceptable only where specified.

.3 Branch circuit wiring shall be conductors in conduit: where subject to mechanical damage; in concrete block walls;and where indicated. Armoured cable Type AC90 (BX) may be used in accessible ceilings and for wiring in stud walls.

.4 Ampacity of cable to be based upon the 75°C column of Tables 1 through 4 in the CEC C22.1.

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 600V 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.

PART 3 - EXECUTION

3.1 Installation of Building Wires

.1 Install wiring as follows:

.1 In conduit systems in accordance with Section 26 05 34.

3.2 Installation of Armoured Cables

.1 Group cables wherever possible.

.2 Terminate cables in accordance with Section 26 05 20 - Wire and Box Connectors - 0 - 1000 V.

3.3 Installation of Cables and Voltage Drop

.1 Any wire or group of wires shall be sized according to the following chart. The voltage drop calculations are based on a 12 amp load on a 15 amp 120 volt circuit as per CEC C22.1 8-102.

Size of Wire	**Distance**
#12 AWG	0 m to 25 m (0 ft. to 82 ft.)
#10 AWG	25 m to 40 m (83 ft. to 131 ft.)
# 8 AWG	40 m to 63 m (132 ft. to 207 ft.)
# 6 AWG	63 m to 100 m (208 ft. to 328 ft.)
# 4 AWG	100 m to 155 m (329 ft. to 509 ft.)

END

PART 1 - GENERAL

1.1 Section Includes

.1 Materials and installation for connectors and terminations.

1.2 Related Sections

.1 Section 01 33 00 - Submittal Procedures.

1.3 References

.1 Canadian Standards Association (CSA International)
.1 CSA C22.2 No.41-M1987(R1999), Grounding and Bonding Equipment.

1.4 Product Data

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

1.5 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with Section the General contractor's - Waste Management And Disposal plan.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard and packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused metal and wiring materials from landfill to metal recycling facility as approved by Engineer.

PART 2 - PRODUCTS

2.1 Connectors and Terminations

.1 Copper long barrel or short barrel compression connectors as required sized for conductors.

PART 3 - EXECUTION

3.1 Installation

.1 Install terminations and splices in accordance with manufacturer's instructions.

.2 Bond and ground as required to CSA C22.2 No.41.

END

PART 1 - GENERAL

1.1 Related Sections

.1 Section 26 05 00 - Common Work Results - Electrical.

1.2 References

.1 Canadian Standards Association, (CSA International).
.1 Grounding and bonding equipment to: CSA C22.2 No. 41 - M1987(R1993).

1.3 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with the General Contractor's Waste Management And Disposal plan.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused metal materials from landfill to metal recycling facility as approved by Engineer.

.5 Fold up metal banding, flatten and place in designated area for recycling.

PART 2 - PRODUCTS

2.1 Equipment

.1 Grounding conductors: bare stranded copper, un-tinned, soft annealed, unarmoured, size as indicated.

.2 Insulated grounding and bonding conductors: green, type as per Section 26 05 21.

.3 Non-corroding accessories necessary for grounding and bonding 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.

2.2 Manufacturers

.1 Standard of Acceptance: Burndy Corp., Erico, McGraw-Edison (Canada) Ltd.

PART 3 - EXECUTION

3.1 Installation General

.1 Install complete permanent, continuous grounding and bonding systems including, conductors, connectors, accessories. Where EMT is used, run ground or bond wire in conduit. Installation should conform to the requirements of the Engineer and Local Authorities having jurisdiction over the installation.

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

.3 Protect exposed grounding and bonding conductors from mechanical injury.

.4 Use mechanical connectors for grounding and bonding 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 and bonding 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 Grounding

.1 Install grounding connections to typical equipment included in, but not necessarily limited to the following list: PA System control panels.

3.3 Grounding Bus

.1 Ground items of electrical equipment to existing ground bus in LAN Room with individual bare stranded copper connections size 6 AWG.

3.4 Communication Systems

.1 Install grounding connections for public address/sound, systems as follows:

.1 Public address/sound systems as indicated.

3.5 Field Quality Control

.1 Perform tests in accordance with Section 26 05 00 - Common Work Results - Electrical.

.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. Provide a written report of results to the Engineer.

.3 Perform tests before energizing electrical system.

.4 Disconnect ground fault indicator during tests.

END

PART 1 - GENERAL

1.1 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with the General Contractor's Waste Management And Disposal plan.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused metal materials from landfill to metal recycling facility as approved by Engineer.

.5 Fold up metal banding, flatten and place in designated area for recycling.

PART 2 - PRODUCTS

2.1 Support Channels

.1 U shape, size 41 x 41 mm (1 3/5" x 1 3/5"), 2.5 mm (1/10") thick, surface mounted, suspended or set in poured concrete walls and ceilings.

PART 3 - EXECUTION

3.1 Installation

.1 Secure equipment to hollow or solid 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.

3.1 Installation (Cont'd)

.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 50 mm (2") and smaller.
.2 Two-hole steel straps for conduits and cables larger than 50 mm (2").
.3 Beam clamps to secure conduit to exposed steel work.

.7 Suspended support systems.
.1 Support individual cable or conduit runs with 6 mm (1/4") dia. threaded rods and spring clips.
.2 Support 2 or more cables or conduits on channels supported by 6 mm (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 1.5 m (5') on centre 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 Engineer.

.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 Shop Drawings and Product Data

.1 Submit shop drawings and product data for cabinets in accordance with Section 01 33 00 - Submittal Procedures.

1.2 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with the General Contractor's Waste Management And Disposal plan.

.2 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

.3 Fold up metal banding, flatten and place in designated area for recycling.

PART 2 - PRODUCTS

2.1 Junction and Pull Boxes

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

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

2.2 Cabinets

.1 Refer to Section 27 51 16 for Public Address System Cabinets.

PART 3 - EXECUTION

3.1 Junction, Boxes and Cabinets Installation

.1 Install junction boxes in inconspicuous but accessible locations.

.2 Mount cabinets with top not higher than 2 m (6 1/2')above finished floor.

.3 Only main junction boxes are indicated.

3.2 Identification

.1 Provide equipment identification in accordance with Section 26 05 00 - Common Work Results - Electrical.

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

END

PART 1 - GENERAL

1.1 References

.1 CSA C22.1-1998, Canadian Electrical Code, Part 1.

1.2 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with the General Contractor's Waste Management And Disposal plan.

.2 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

PART 2 - PRODUCTS

2.1 Outlet and Conduit Boxes General

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

.2 102 mm (4") 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 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, minimum size 76 x 50 x 38 mm (3" x 2" x 1 1/2")or as indicated. 102 mm (4") 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, minimum size 102 x 54 x 48 mm (4" x 2 1/8" x 1 7/8").

.3 102 mm (4") square or octagonal outlet boxes for lighting fixture outlets.

.4 102 mm (4") square outlet boxes with extension and plaster rings for flush mounting devices in finished plaster or tile walls.

2.3 Fittings - General

.1 Bushing and connectors with nylon insulated throats.

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

.3 Conduit outlet boxes for conduit up to 32 mm (1 1/4") and pull boxes for larger conduits.

.4 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 debris during construction. Remove upon completion of work.

.3 For flush installations, where required, mount outlets flush with finished wall using plaster rings to permit wall finish to come within 6 mm (1/4") of opening.

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

END

PART 1 - GENERAL

1.1 References

.1 Canadian Standards Association (CSA)
.1 CAN/CSA C22.2 No. 18-98, Outlet Boxes, Conduit Boxes, and Fittings and Associated Hardware.
.2 CSA C22.2 No. 45-M1981(R1992), Rigid Metal Conduit.
.3 CSA C22.2 No. 56-1977(R1999), Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit.
.4 CSA C22.2 No. 83-M1985(R1999), Electrical Metallic Tubing.
.5 CSA C22.2 No. 211.2-M1984(R1999), Rigid PVC (Unplasticized) Conduit.
.6 CAN/CSA C22.2 No. 227.3-M91(R1999), Flexible Nonmetallic Tubing.

1.2 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with the General Contractor's Waste Management And Disposal plan.

.2 Place materials defined as hazardous or toxic waste in designated containers.

.3 Ensure emptied containers are sealed and stored safely for disposal away from children.

.4 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

1.3 Location of Conduit

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

PART 2 - PRODUCTS

2.1 Conduits

.1 Rigid metal conduit: to CSA C22.2 No. 45, galvanized steel, threaded.

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

2.2 Conduit Fastenings

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

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

.3 Channel type supports for two or more conduits at 1.5 m (5') oc.

2.2 Conduit Fastenings (Cont'd)

.4 Threaded rods, 6 mm (1/4") dia., 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° bends are required for 25 mm (1") and larger conduits.

2.4 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; where indicated; and where not specified or indicated otherwise.

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

.5 Minimum conduit size for power circuits: 16 mm (1/2").

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

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

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

.9 Install fish cord in empty conduits.

.10 Remove and replace blocked conduit sections. Do not use liquids to clean out conduits.

.11 Dry conduits out before installing wire.

3.2 Surface Conduits

.1 Run parallel or perpendicular to building lines.

.2 Run conduits in flanged portion of structural steel.

.3 Group conduits wherever possible on suspended or surface channels.

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

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

3.3 Concealed Conduits

.1 Run parallel or perpendicular to building lines.

END

PART 1 - GENERAL

1.1 References
.1 Canadian Standards Association (CSA)
.1 CAN/CSA-C22.2 No. 62-93/R1999, Surface Raceway Systems.

1.2 Product Data
.1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.

.2 Indicate types of raceways with terminology similar to that used in this Section.

1.3 Waste Management and Disposal
.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal, and with the Waste Reduction Workplan.

.2 Place materials defined as hazardous or toxic waste in designated containers.

.3 Ensure emptied containers are sealed and stored safely for disposal away from children.

.4 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

PART 2 - PRODUCTS

2.1 Plastic Raceway
.1 Plastic raceway: to CSA C22.2 No. 62, rigid extruded polyvinyl chloride.

.2 Channel: Single, white color with solid snap-on cover throughout

entire length.

.3 Channel with a adhesive backing for press on mounting. All channels to have screws for mounting as well with scre ws 300mm from each end and maximum 1200mm apart.

.4 Single gang extra deep non-metallic device box for surface raceway, 69.8mm(h) x 88.5mm(w) x 133mm(l), white color.

.5 Standard of Acceptance: Type 1 - Hubbell #PL1ABC7(raceway)and Panduit #JB1D1W (device box).

2.2 Fittings

.1 Elbows, tees, couplings and hanger fittings: to CSA C22.2 No. 62, manufactured as accessories to raceway supplied.

PART 3 - EXECUTION

3.1 Installation

.1 Install raceways before installation of wiring. Install covers for raceways and fittings after installation or wiring.

.2 Install supports, elbows, tees, connectors, fittings, bushings, adaptors as required.

.3 Keep number of elbows, offsets, connections to minimum.

.4 Use wiring with mechanical protection in channel raceways.

.5 Install barriers in raceways where different voltage systems are indicated.

END

PART 1 - GENERAL

1.1 Section Includes

.1 Receptacles, wiring devices, cover plates and their installation.

1.2 Related Sections

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.3 Section 26 05 01 - Common Work Results - Electrical.

1.3 References

.1 Canadian Standards Association (CSA International)

.1 CSA-C22.2 No.42-99(R2002), General Use Receptacles, Attachment Plugs and Similar Devices.

.2 CSA-C22.2 No.42.1-00, Cover Plates for Flush-Mounted Wiring Devices (Bi-national standard, with UL 514D).

1.4 Shop Drawings and Product Data

.1 Submit shop drawings and product data in accordance with Section 01 33 00 - Submittal Procedures.

1.5 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper plastic polystyrene corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused metal and wiring materials from landfill to metal recycling facility as approved by Engineer Consultant.

PART 2 - PRODUCTS

2.1 Receptacles

.1 Duplex receptacles, CSA type 5-15 R, 5-20 R, 125V, 15 A, 20 A, U ground, to: CSA-C22.2 No.42 with following features:
- .1 White urea moulded housing.
- .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 #CRF15WHI (5-15R), #CRF20WHI(5-20R).

.2 Single receptacles CSA type 5-15 R, 125 V, 15A, U ground with following features:
- .1 White urea moulded housing.
- .2 Suitable for No. 10 AWG for back and side wiring.
- .3 Four back wired entrances, 2 side wiring screws.

.3 Other receptacles with ampacity and voltage as indicated.

.4 Receptacles of one manufacturer throughout project.

.5 Acceptable materials: Hubbell, Leviton, Legrand or approved equal.

2.2 Cover Plates

.1 Cover plates for wiring devices to: CSA-C22.2 No.42.1.

.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.

PART 3 - EXECUTION

3.1 Installation

.1 Receptacles:
- .1 Install receptacles in gang type outlet box when more than one receptacle is required in one location.
- .2 Mount receptacles at height in accordance with Section 26 05 01 - Common Work Results - Electrical as indicated.
- .3 Where split receptacle has one portion switched, mount vertically and switch upper portion.

.2 Cover plates:
- .1 Protect stainless steel cover plate finish with paper or plastic film until painting and other work is finished.

3.1 Installation (Cont'd)

.2 Cover plates:(Cont'd)

.2 Install suitable common cover plates 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 Related Sections

.1 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.

1.2 References

.1 American National Standards Institute
.1 ANSI J-STD-607-A-2002, Joint Standard - Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications.

.2 Telecommunications Industries Association (TIA)/Electronic Industries Alliance (EIA)
.1 TIA/EIA-606-2002, Administration Standard for the Commercial Telecommunications Infrastructure.

.3 U.S. Department of Labor/Occupational Safety and Health Administration (OSHA)
.1 Nationally Recognized Testing Laboratory (NRTL).

1.3 System Description

.1 Telecommunications grounding and bonding system consist of grounding busbars, bonding backbones, and other bonding conductors.

.2 Provides ground reference for telecommunications systems within building and bonding to it of telecommunications rooms.

.3 Metallic pathways, cable shields, conductors, and hardware within telecommunications spaces are bonded to telecommunications grounding and bonding system.

1.4 Quality Assurance

.1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 30 - Health and Safety Requirements.

1.5 Delivery, Storage and Handling

.1 Waste Management and Disposal.

.2 Separate waste materials for reuse and recycling in accordance with The General Contractor's Waste Management and Disposal Plan.

PART 2 - PRODUCTS

2.1 Warning Labels

.1 Non-metallic warning labels to: ANSI J-STD-607-A.

.2 Identify labels with wording "If this connector is loose or must be removed, please call the building Telecommunications Manager".

PART 3 - EXECUTION

3.1 Bonding Conductors General

.1 When placed in ferrous metallic conduit or EMT longer than 1 m, bond to each end of conduit or EMT using 6 AWG copper conductor.

3.2 Bonding to TGB

.1 Bond metallic raceways in telecommunications room and telecommunications equipment room to TGB using #6 AWG green insulated copper conductor.

.2 For cables within telecommunications room and equipment room having shield or metallic member, bond shield or metallic member to TGB using 6 AWG green insulated copper conductor.

.3 Bond **each** cabinet located in telecommunications room or equipment room to TGB using 6 AWG green insulated copper conductor.

3.3 Labelling

.1 Apply warning labels to telecommunications bonding and grounding conductors.

.2 Apply additional administrative labels to: TIA/EIA-606.

END

PART 1 - GENERAL

1.1 Related Sections

.1 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.

.2 Section 26 05 36 - Cable Trays for Electrical Systems.

1.2 System Description

.1 Empty telecommunications raceways system consists of outlet boxes, cover plates, conduits, cable trays, pull boxes, J-hooks, sleeves and caps, and fish wires.

.2 Overhead cabletray distribution system.

1.3 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with The General Contractor's Waste Management and Disposal Plan.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene, and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused metal, conduit and wiring materials from landfill to metal recycling facility as approved by Engineer

.5 Fold up metal banding, flatten and place in designated area for recycling.

PART 2 - PRODUCTS

2.1 Material

.1 Conduits: EMT type, in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.

.2 Cable trays: type, in accordance with Section 26 05 36 - Cable Trays for Electrical Systems.

.3 Outlet boxes and fittings: in accordance with Section 26 05 32 - Outlet Boxes, Conduit Boxes and Fittings.

.4 Fish wire: polypropylene type.

PART 3 - EXECUTION

3.1 Installation .1 Install raceway system, including overhead distribution system, fish wire, outlet boxes, pull boxes, cover plates, conduit, sleeves and caps, J-hooks, miscellaneous and positioning material to constitute complete system.

END

PART 1 - GENERAL

1.1 Related Sections

.1 Section 27 05 26 - Grounding and Bonding for Communication Systems.

.2 Section 27 05 28 - Pathways for Communication Systems.

1.2 References

.1 Canadian Standards Association (CSA International)
.1 CSA-C22.2 No. 214-02, Communications Cables (Bi-National standard with UL 444).
.2 CSA-C22.2 No. 232-M1988(R2004), Optical Fiber Cables.

.2 Telecommunications Industry Association (TIA)/Electronic Industries Alliance (EIA)
.1 TIA/EIA-568-B.1-(2001), Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements.
.2 TIA/EIA-568-B.2-(2001), Commercial Building Telecommunications Cabling Standard, Part 2: Balanced Twisted-Pair Cabling Components.
.3 TIA/EIA-568-B.3-(2000), Optical Fiber Cabling Components Standard.
.4 TIA/EIA-606-A-(2002), Administration Standard for the Commercial Telecommunications Infrastructure.
.5 TIA TSB-140-2004, Telecommunications Systems Bulletin - Additional Guidelines for Field-Testing Length, Loss and Polarity of Optical Fiber Cabling Systems.
.6 TIA-598-C-(2005), Optical Fiber Cable Color Coding.

1.3 Definitions

.1 Refer to TIA/EIA-598-C, Annex A for definitions of terms: optical-fiber interconnect, distribution, and breakout cables.

1.4 System Description

.1 Install system in accordance with the "Government of PEI Structure Cabling Standards" as shown on the drawings.

.2 Structured telecommunications wiring system consist of unshielded-twisted-pair and optical fiber cables, terminations, connectors, cross-connection hardware and related equipment installed inside building for occupant's telecommunications systems, including voice (telephone), data, and image.

.3 Installed in physical star configuration with separate horizontal and backbone sub-systems.
.1 Horizontal cables link work areas to telecommunications rooms located on same floor.

1.4 System Description (Cont'd)

.3 (Cont'd)
.2 Telecommunications rooms linked to main terminal/equipment room (MT/ER) by backbone cables.
.3 MT/ER also linked to Entrance Room by backbone cables.

1.5 Submittals

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

.2 As-built Records and Drawings:
.1 Provide two (2) bound complete hard-copy sets of as-built records to the Departmental Representative Engineer Consultant.
.1 Provide and place one hard copy of as-built records for each telecommunications room in plan holder in each telecommunications room.

1.6 Quality Assurance

.1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 30 - Health and Safety Requirements.

1.7 Delivery, Storage and Handling

.1 Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with The General Contractor's Waste Management and Disposal Plan .

PART 2 - PRODUCTS

2.1 FOUR-PAIR 100 Ohm Balanced Twisted Pair Cable

.1 Four-pair, 100 ohm balanced unshielded-twisted-pair (UTP) cable, blue color, flame test classification FT4 or MPG or CMG to: CSA-C22.2 No. 214, Category 6 (Cat 6) to: TIA/EIA-568-B.2.Belden #48120061000.

2.2 Work Area UTP 2-Pair.3 Modular Jack

.1 Eight-position green color MDVO style modular jack ("RJ-45"), type T568A Category 6 to: TIA/EIA-568- B.2:
.1 In self-contained box, four jacks per box.
.2 Mounted in compatible single gang faceplate, sloped entry, four jack positions per faceplate.
.3 Belden #AX101071.

2.4 Termination and Cross-Connection Hardware for UTP

.1 Patch panel, rack units high, ports:
.1 Each port equipped with factory installed "RJ-45" jacks, type T568A Category 6 to: TIA/EIA-568-B.2.
.2 Provide minimum of 25% spare capacity.
.3 Belden #1424P.

2.5 UTP Patch Cords

.1 Patch cords with factory-installed male plug at one end to mate with "RJ-45" jack terminal strip and with factory-installed male plug at other end to mate with "RJ-45" jack terminal strip Category 6, 4 pairs to: TIA/EIA-568-B.2.

.2 Two patch cords are to be provided for each data drop, 1220mm (4ft) long, Belden #C601106004.

PART 3 - EXECUTION

3.1 Installation of Termination Hardware

.1 Install termination hardware in cabinet as indicated and according to manufacturers' instructions. Identify and label as indicated to: TIA/EIA-606-A.

3.2 Installation of Horizontal Distribution Cables

.1 Install horizontal cables as indicated in cable trays and "J" hooks from telecommunication rooms to individual work-area devices. Fill J-hooks to 40% of maximum fill capacity. Identify and label. Caddy #CAT16(maximum 15 Cat 6), CAT 21(maximum 40 Cat 6), CAT 32 (maximum 60 Cat 6), CAT 48(maximum 150 Cat 6), CAT 64(maximum 220 Cat 6) as indicated to: TIA/EIA-606-A.

.2 "J" hooks to support cables at intervals not exceeding 600mm (2ft).

.3 Terminate horizontal cables in telecommunications room and at individual work-area jacks.
.1 Identify and label as indicated to: TIA/EIA-606-A.

.4 Coil spare cables and store in ceiling space in zone.

.5 Harness any slack cable in racks.

3.3 Installation of Backbone Cables

.1 Install backbone cables from each telecommunications room to main terminal/equipment room (MT/ER) as indicated and according to manufacturers' instructions.
.1 Identify and label as indicated to: TIA/EIA-606-A.

3.4 Field Quality Control

.1 Test horizontal UTP cables as specified below and correct deficiencies provide record of results as hard copy electronic record on floppy disk CD.

.1 Perform tests for Permanent Link on installed cables, including spares:

.1 Category 6 using certified level III tester to: TIA/EIA-568-B.2.

.2 Perform tests for Channel on 20 % of cross-connected data horizontal cabling installed from each telecommunications room, including shortest and longest drops from each telecommunications room: should more than 5 % of tested cables fail, test remaining cross-connected data cables.

.1 Category 6 using certified level III tester to: TIA/EIA-568-B.2.

.2 Test backbone UTP cables as specified below and correct deficiencies: provide record of results as hard copy electronic record on floppy disk CD.

.1 Perform tests for Permanent Link on 4-pair cables:

.1 Category 6 using certified level III tester to: TIA/EIA-568-B.2.

.2 Perform Wire Map tests on multi-pair UTP cables to: TIA/EIA-568-B.1.

.3 Provide record of results as hard copy electronic record on floppy disk CD to: TIA/TSB-140.

END

PART 1 - GENERAL

1.1 Related Sections

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.3 Section 01 78 00 - Closeout Submittals.

.4 Section 26 05 01 - Common Work Results - Electrical.

.5 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings: Conduits.

1.2 References

.1 Industry Canada - Terminal Attachment Program
.1 CS-03-1996, Telecommunication Apparatus Compliance Specification, Issue 8.

1.3 System Description

.1 Public address loudspeaker system to incorporate:

.1 Voice paging.
.2 play pre-recorded messages.
.3 Distribute music.
.4 Schedule events.
.5 Control Using software.
.6 A ditional features as specifiedd

.2 Operations:
.1 Paging:
.1 Voice paging from telephone set overrides broadcast or recorded music reproductions.
.2 Selective area page to areas as indicated.
.3 Emergency page to all areas.
.2 Music:
.1 Music from an external source.
.2 Speaker selection made handsets.

.3 Systems in various configurations shall be stand alone, wall mounted.

.4 Systems specified is the Carehawk CH1000.

1.4 Shop Drawings

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

1.4 Shop Drawings (Cont'd)

.2 Include, riser diagram, block diagram of complete public address system.

.3 Public address system design criteria.

1.5 Closeout Subbmittals

.1 Provide operation and maintenance data for public address system for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

.2 Include:
.1 Operation instructions.
.2 Description of system operation.
.3 Description of each subsystem operation.
.4 List specifying each piece of equipment in system or subsystem by its original manufacturer name and model number.
.5 Part list specifying parts used in equipment by identification numbers that are standard to electronic industry.

.3 Provide As-built drawings including any changes made to the system during installation.

1.6 Waste Management and Dosposal

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper plastic polystyrene corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused metal and wiring materials from landfill to metal recycling facility as approved by Departmental Representative Consultant.

.5 Fold up metal banding, flatten and place in designated area for recycling.

1.7 System Startup

.1 Manufacturer's factory service engineer to instruct:
.1 Maintenance personnel in maintenance of system.
.2 Operating personnel in use of system. Provide 8 hours of onsite training. User training shall consist of operation of all system functions and scheduling software.

1.8 Extra Materials

.1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.

1.9 Support

.1 The users shall have access to telephone support from the manufacturer at no additional cost for the life of the product.

1.10 Regulatory Requirements

.1 The entire installation shall comply with all applicable electrical and safety codes. The system and additional applicable equipment shall be tested and certified to UL/CSA 60065. Certifications shall be completed by a Nationally Recognized Testing Laboratory, (UL, CSA, TUV, etc.).

.2 All equipment with digital apparatus (microprocessors) that generate and use timing signals at a rate in excess of 9,000 pulses per second to compute and operate must meet FCC, Industry Canada regulations, and DOC CSA standards C108.8 (Electromagnetic Emissions).

1.11 Warranty

.1 The manufacturer shall provide a five year warranty against defects in material and workmanship. All materials shall be provided at no expense to the owner during normal working hours. The warranty period shall begin on the date of acceptance by the owner/engineer.

.2 Software service packs released from time to time shall be available to the user for the life of the product at no additional cost.

.3 The contractor supplying the equipment shall show satisfactory evidence, upon request, that they maintain a fully equipped service organization capable of furnishing adequate inspection and service to the system, including replacement parts. The vendor shall be prepared to offer a service contract for the maintenance of the system after the guarantee period. The bidder shall produce evidence that they have a fully experienced and established service organization for at least five years and proven satisfactory installations during that time.

PART 2 - PRODUCTS

2.1 Materials

.1 Conduits: to Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.

2.2 Cabling

.1 The system shall be capable of using CAT-5(e), CAT-6, and CAT-3 unshielded cabling. System not capable of using all of the above wire types shall not be considered.

.2 The system shall be capable of using two wire conductors for a speaker and call button referred from herein as a 2-wire circuit. It shall be possible to mix 2-wire and standard 4-wire circuits on the same switching/line card. Systems that cannot mix 2-wire and 4-wire circuits on the same switching/line card shall not be considered. Systems that require more than two conductors or require shielded cable shall not be considered.

.3 It shall be possible to distribute the switching/line cards of the system up to 2700 feet using a single home run eight conductor cable. Systems that require networking of multiple central systems to be distributed shall not be considered. Systems that require the use of Ethernet components to bridge the 2700 foot distance shall not be considered.

.4 It shall be possible to network the system with additional systems using copper wire, single mode fiber optic and multimode fiber optic cables. Systems that do not allow for the use of fiber optic cable shall not be considered.

2.3 System Design

.1 Features shall include but not be limited to; priority based access to voice functions, emergency paging, emergency call-in, covert PC based call-in, pre-recorded emergency announcements and external and internal telephone access.

.2 The system shall be an event driven design.

2.4 Microcontroller

.1 The system shall contain a central microcontroller capable of a minimum of 500 MHz processing speed to allow for the addition of future features.

.2 The system shall have flash based removable storage media of a size no smaller than 1 gigabyte. It shall be possible to remove the storage media from one system to

2.4 Microcontroller (Cont'd)

.2 (Cont'd)
another like system with no need to adjust the configuration files.

.3 The system shall have at least 512 Megabytes of system ram. Said RAM shall be removable and upgradable.

2.5 Central Cabinet

.1 The system shall contain natively RS232, RS485, USB, and Ethernet ports for communication to any third party system.

.2 The system shall contain five open collectors, three dry contacts, and six general purpose inputs for third party system integration or for general panic buttons. It shall be possible to expand inputs or outputs to any number needed.

.3 The system central cabinet shall be a wall mounted. Total weight of the central cabinet shall not exceed 35 lbs.

.4 The system shall contain no moving parts that suffer from wear or that require maintenance.

.5 The system shall draw no more than 3.5A of current at full load including all system accessories.

.6 The system shall have integrated surge protection for all audio ports and switching/line card ports. Said surge protection shall be replaceable in the field with no need to return parts for repair.

.7 Standard of Acceptance: Carehawk #CH1000-1I-1A-1PG.**(supplied by Owner)**

2.6 Amplifiers

.1 The system shall use Class D digital amplifier with at least 250 Watts RMS and 300 Watts peak output. Amplifier distortion shall not exceed 0.2% at 90% load.

.2 The Class D amplifier shall be direct drive 25V constant voltage type.

.3 The system shall filter all voice signals through a Digital Signal Processor (DSP) to maximize voice intelligibility.

.4 The system shall have 45 Ohm conversion modules available on a switching/line cards basis to convert the 25V audio signal to 45 Ohm for use with 45 Ohm speakers.

.5 The system amplifiers shall go to sleep thus reducing their current draw when not in use.

2.6 Amplifiers (Cont'd)

.6 The system amplifiers shall have a built in pink noise generator for testing speaker quality and audio levels.

2.7 Tones

.1 The system shall have at least 25 tones available for bells, reminders, and other events.

.2 The system shall support WAV type audio files. The user shall be able to add 25+ custom WAV files for use as pre-recorded announcements, bells, reminders, pre-announce tones, or any other system tone.

2.8 Swtiching/ Line Cards

.1 The system shall support remote switching/line cards with 16 and 32 audio ports sizes available. A single central cabinet shall support up to eight 32 port cards. The switching/line card shall be powered from the central cabinet out to 2700 feet away from the central cabinet.

.2 Standard of Acceptance: Carehawk #SS16/SS32.**(Supplied by Owner)**

2.9 Wall Cabinet

.1 Metal wall cabinet with 16 gauge cold rolled steel, black finish, #12-24 threaded rail type, 5 rack units and NEMA 2 rating.

.2 Cabinet to house up to two(2) SS16's, patch panels and power amps.

.3 Standard of acceptance: Hubbell #RE4B.**(Supplied by Owner)**

2.10 Master Clock

.1 The system shall contain an integral master clock.

.2 The master clock shall be capable of being synchronized by a Network Time Sever (NTP).

.3 The master clock shall provide for automatic daylight saving time adjustment with leap year programming.

.4 The master clock shall support unlimited schedules with unlimited events on said schedules.

.5 The master clock shall be calendar based capable of future event programming at least 30 years in the future.

.6 The master clock shall allow for scheduling tone events, output events and program source events.

2.11 Administrative Telephones

.1 The system shall not require an Administrative console to operate. All system functions shall be accessible via telephone codes from any internal or external telephone.

.2 The Administrative telephone shall have the following features.
- .1 Desk & wall mountable
- .2 Minimum 8 line by 20 character back lit display
- .3 Wizard driven menu system for ease of use
- .4 200 speed dials
- .5 Head set compatible
- .6 Integrated speaker phone for hands free use

.3 Standard of Acceptance: Carehawk #AP1.**(Supplied by Owner)**

2.12 Standard Phones

.1 The system shall allow for the use of analog phones with call display.

.2 Standard of Acceptance: Aastra Telecom #9116. **(None Required)**

2.13 Call Switch Station

.1 The system shall allow for the use of normally open, normally closed, wireless, and virtual call switches.

.2 The system shall allow for the use of virtual call switches installed on local PC computers.

.3 Standard of Acceptance: Carehawk #CS100. **(Supplied by Owner)**

2.14 Call Button/ Speaker Station

.1 Call in switches and speaker flush mounted to a three gang backbox.

.2 The station operates as both a microphone and speaker to provide two-way voice communications with the PA system.

.3 Pressing the momentary switch signals a call to the PA system.

.4 Standard of Acceptance: Dukane #4A1480A.**(Supplied by Owner)**

2.15 Additional Features

.1 Tone signal generator for time and alarm signals.

.2 Bridging control to provide facilities between local sound source and sound control rack.
.1 Volume control to provide local volume regulations of programme received from console.
.2 Voice activitated programme control relay.
Carehawk #VAR1.**(Supplied by Owner)**

.3 Media Player, Carehawk #MPD100.**(Supplied by Owner)**

.4 BIX black to RJ45 Cables, Carehawk #CBBIX.**(None Required)**

.5 Auto attenuator module, Carehawk #AT1.**(Supplied by Owner)**

.6 Digital Amplifier module, 100W. Carehawk #DAF100-25.

(Supplied by Owner)

.7 Digital Amplifier module, 300W. Carehawk #DAF300-25.

(Supplied by Owner)

.8 UPS, 1000VA/1000W, 5-15P input plug, (8) 5-15R output receptacles. Eaton #5PX1000RT.**(Supplied by Owner)**

.9 Power Supply. Carehawk #AD1.**(Supplied by Owner)**

2.16 Sound Reproducers

.1 Lay in 305mm x 610mm (12" x 24") speaker c/w 200mm(8") speaker size, 4W rotary tap transformer and RJ45 terminations

.2 Support to verify quantity of existing speakers that can be reused and verify that all are compatible with this system.

.3 Standard of Acceptance: Carehawk #SPL-1212T RJ.

(Supplied by Owner)

2.17 Horns

.1 Weather resistant 15 watt with built-in 25V/70V transformer, adjustable power taps. To TOA #SC-615T.**(Supplied by Owner)**

2.18 System Operation

.1 The system shall allow for user-programmable room number assignment in the form of 3, 4, 5 or 6-digit alphanumeric format for architectural room numbering and a 60 character alpha-numeric caller ID description associated with each audio port.

.2 The system shall allow for a minimum of 64 page/time/program zones that can be assigned and configured as desired.

.3 The system shall allow for the assigning of each call-in button to one or more of 32 distinct call-in destination groups.

.4 The system administrative telephone shall allow for the user to view the alphanumeric room address and the caller-ID information of the calling station and the call priority (e.g., emergency, normal) on the display. The administrative telephone shall use distinctive ringing patterns to annunciate the type of call.

.5 The system shall be capable of receiving 2048 call-ins simultaneously without data collisions or loss of any call-ins. Call-ins shall remain in the system call queue until answered. Emergency Call-ins shall automatically move to the top of the call-in queue and annunciated in the in-use telephone earpiece to notify the user of an emergency call.

.6 The system shall communicate with each classroom loudspeaker hands-free. The staff member or occupant in the classroom need not operate any buttons to reply to

a
call. The Administrative telephone operator shall be able to use the hands-free speaker phone or handset on an Administrative telephone.

.7 The system shall operate under the following audio priority scheme.

.1 An emergency page suspends all other audio.

.2 An emergency tone suspends all other audio except the above.

.3 A normal page suspends all other audio except the above.

.4 A tone suspends all other audio except the above.

.5 A program source audio event suspends nothing.

2.18 System Operation (Cont'd)

.7 (Cont'd)
.6 Interrupted lower priority functions shall be restored after conclusion of the higher priority function.

.8 The system shall allow a call-in to be escalated from a normal call-in to an emergency call-in at any time by pressing the call button twice within 2 seconds.

.9 The system shall allow for any connected telephone to place an emergency voice paging announcement.

.10 The system shall allow for operation via a GUI based PC based application. The PC application shall allow for emergency paging, normal paging, intercom, activation of any system/user tone, schedule changes, program distribution, call-in management, and on the fly room exclusion.

.11 The system shall use a PC based GUI scheduling tool for schedules and tone management. This tool shall not allow access to any system configuration controls. This tool shall not prevent the System from operating when being used. This tool shall allow the user to schedule events and manage tones over the local LAN/WAN and the Internet. It shall not be required to be directly connected to the central system to use this tool.

.12 The system shall have a built in 30 day log of every system function and access.

.13 The system shall have a built in real time system diagnostics application.

.14 The system shall allow for system diagnostics, system log access firmware updates, and programming over the local LAN/WAN or over the Internet.

PART 3 - EXECUTION

3.1 INSTALLATION

.1 Install equipment in accordance with manufacturer's instructions, and as indicated.

3.2 FIELD QUALITY CONTROL

.1 Perform tests in accordance with Section 26 05 01 - Common Work Results - Electrical.

.2 All new lines to undergo an impedance test.

.3 Conduct intelligibility test.

END

PART 1 - GENERAL

1.1 Related Sections

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.3 Section 01 78 00 - Closeout Submittals.

.4 Section 26 05 01 - Common Work Results - Electrical.

.5 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings: Conduits.

.6 Section 27 51 16 - Public Address System.

1.2 System Description

.1 Local sound reinforcing system to incorporate:

.1 Voice distribution by hand held plug in microphones.
.2 Voice distribution by wireless microphone systems.
.3 Distribute music via auxiliary inputs.

.2 Systems in various configurations shall be stand alone, wall mounted.

1.3 Shop Drawings

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

.2 Include, riser diagram, block diagram of complete local sound reinforcing system.

.3 Load sound reinforcing.

1.4 Closeout Subbmittals

.1 Provide operation and maintenance data for public address system for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

.2 Include:

.1 Operation instructions.
.2 Description of system operation.
.3 List specifying each piece of equipment in system or subsystem by its original manufacturer name and model number.
.4 Part list specifying parts used in equipment by identification numbers that are standard to electronic industry.

1.4 Closeout Subbmittals (Cont'd)

.3 Provide As-built drawings including any changes made to the system during installation.

1.5 Waste Management and Dosposal

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper plastic polystyrene corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused metal and wiring materials from landfill to metal recycling facility as approved by Departmental Representative Consultant.

.5 Fold up metal banding, flatten and place in designated area for recycling.

1.6 System Startup

.1 Manufacturer's factory service engineer to instruct:
.1 Maintenance personnel in maintenance of system.
.2 Operating personnel in use of system. Provide 4 hours of onsite training. User training shall consist of operation of all system functions.

1.7 Warranty

.1 The manufacturer shall provide a five year warranty against defects in material and workmanship. All materials shall be provided at no expense to the owner during normal working hours. The warranty period shall begin on the date of acceptance by the owner/engineer.

PART 2 - PRODUCTS

2.1 Equipment

.1 Local system shall include wall mount amplifier, speakers, microphone jacks, auxilary input etc. as specified herein.

2.2 In-Wall Amplifier

.1 Provide flush mount in-wall amplifiers as indicated on the drawings.

.2 The mixer power amplifier will control and mix up to six independent input signals plus two inputs with use of an expanding kit. The amplifier delivers up to 120 watts output power. Optional accessory modules to be available to allow the amplifier to be configured for a variety of applications. Edge connectors on the rear of the units permit modules to be easily inserted for use. Modules include microphone preamplifiers, auxiliary preamplifiers, bridging transformers, with line matching transformers, signal generator modules and interface paging module. Also available a module featuring 600-ohm balanced output capability and a module featuring auxiliary input and balanced line outpput for music-on-hold.

The mixer power amplifier has a built-in one-octave graphic equalizer with 9 bands to tailor sound system frequency response to room acoustics, reducing feedback tendencies and improving intelligibility. A built-in compressor circuit is provided to protect the output level from distortion as a result of excessive input and keep it constant. The compressor's threshold level can be adjusted. The mixer power amplifier has output terminals to match 4- or 8-ohm speaker systems, or a speaker distribution system may be connected to the 25 or 70-volt terminals. User's (blank) space is provided for additional functions to be made by the customers. Protection against tampering is assured by means of a key-locked hinged door. The amplifier can be mounted in any four-inch wall with use of the BX9F flush mounting back box.

.3 Facilities for receiving program material from the main system shall be provided. A voice activated priority relay shall be incorporated to mute local programming on paging from main system.

.4 Standard of Acceptance: TOA #W-912A c/w five (5) #ML-11T (Microphone/line input module). **(None Required**)

2.3 Microphne Outlets

.1 Microphone outlet shall have a stainless steel cover, XLR female mic input. The outlets shall be installed flush with wall surfaces, quantity as indicated on the drawings. RapcoHorizon #SP-2DFN-XLR (single gang wall plate) c/w two(2) Neutrik #NC3FD-L-1(female XLR connectors).**(None Required)**

2.4 Gymnasium Speakers

.1 Compact surface 12 inch, three way full range loudspeaker (60°H x 40°V) c/w trapezoidal 18mm-11Ply cross laminated birch enclosure, perforated steel grille and black finish.

.2 Fly ceiling area, angled toward the floor. Provide mounting brackets as required.

.3 Standard of Acceptance: Community #V2-3264B c/w #VFKIT (vertical flying kit).

2.5 Microphones

.1 One(1) Sennheiser XSW-1-XES UHF handheld wireless microphone system c/w one(1) receiver #EM-XSW1, one(1) bodypack transmitter #SK-XSW, one(1) power supply #NT-12-5-CW, 2 AA batteries and one(1) headset mocrophone #ME3-11. **(None Required**)

2.6 Wiring

.1 Wiring for speakers: 16 AWG, multistranded, FT-4 Belden Cat. #8473.

.2 Wiring for microphone outlets: 22AWG, shielded, Belden Cat. #8451.

.3 Wiring to and from main P.A. rack:
.1 22AWG, shielded, Belden Cat. #8451.

2.7 Manufacturers

.1 As specified above.

PART 3 - EXECUTION

3.1 Installation General

.1 Install all backboxes, conduit wiring, etc., for a complete system.

.2 Provide building personnel and maintenance staff with adequate training in the use of the equipment.

.3 Test and balance systems in the presence of the Engineeer.

END