

SECTION 16000 - ELECTRICAL PERFORMANCE SPECIFICATIONS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. The performance specifications define the scope of work and the standards by which the new electrical systems for this project shall be designed, approved, installed, managed, and commissioned. Compliance to this performance specification in both the design and installation of the electrical systems is mandatory.
- B. The Electrical Contractor, by reviewing these performance specifications and by submitting a bid based on any part of these performance specifications, acknowledges and agrees to the terms and content of these Performance Specifications. The Electrical Contractor, by acknowledging and agreeing to the terms and content of these performance specifications agrees to assume liability for the content of these Performance Specifications, and the design, the furnishing, the installation, the code compliance, the maintainability, and/or the operability of the system(s) outlined herein. In addition, the Electrical Contractor shall agree to release the Owner and the Owner's Representative of liability for the content of these Performance Specifications and the design, the furnishing, the installation, the code compliance, the maintainability, and/or the operability of the systems and equipment outlined herein
- C. For bidding purposes, all bidders shall submit base bids that comply with the constraints and requirements of the project electrical performance specifications, project manual, and all applicable local, state and federal codes, standards and requirements. The contractor may submit, to the owner, alternate materials or systems as deductive or additive alternates, and these shall be offered only as additional bids for owner consideration. All alternative proposal shall be submitted with sufficient documentation, including but not limited to, detailed systems description, systems performance, systems equipment, and detailed scope of work, for a full evaluation of the proposed alternate. The owner reserves the right to request additional documentation in order to properly evaluate the proposed alternative bid. The Owner and Owners Representative shall determine the acceptability of all proposed alternates.

1.2 DEFINITIONS

- A. Finished Spaces: Spaces other than electrical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawl spaces, and tunnels.
- B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and electrical equipment rooms.
- C. Exposed, Exterior Installations: Exposed to view outdoors, or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

- D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.
- E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants, but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.
- F. The use of the word "Provide": Whenever the word "Provide" is used in the specifications and/or on the drawings, it shall mean "furnish and install", "connect", "apply", "erect", "construct", or similar terms, unless otherwise indicated.
- G. The use of the word "Material": Whenever the word material is used in the specifications and/or on the drawings, it shall mean any "product", "equipment", "device", "assembly", or "item" required under the contract, as indicated by trade or brand name, manufacturer's name, standard specification reference or other description.
- H. The term "Electrical Contractor", "HVAC Contractor", "Plumbing Contractor" or "Contractor" refers to the Sub Contractor or his Sub Contractors responsible for the furnishing and installation of all work indicated on the Electrical, HVAC, and/or Plumbing drawings and in the Electrical, HVAC, and/or Plumbing Specifications.
- I. The term "Accessible" indicates ease of access with or without the use of ladders and without requiring extensive removal of other equipment, such as ductwork, piping, conduit, etc to gain access. "accessible ceiling" indicates acoustical tile type hung ceilings. Concealed spline or sheetrock ceilings with access panes shall not be considered accessible ceilings.

1.3 CODES, STANDARDS, REFERENCES, AND PERMITS

- A. All design and construction shall be in accordance with all applicable local, state, federal codes and standards, the Occupational Safety and Health Administration (OSHA) provisions, the Vermont Occupational Safety and Health Division provisions, and tenant requirements as outlined herein. This shall include but not be limited to the International Building Code, provisions, the 2011 Vermont Commercial Building Energy Standards, The Vermont Electrical Safety Code, Vermont Fire and Building Safety Code and the National Fire Protection Association (NFPA) standards.
- B. All material and workmanship shall comply with all the latest editions of all applicable Codes, Specifications, Local and State Ordinances, Industry Standards, Utility Company Regulations, and the Authority Having Jurisdiction.
- C. In case of differences between the Building Codes, State Law, Local Ordinances, Industry Standards and Utility Company Regulations and the Performance Specifications, the contractor shall promptly notify the Owner in writing of any such difference.
- D. In case of conflict between the Performance Specifications and the requirements of any Code or Authorities having jurisdiction, the most stringent requirements of the aforementioned shall govern for budgetary and bid purposes. However, no work will proceed until the Owner determines the correct method of installation.

- E. Should the contractor perform any work that does not comply with the requirements of the Performance Specifications, the applicable Building Codes, State Laws, Local Ordinances, Industry Standards and Utility Company Regulations, the contractor shall bear all costs arising in correcting the deficiencies, as approved by the Owner.

1.4 SCOPE OF WORK

- A. The Electrical Contractor's responsibilities shall include, but not be limited to, the design of complete and operational Electrical Systems for this Project, the coordination of all work with other trades, the furnishing and the installation of a complete Electrical System for the Project including, but not limited to, all the devices, conduit, specialties, and all materials and equipment required to create fully operational systems. The Electrical Systems designs shall conform to the requirements of this performance specification and with all applicable local, state, federal codes and standards, the Occupational Safety and Health Administration (OSHA) provisions, tenant requirements, and the 2011 Vermont Commercial Building Energy Standards.
- B. The contractor is responsible for Electrical installation of all the Electrical equipment and devices shown on the Architectural, Mechanical, Structural, and Site Plans and specifications.
- C. Design, coordinate, furnish and install, and commission a complete and operational electrical systems conforming to all the design criteria, performance and installation requirements and all applicable building and energy codes and standards.

1.5 BID FORM REQUIREMENTS

- A. The base bid shall include (2) two bid prices. The bid prices shall include all work and materials associated with Gadd Brook Residences, and the fit-up of finished spaces within the Gadd Brook Residences. The electrical contractor shall coordinate all base bid requirements with the construction manager prior to submission.
 - 1. The Electrical Contractor shall be responsible for designing, furnishing, and installing a complete and operational Electrical System. The Gadd Brook Residences scope of work shall include but not be limited to the building electrical entrance, fire alarm system, electrical feeds and panels within the spaces, lighting, power and fire alarm fit-up for all spaces, power for all mechanical equipment, lighting for all spaces, power for all spaces, fire alarm system coverage for all spaces, telecommunications entrance, cable television entrance, telecommunications risers, cable television risers, rough-in for all kitchen equipment, final connections to all kitchen and mechanical equipment, electrical permits and permit fees, and all temporary power, lighting and fire alarm coverage required during construction.
 - 2. The two bid prices shall be based on the following two mechanical system designs:
 - a. The Gadd Brook Residences base HVAC scope of work will be based on a water source heat pump system.
 - b. The Gadd Brook Residences alternate HVAC scope of work will be based on high-efficiency, propane fired furnaces for heating and high-efficiency, modulating direct-expansion cooling units for air conditioning.