



INVITATION TO BID

FINANCE DEPARTMENT

GREGORY N. L'HEUREUX
Finance Director

COLLEEN C. SELBERG
Purchasing Agent

REQUEST FOR PROPOSALS FROM DESIGN-BUILD CONTRACTORS RFP #23-20

The City of South Portland, Maine is requesting proposals to include all labor and materials to design and install a system of air conditioning and primary heating for the Planning and Development facility (former Hamlin School) for the City of South Portland.

The system shall be as described in other sections herein.

Complete written proposals shall be submitted in envelopes plainly marked "**Bid #23-20 Design-Build for Planning Dept.**" to the City Purchasing Agent, 25 Cottage Road, South Portland, Maine, 04106 not later than **2:00 P.M., Tuesday, December 17, 2019** at which time they will be publicly opened and read aloud. Proposals received after that time and date shall not be considered. Proposals will be evaluated in accordance with the specifications detailed in the attached. Consultants are requested to submit an original signed proposal and one additional copy.

A mandatory pre-bid meeting will take place **Friday, December 6, 2019, at 10:00 A.M., Planning and Development, 496 Ocean Street, South Portland, ME**

A deposit of 5% of the amount bid must accompany each bid. This may be a properly certified check, bank treasurer's check, bank money order, cash, or a bid bond. Checks and money orders shall be made payable to the City of South Portland. Such deposits will be returned to bidders within a reasonable time after signing of the contract. Failure to provide a bid deposit with your proposal at the time of opening will result in rejection of bid proposal. No exception will be made.

Proposals shall remain in effect for a period of 90 days after the opening date.

The selected consultant will be required to sign a standard City contract, provide a performance and payment bond and provide a certificate of insurance for public liability, property damage and worker's compensation coverage.

Each proposal shall be signed by a person legally authorized to bind the firm to a contract. The firm shall signify in their proposal that all conditions outlined in this Request for Proposal and the attached have been read and understood. The firm shall rely only on information contained in this Request for Proposal and written addenda hereto.

Selected sections of the firm's response may be incorporated as part of any agreement the City executes with the selected firm.

Questions regarding this Request for Proposal may be directed to David Cunningham, Director of Municipal Facilities, at (207) 767-7611 press #2 and ext #4144. Questions, which may influence responses, will be answered in writing with copies to all known bidders as addenda to this Request for Proposal.

The City of South Portland reserves the right to negotiate with the selected firm as to the scope of services and fees, whether or not that proposal is the lowest cost to the City. Negotiations are intended to lead to a binding contract, subject to City Council approval. Proposals must be submitted for the entire project.

The successful consultant shall agree to defend, indemnify, and hold the City harmless from and against any and all such claims whatsoever arising out of or occurring during the performance of these services and occasioned directly or indirectly by its error or omission, negligence or fault.

Prior to the City entering a contract, the successful consultant shall provide evidence satisfactory to the City of both Professional and Public Liability insurance and a certificate of Worker's Compensation insurance.

All bidders should quote net prices, therefore, exclusive of all Federal Excise Taxes.

The City of South Portland reserves the right to waive all informalities in bids, to accept any bid or any portion thereof, or to reject any or all bids should it be deemed in its best interest to do so. Except as otherwise required by law or as specifically provided to the contrary herein, the award of this bid shall be governed by the City's purchasing ordinance.

Colleen C. Selberg
Purchasing Agent

PROPOSAL

The UNDERSIGNED having examined the job site located at 496 Ocean Street, South Portland, Maine, hereby proposes to perform the work including all labor, materials and equipment necessary to complete the work in a manner satisfactory to the City of south Portland, in accordance with the attached invitation to bid, general specifications, and at following time and price specified on this page:

1. Design/Build for Planning and Development Building

Total contract price for a complete installation including all items specified

\$ _____

All removal, disposal, freight, permits and factory start-up shall be included within the bid pricing.

Guarantee labor period: _____

The work to be performed under this item shall be commenced by _____ and fully completed on or before _____.

Signed: _____
(Corporation, Firm or Company)

By: _____ Title: _____
(Officer, Authorized Individual or Owner)

Mailing Address: _____ State: _____

Zip Code: _____

Telephone: (____) _____

Fax: (____) _____

Email: _____

Date _____

NOTE: Bids must bear the handwritten signature of a duly authorized member or employee of the organization making the bid.

CITY OF SOUTH PORTLAND

AGREEMENT

THIS AGREEMENT is made this **XXth** day of **XXXX**, 2019, by and between the CITY OF SOUTH PORTLAND, a municipal corporation existing under the laws of the State of Maine and located in the County of Cumberland, State of Maine (hereinafter "CITY"), and **VENDOR NAME, of LOCATION**, (hereinafter "CONTRACTOR"),

WITNESSETH:

In consideration of the mutual covenants and conditions contained herein, the CITY and the CONTRACTOR agree as follows:

SPECIFICATIONS:

The CONTRACTOR shall furnish all of the material and perform all of the work shown on the drawings and described in the specifications entitled: **Bid #23-20 Request for proposals from Design/Build Contractors** which are attached hereto and made a part hereof, and the CONTRACTOR covenants that it shall do everything required by this Agreement, the Special Provisions of the Agreement, the Invitation to Bid and the Specifications in return for payment as provided herein.

COMPLETION DATE:

2. The work to be performed under this Agreement shall be commenced by _____ and fully completed on or before _____.

CONTRACT PRICE:

3. The CITY shall pay the CONTRACTOR for the performance of the Agreement the sum of \$_____.

PERFORMANCE BOND:

4. The CONTRACTOR shall furnish to the CITY at the time of the execution of this Agreement a performance bond and a labor and material payment bond each in the amount of \$_____ executed by a surety company satisfactory to the CITY, guaranteeing the performance and payment by the CONTRACTOR.

GUARANTEE:

5. The CONTRACTOR shall guarantee his work against any defects in workmanship and materials for a period of one year from the date of the CITY's written acceptance of the project.

PERMITS AND LICENSES:

6. Permits and licenses necessary for the prosecution of the work shall be secured and paid by the CONTRACTOR.

CITY'S RIGHT TO TERMINATE CONTRACT:

7. If the CONTRACTOR should be adjudged a bankrupt, or if it should make a general assignment for the benefit of creditors, or if a receiver should be appointed on account of its insolvency, or if it should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if it should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, and ordinances, or otherwise be guilty of a substantial violation of any provision of the Agreement, then the CITY when sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the CONTRACTOR, and his surety, seven (7) days 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 it may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Agreement price shall exceed the expense of the finishing the work, including compensation for additional architectural, managerial and administrative 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 CITY.

CONTRACTOR'S LIABILITY INSURANCE:

8. The CONTRACTOR shall not commence work under this Agreement until he has obtained all insurance required under this paragraph and such insurance has been approved by the CITY, nor shall the CONTRACTOR allow any subcontractor to commence work on his subcontract until all similar insurance required of subcontractor has been so obtained and approved. **It is a requirement that the CITY be named as an Additional Insured on the General Liability and Automobile Liability policies.**

(a) **Commercial General Liability** to include products and completed operations, and blanket contractual. The limits of liability shall be as follows:

Bodily Injury and Property Damage	\$1,000,000
Personal Injury and Advertising Injury	\$1,000,000
Per Project Aggregate	\$1,000,000

General Aggregate	\$2,000,000
Products and Completed Operations Aggregate	\$2,000,000
Medical Payments	\$10,000

(b) **Business Automobile Liability**

The CONTRACTOR shall maintain and cause all sub-contractors and lower tier contractors to maintain business automobile liability insurance covering all owned, non-owned, leased, rented or hired automobiles (symbol 1). The limits of liability shall be as follows:

Bodily Injury and Property Damage	\$1,000,000
-----------------------------------	-------------

Automobile physical damage coverage shall be at the option of the CONTRACTOR, all sub-contractors and lower tier contractors. The CITY shall not be liable for physical loss or damage to any owned, non-owned, leased, rented or hired automobile.

(c) **Workers' Compensation Insurance**

The CONTRACTOR shall maintain and cause all sub-contractors and lower tier contractor's to maintain Workers' Compensation and Employers Liability in accordance with the laws and regulations of the State of Maine. The limits of liability provided shall be as follows:

Coverage A:	Statutory
Coverage B:	\$100,000/\$500,000/\$100,000

(d) **Professional Liability**

If the CONTRACTOR is an Architect, Engineer or Surveyor, they shall maintain a policy of insurance to pay on their behalf whatever amounts that may become legally required to pay on account of an error, omission or negligent act.

Limits of Liability shall be as follows:

\$1,000,000 per occurrence and in the aggregate site specific.

It is a requirement that this policy be maintained for a period of three (3) years following completion of the project.

(e) **Certificates of Insurance** of the types and in the amounts required shall be delivered to the CITY prior to the commencement of any work by the CONTRACTOR, subcontractor or lower tier contractor or any person or entity working at the direction or under control of the CONTRACTOR. The CONTRACTOR shall assume the

obligation and responsibility to confirm insurance coverage for all sub-contractors or lower tier contractors who will participate in the project.

- (f) The Certificate of Insurance and the policies of insurance shall include a sixty (60) day notice to the CITY of cancellation, non-renewal or material change in coverage or form.
- (g) It is **required** that the CITY be named as an Additional Insured on the General Liability and Automobile Liability policies.
- (h) The CONTRACTOR and his surety shall indemnify and save harmless the CITY, his officers and employees from all suits, actions or claims of any character brought because of any injuries or damage received or sustained by any person, persons or property on account of the operations of the said CONTRACTOR; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in construction of the work; or because of any act or omission, neglect, or misconduct of said CONTRACTOR; or because of any claims or amounts recovered from any infringements or patent trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act" or of any other law, ordinance, order or decree; and so much of the money due to the said CONTRACTOR under and by virtue of his/her contract as shall be considered necessary by the CITY for such purpose, may be retained; or in case no money is due, his surety may be held until such suit or suits, action or actions, claim or claims, for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the CITY.

(i) **Waiver of Subrogation**

Payment of any claim or suit including any expenses incurred in connection therewith by the CITY, or any insurance company on behalf of the CITY shall not constitute a waiver of subrogation against the CONTRACTOR, sub-contractors or any lower tier contractor in the event that such claim or suit was caused by or contributed to as a result of the negligent acts of the CONTRACTOR, any sub-contractors or lower tier contractors.

(j) **Construction Agreement**

The CONTRACTOR shall and does hereby agree to indemnify , save harmless and defend the CITY from the payment of any sum or sums of money to any person whomsoever on account of claims or suits growing out of injuries to persons, including death, or damages to property, caused by the CONTRACTOR, his employees, agents or sub-contractors or in any way attributable to the performance and execution of the work herein contracted for, including (but without limiting the generality of the foregoing), all claims for service, labor performed, materials furnished, provisions and suppliers, injuries to persons or damage to property, liens, garnishments, attachments, claims, suits, costs, attorney's fees, costs of investigation and defense. It is the intention of this paragraph to hold the CONTRACTOR responsible for the payment of any and all claims, suits, or liens, of any nature character in any way attributable to or asserted

against the CITY, or the CITY and the CONTRACTOR, which the City may be required to pay. In the event the liability of the CONTRACTOR shall arise by reason of the sole negligence of the CITY and/or the sole negligence of the CITY's agents, servants or employees, then and only then, the CONTRACTOR shall not be liable under the provisions of this paragraph.

DAMAGES:

9. The CONTRACTOR shall defend, indemnify and save harmless the CITY and all persons acting for or in behalf of it against all claims for injuries (including death), loss or damage, arising out of the performance out this contract.

LIENS:

10. Neither the final payment nor any part of the retained percentage shall become due until the CONTRACTOR, if required, shall deliver to the CITY a complete release of all liens arising out of the Agreement, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as it has knowledge or information the releases and receipts include all the labor and material for which a lien could be filed; but the CONTRACTOR may, if any SUB-CONTRACTOR refuses to furnish a release or receipt in full, furnish a bond satisfactory to the CITY to indemnify it against any lien. If any lien remains unsatisfied after all payment are made, the CONTRACTOR shall refund to the CITY all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

ASSIGNMENT:

11. Neither party to the Agreement shall assign the Agreement or sublet it as a whole without the written consent of the other, nor shall the CONTRACTOR assign any moneys due or to become due to it hereunder, without the previous written consent of the CITY.

SUBCONTRACTS:

12. The CONTRACTOR shall not sublet any part of this Agreement without the written permission of the CITY. The CONTRACTOR agrees that it is as fully responsible to the CITY for the acts and omissions of its SUB-CONTRACTORS and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

USE OF PREMISES:

13. The CONTRACTOR shall confine its apparatus, the storage of materials and operations of its workers to limits indicated by law, ordinance and permits and shall not otherwise unreasonably encumber the premises with its materials. If any part of the project is completed and ready for use, the CITY may, by written and mutual consent, without

prejudice to any of its rights or the rights of the CONTRACTOR, enter in and make use of such completed parts of the project. Such use or occupancy shall in no case be construed as an acceptance of any work or materials.

CLEANING UP:

14. The CONTRACTOR shall at all times keep the premises free from accumulation of waste materials or rubbish caused by its employees or work, and at the completion of the work it shall remove all its rubbish from and about the project, and all its tools, scaffolding and surplus materials and shall leave its work "broom-clean" or its equivalent, unless more exactly specified. In case of dispute, the CITY may remove the rubbish and charge the cost to the CONTRACTOR.

PAYMENTS:

15. The CITY shall make payments on account of the Agreement as follows:

Within 30 days, as invoices are submitted for work completed to the satisfaction of the CITY.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

CITY OF SOUTH PORTLAND, MAINE

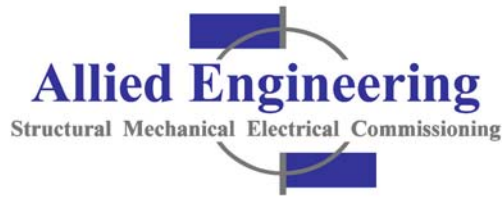
BY: _____
Witness

BY: _____
Scott Morelli
City Manager

CONTRACTOR

BY: _____
Witness

BY: _____



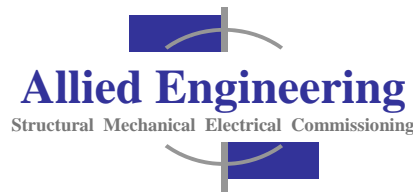
November 07, 2019

REQUEST FOR PROPOSALS FROM DESIGN-BUILD CONTRACTORS

GENERAL PROJECT REQUIREMENTS AND SCOPE

1. The purpose of this outline specification is to obtain competitive design build quotations from contractors.
2. Proposals shall include all labor and materials to design and install a system of air conditioning and primary heating for the Planning and Development facility (former Hamlin School) for the City of South Portland. The system shall be as described in other sections herein.
3. General program items are listed. Provide all items as required to meet code and owner requirements. The project shall be priced for competitive comparison. The Contractor may list any exceptions (adds or deducts) to the specification (value engineering, efficiency upgrades, other creative ideas) in his proposal for consideration, evaluation and disposition by the Owner.
4. The contractor will be the engineer of record and shall assume full responsibility for the concept, design, and construction of their proposed system. Contractor shall have design drawings produced and stamped by a State of Maine licensed professional engineer. Provide cad drawings as required for coordination and as required to obtain code approvals. Provide as-built cad drawings of final installations.
5. Submittal requirements:
 - a. The contractor shall provide the following submittals to the City of South Portland for review and approval:
 - Mechanical/Electrical/Structural design documentation to be submitted for review by the Owner and his designated representatives prior to permitting process.
 - Mechanical/electrical/roofing/structural equipment and material submittals shall be submitted to the Owner and the Owner designated representatives for review and approval prior to ordering.
 - Mechanical/electrical/roofing operations and maintenance manuals complete with warranty data shall be submitted to the owner upon substantial project completion.
6. All work shall be performed in accordance with applicable local, state and federal codes. Contractor shall obtain and pay for required permits.
7. Warrant all materials and work for not less than one year after final acceptance of the work. If required to provide remedial repair of previously installed work due to latent defect or unacceptable work performance, warrant the repaired work for one year after the completion and acceptance of the repair. For warranted items, furnish the manufacturers' original written warranty accompanied by a copy of the supplier's receipt showing place of purchase, telephone number of supplier, address, delivery order number if applicable, and ticket number.
8. Follow the recommended procedures of the SMACNA IAQ Guidelines for Occupied Buildings

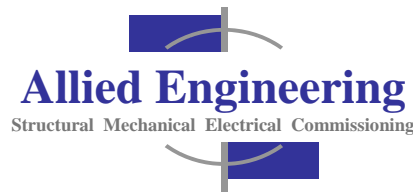
Page 1 of 13



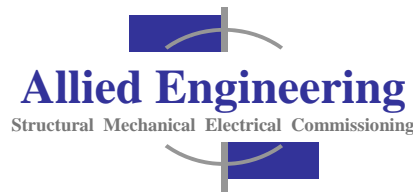
under Construction.

9. Cutting and Patching

- a. Include the cost of cutting and patching as required to physically rig the equipment into the various spaces.
- b. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed. Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.
- c. Temporary Support: Provide temporary support of Work to be cut.
- d. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- e. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- f. Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- g. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
- h. Coordinate all cutting and patching work strictly with structural drawings and structural requirements.
- i. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
- j. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
- k. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work.
- l. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing. Clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- m. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition. Roof work shall be provided in accordance with the existing roof warranty requirements.

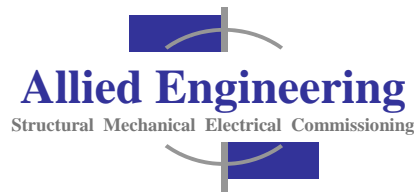


- n. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
10. Install all equipment in accordance with manufacturer's recommendations and the standards listed above. Install equipment and materials to provide required access for servicing and maintenance. Equipment manufacturers' minimum service clearances shall be observed. Coordinate architectural requirements.
11. Seal all penetrations with acoustical and/or fire sealant. Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe and duct penetrations. Seal penetrations with fire stop materials. Provide fire dampers and smoke detectors as required by code.
12. Install piping, ductwork, conduits and equipment to allow maximum possible headroom. Install mechanical systems above accessible ceilings to allow sufficient space for ceiling panel removal.
13. Equipment shall be started, tested, and checked per manufacturers' recommendations. Piping and pressure vessels shall be tested per code.
14. Provide all starters, disconnects, smoke detectors, controls, etc., as required for a complete and functioning system. Coordinate work with electrical contractor.
15. Where plenum returns are implemented, wiring shall be plenum-rated.
16. Maximum noise criteria shall not exceed ASHRAE recommendations.
17. All vibrating equipment shall be suspended with vibration isolators. Flexible connectors shall be used between vibrating equipment and piping/ductwork.
18. Piping
 - a. Provide all required piping, fittings, controls, supports, and accessories for a complete and functioning system.
 - b. Provide pipe labeling per ASME A13.1, "Scheme for the Identification of Piping Systems," for letter size, length of color field, colors, and viewing angles of identification devices for piping.
 - c. Piping materials and fittings shall be in accordance with code.
 - d. Provide isolation valves and unions at all equipment that requires servicing. Provide isolation valves at the base of each riser and at all major branches.
 - e. Field Welding: Comply with AWS D1.1.
 - f. Comply with MSS SP-69 for pipe hanger selections and applications. Support piping and tubing according to MSS SP-69 and manufacturer's written instructions.
 - g. Insulate all piping and systems as required to meet ASHRAE 90.1-2010 energy standard.
 - h. Install through-penetration firestop systems to comply with firestop system manufacturer's written installation instructions and published drawings for products and applications indicated.
 - i. Escutcheons: Provide for wall, ceiling, and floor penetrations in finished spaces where pipes are exposed.



HVAC SCOPE

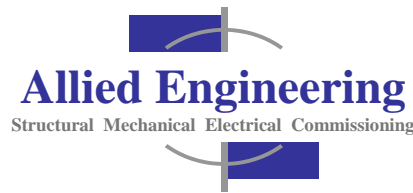
1. HVAC calculations shall be provided to confirm system sizing.
2. Provide new HVAC systems. The HVAC System shall consist of new ductless split system heat pumps as manufactured by Mitsubishi, Hyper Heat Series or approved equal by Daikin. The system shall provide reliable heating down to -13 deg. F.
3. The system shall include wall mounted evaporators at each of twelve functional spaces as directed by the City of South Portland. Each of the indoor evaporators shall include a rooftop mounted condensing unit-one for one systems.
4. The rooftop condensing units shall be mounted on appropriate stands to place the units out of the accumulated snow for winter operation. Mount stands on sleeper mounted perpendicular to roof framing. Sleepers shall be installed perpendicular to roof framing and shall extend such that minimum of 3 roof 4 roof joists are spanned. Provide a strip of walkway matt or 12” strip of membrane between the underside of the sleeper and the existing EPDM roof surfaces.
5. The units shall include individual controllers for each zone to provide independent operation at each functional space.
6. Include appropriately sized condensate pumps and drain lines to the extent required to route the condensate to approved drain receptors.
7. It is the intent that the new heat pump units provide mechanical cooling throughout the cooling season and provide the primary source of heat throughout the heating season. The existing steam boiler shall remain operational and continue to provide back-up heating. Coordinate with the City of South Portland to adjust the heating setpoints at the existing thermostats as necessary to render the heat pumps as the primary heat source in a manner that maximizes the operating efficiency for the facility.
8. The following shall outline the general requirements:
 - a. Design Criteria for Occupied Buildings
 - 1) Maine Uniform Building and Energy Code (MUBEC) consists of the following codes:
 - a) IBC, International Building Code – 2015
 - b) ASHRAE Standard 62.1 – 2013
 - c) ASHRAE Standard 90.1 – 2013
 - d) IECC, International Energy Conservation Code, 2009
 - e) Maine Internal Plumbing Code – UPC 2015
 - f) NFPA 1, Fire Code with amendments
 - g) NFPA 30A, Code for Motor Fuel Dispensing Facilities and Repair Garages
 - h) NFPA 31, Standard for the Installation of Oil-Burning Equipment
 - i) NFPA 54, National Fuel Gas Code
 - j) NFPA 58, Liquefied Petroleum Gas Code



- k) NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems
 - l) NFPA 101, Life Safety Code
- 2) HVAC system design to be based on 2017 ASHRAE Fundamentals Handbook Climatic design conditions for Portland, Maine:
- a) 99.6% Winter Frequency of Occurrence: 0.1 deg F dry bulb.
 - b) 0.4% Summer Frequency of Occurrence: 86.8 deg F dry bulb/71.3 deg F wet bulb.
- 3) Indoor Design Conditions
- a) Office Areas
 - Winter: 70 deg F.
 - Summer: 75 deg F; 55% RH maximum.
9. Contractor shall pursue Efficiency Maine prescriptive for eligible equipment.
10. HVAC Control System
- a. The control system shall utilize individual electronic space sensors to enable occupant control of terminal equipment in maintaining zone temperature and programming space occupancy schedules.
 - b. Provide complete installation, programming, and troubleshooting. Allow for at least one change-of-season callback for adjustments.
 - c. Provide controls, wiring, programming, installation, and startup per manufacturer's recommendations.
 - d. Provide owner training.
11. Start Up: Provide factory startup of equipment.
12. Provide a minimum of 8 hours of training by factory-trained field service technicians during the factory start up.
13. Equipment shall be warrantied for a period of not less than one year from the date of substantial completion.
14. Refrigerant piping shall comply with the heat pump manufacturers requirements and shall be insulated in accordance with IECC 2015 and ASHRAE 90.1-2013 requirements.

PLUMBING SCOPE

- 1. Condensate drainage systems shall be furnished and installed in accordance with the Maine Plumbing Code. Plumbing work shall be performed by, or under, the direct supervision of a licensed master plumber.
- 2. Insulation: Fiberglass or Armaflex. Insulation shall meet the requirements of IECC 2015 and

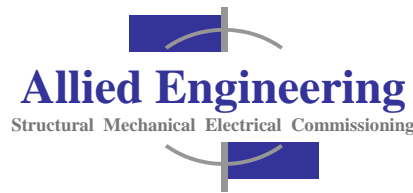


ASHRAE 90.1-2013.

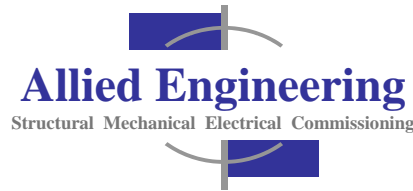
ELECTRICAL SCOPE

GENERAL REQUIREMENTS

1. The purpose of this outline specification is to obtain competitive design build quotations from contractors.
2. This performance specification sets forth the standard of performance to be achieved. The contractor is expected to exercise their judgment in how best to achieve the performance standard.
3. The contractor will be the engineer of record and shall assume full responsibility for the concept, design, and construction of their proposed system. If required by the Authority Having Jurisdiction, the contractor shall have design drawings produced and stamped by a State of Maine licensed professional engineer.
4. Warrant all materials and work for not less than one year after final acceptance of the work. If required to provide remedial repair of previously installed work due to latent defect or unacceptable work performance, warrant the repaired work for one year after the completion and acceptance of the repair. For warranted items, furnish the manufacturers' original written warranty accompanied by a copy of the supplier's receipt showing place of purchase, telephone number of supplier, address, delivery order number if applicable, and ticket number.
5. Submit Shop Drawings on all items of equipment and materials to be furnished and installed.
6. Include the cost of cutting and patching as necessary to complete the work. Employ skilled workers to perform cutting and patching. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
7. Install all equipment in accordance with manufacturer's recommendations and the standards listed above. Install equipment and materials to provide required access for servicing and maintenance. Equipment manufacturers' minimum service clearances shall be observed. Coordinate architectural requirements.
8. Install conduits and equipment to allow maximum possible headroom.
9. Equipment shall be started, tested, and checked per manufacturers' recommendations.
10. Provide wiring, starters, disconnects, controls, etc., as required for a complete and functioning system.



11. Removals: All un-used wiring, conduit, boxes, device, fixtures, controls, and equipment shall be removed completely.
12. All work, materials, and equipment shall comply with the rules and regulations of all codes and ordinances of the local, state, and federal authorities. Such codes, when more restrictive, shall take precedence over these plans and specifications.
 - a. Building: 2015 International Building Code
 - b. Energy: International Energy Conservation Code 2009
 - c. NFPA-101 Life Safety Code
 - d. Electrical: NFPA 70, 2017
 - e. Fire Alarm: NFPA 72.
13. Cooperate with all authorities having jurisdiction.
14. Compliance with laws and regulations governing the work on this project does not relieve the Contractor from compliance with more restrictive requirements contained in these specifications.
15. Multiple Units: When two or more units of materials or equipment of the same type or class are required, these units shall be products of one manufacturer.
16. All electrical equipment shall be approved by Underwriters Laboratories, Inc. Each system shall be products of a single manufacturer of established reputation and experience. The Contractor shall have supplied similar apparatus to comparable installations rendering satisfactory service for at least three years.
17. Prior to submission for review of any item of equipment, determine whether or not it will fit in the space provided. Any changes in the size or location of the material or equipment supplied, that may be necessary in order to meet field conditions or in order to avoid conflicts between trades, shall be brought to the immediate attention of the Architect/Engineer and approval received before such alterations are made.
18. Provide fire stopping for all penetrations through rated partitions and ceiling/floor assemblies. Fire stopping material shall maintain its dimension and integrity while preventing the passage of flame, smoke, and gases under conditions of installation and use when exposed to the ASTM E 119 time temperature curve for a time period equivalent to the rating of the assembly penetrated. Cotton waste shall not ignite when placed in contact with the non-fire side during the test. Fire stopping material shall be noncombustible as defined by ASTM E 136; and in addition for insulation materials, melt point shall be a minimum of 1700 degrees F for one-hour protection and 1850 degrees F for two-hour protection. Seals for floor, exterior wall, and roof shall also be watertight.
19. All work shall be in accordance with the National Electrical Code's requirements as amended to date, with the local electric utility company's rules, the Fire Underwriter's requirements, and all local, state and federal laws and regulations.



20. Identification: Provide tags on each end of all pulled wires giving location of other end. Provide phenolic nameplates for all panelboards, motor starters, disconnect switches (except switches located at motors), and duct smoke detector remote test/alarm-indicating stations.
21. Record Drawings: The Contractor shall keep on the job a set of prints showing any changes to the installation. These shall be given to the Owner at the completion of the work.

TEMPORARY POWER AND LIGHTING

1. Power Distribution: Provide weatherproof, grounded circuits with ground-fault interruption features, with proper power characteristics and either permanently wired or plug-in connections as appropriate for intended use. Provide overload-protected disconnect switch for each circuit at distribution panel. Space 4-gang convenience outlets (20 amp circuit) so that every portion of work can be reached with 100' extension cord.
2. Temporary Lighting: Provide lighting of intensity and quality sufficient for proper and safe performance of the work and for access thereto and security thereof. (Consult OSHA requirements.)

SERVICE ENTRANCE AND POWER DISTRIBUTION – EXISTING CONDITIONS

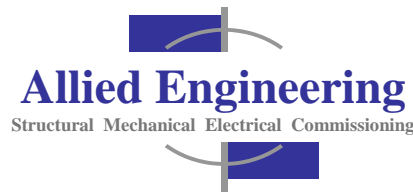
The building is served by a 225Amp 120/208-volt, three phase, four wire secondary electrical service entrance, which originates from a pole mounted secondary distribution system. Utility metering is via a standard building mounted meter socket. The service-entrance conductors terminate at an ITE 400Amp bus main panelboard with 225A main circuit breaker.

There are two sub panels fed from the main service panel; Panel 1 (100A-3pole; 3 phase) and Panel 2 (100A-2pole; single phase).

There is a 20 kVA , three phase solar array connected to the lectricla serive via an 80A-3pole circuit brekaer in the main distribution panel.

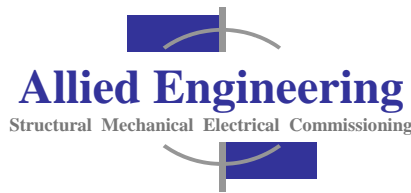
SERVICE ENTRANCE AND POWER DISTRIBUTION – SCOPE OF WORK

1. Furnish and install a new 400Amp bus main service entrance panel board rated for 208volt, three phase, four wire. Provide the main panelboard with a 400Amp main circuit breaker. Provide a CT cabinet and meter socket in accordance with CMP requirements. Coordinate new service drop and pole mounted utility transformer replacement with CMP via CMP's service upgrade application process. The proposed 400Amp service upgrade is a minimum size; the final size shall be calculated and confirmed based upon the final HVAC system design and respective equipment procurement.
2. Provide the new main service panel board with a 225Amp, three pole circuit breaker for back feed connection to the existing 225Amp service panel. At cut over time (once new service installation is complete) disconnect the existing 225Amp main service panel from the utility. Furnish, install and terminate a new feeder to the respective breaker in the new upgraded electrical service panel from the



existing main panel.

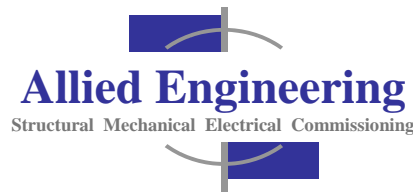
3. Provide the new main service panel with a minimum of (12) new 20Amp 2-pole circuit breakers to serve the (12) branch circuits required for the (12) new outdoor mini-split air conditioning units (MCA 16, MOCP 20). Provide (2) 20A-2-Pole spares. Exact quantity, rating and configuration of HVAC outdoor equipment branch circuits shall be coordinated with HVAC system design and equipment procurement.
4. Provide each of the (12) outdoor mini-split units with a minimum of a 30Amp 2-pole weatherproof NEMA 3R disconnect switch for the branch circuit wiring from the panel source to the A/C unit power terminals. Exact quantity, rating and configuration of disconnect switches shall be coordinated with HVAC system design and equipment procurement.
5. As a minimum provide each of the (12) indoor mini-split units with a motor rated toggle switch (MCA 1, MOCP 20). Wire (4) of the (12) indoor units, that are geographically adjacent, to a single 20Amp 1-pole branch circuit; total (3) new circuits required for the indoor units. Utilize the nearest existing panelboard (with available physical space and electrical capacity) as sources for the (3) new 20Amp 1-pole circuit breakers for the (12) indoor units. Utilize spare breakers in the existing panels if available provide new otherwise (UL listed for installation in the existing panel). It may be required to serve these loads from the new panel due to limitations of the existing panels. Exact quantity, rating and configuration of HVAC indoor equipment branch circuits shall be coordinated with HVAC system design and equipment procurement.
6. New panelboards shall be manufactured by Eaton, GE, or Square D. All components of panelboards (new or existing) shall be the product and assembly of the same manufacturer. All new distribution equipment shall be of the same manufacturer.
7. All panels shall be dead front safety type.
8. All panelboards shall be completely factory assembled with molded case circuit breakers.
9. Panelboards shall have the following features:
 - a. Non-reduced size copper or aluminum bus bars and connection straps bolted together and rigidly supported on molded insulators. Bus bar taps shall be arranged for sequence phasing of branch circuit devices.
 - b. Full size neutral bar mounted on insulated supports.
 - c. Ground bar with sufficient terminals for all grounding wires. The ground bar shall be insulated and isolated where called for on the drawings.
 - d. Buses braced for the available fault current at each location, but not less than 10,000 amperes symmetrical. All panelboards shall be fully rated. Series rated assemblies are not acceptable.
 - e. All breakers arranged so that it will be possible to substitute a two-pole breaker for two single pole breakers or a three-pole breaker for three single pole breakers when frame size is 100 amperes or less.
 - f. Design interior so that protective devices can be replaced without removing adjacent units, main bus connectors and without drilling or tapping.



- g. Where designated on panel schedule as "space", include all necessary bussing, device supports and connections. Provide blank cover for each space.
 - h. Provide galvanized steel cabinets to house panelboards. Cabinets for panelboards may be factory primed and suitably treated with a corrosion-resisting paint finish meeting UL standard for outdoor applications.
 - i. Back and sides shall be of one-piece formed steel. Cabinets for panelboards may be of formed sheet steel with end and side panels welded, riveted or bolted as required.
 - j. Provide minimum of four interior mounted studs and necessary hardware for in and out adjustment of panel interior.
 - k. Fabricate trim of sheet steel consisting of frame with door attached by concealed hinges. Provide flush or surface trim as shown on the drawings.
 - l. Provide door-in-door or hinge-to-front with flush type latch and manufacturer's standard lock.
 - m. In making switching devices accessible, doors shall not uncover any live parts.
 - n. Provide concealed butt hinges welded to the doors and trims.
 - o. Provide keyed alike system for all panelboards.
 - p. Provide a directory card, metal holder, and transparent cover. Permanently mount holders on inside of doors.
 - q. Circuit breakers in panelboards shall be bolt- on type on phase bus bar or branch circuit bar. Molded case circuit breakers shall have automatic, trip free, non-adjustable, inverse time, and instantaneous magnetic trips.
10. Locate panelboards so that the present and future conduits can be conveniently connected.
11. A typewritten schedule of circuits, approved by the Owner's Representative shall be on the panel directory cards. Type the room numbers and items served on the cards. Three-complete separate copies of all directories, neatly bound, shall be delivered to the Owner's Representative.
12. Mount panelboards so that maximum height of circuit breakers above finished floor shall not exceed 78".
13. Provide all necessary hardware for mounting panelboards.

GROUNDING

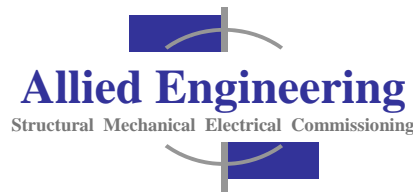
1. Provide a grounding electrode system per NEC requirements for all separately derived sources.
2. Grounding Conductors:
 - a. Grounding conductors shall be soft-drawn bare copper.
 - b. Insulated grounding wires shall be UL and NEC approved types, copper, with THWN or XHHW insulation color identified green, except where otherwise shown on the drawings or specified.
 - c. Wire shall not be less than shown on the drawings and not less than required by the NEC.
3. Ground Clamps:



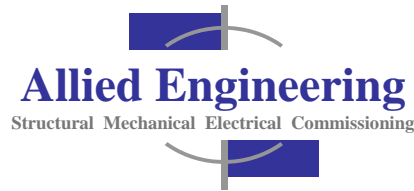
- a. Ground clamps shall be cast bronze or cast copper and shall be UL listed for grounding connections.
 - b. Ground clamps shall be sized for the specific conductor and electrode to be clamped.
4. Grounding Connections: Connections shall be of the compression type solderless connectors.
 5. The entire electrical system shall be permanently and effectively grounded in accordance with Code requirements.
 6. Connections to junction boxes, equipment frames, etc., shall be bolted.
 7. Conduit Systems:
 - a. Ground all metallic conduit systems.
 - b. Conduit systems shall contain a grounding conductor sized per NEC Table 250-122 or as shown on the drawings. Increase conduit size where necessary to accommodate the grounding conductor.
 8. Feeders and Branch Circuits: Install green grounding conductors with all feeders and branch circuits.

WIRING MATERIALS

1. Wiring shall be enclosed in electrical rigid galvanized steel, intermediate metal conduit, or electrical metallic tubing sized in accordance with code requirements for the conductors. Type MC cable shall be permitted to be used where concealed and allowed by code.
 - a. EMT fittings shall be steel; set screw type for dry locations, compression type for damp locations.
 - b. Terminations for all conduits shall have insulated bushings or insulated throat connectors in accordance with code requirements.
 - c. All conduits shall be substantially supported with approved clips or hangers spaced not to exceed ten feet on center. Minimum conduit size shall be 1/2".
2. Surface Metal Raceway: UL 5 listed.
 - a. Boxes and fittings for surface metal raceways shall be as recommended by the manufacturer.
 - b. Support clips for surface metal raceways shall be the concealed type, with attachment screws concealed behind the raceway.
3. Flexible Metal Conduit shall be used for all connections to motors and vibrating equipment and shall comply with Fed. Spec. A-A-55810.
4. Liquid-Tight Flexible Metal Conduit shall consist of flexible steel conduit with a liquid-tight PVC jacket over the conduit.
 - a. Fittings shall incorporate a threaded grounding cone, a steel or plastic compression ring, and a gland for tightening.



- b. Liquid-tight flexible metal conduit shall be used in damp or wet locations when flexible metal conduit would otherwise be used.
 - c. Liquid-tight flexible metal conduit shall not penetrate the roof or exterior walls, and shall not be installed in lengths exceeding 72" except where necessary for flexibility.
5. All Wiring shall be type THW, XHHW, THHN or THWN, UL labeled conductors with 600-volt insulation, except as otherwise noted. Minimum size wire shall be No. 12 AWG.
 - a. Feeder conductors #2 AWG and larger shall be copper or aluminum. Aluminum wiring shall not be used for equipment connections where the equipment manufacturer's instructions call for copper wiring.
 - b. Branch circuit conductors and feeder conductors smaller than #2 AWG shall be copper.
6. Type MC Cable shall have minimum No. 12 AWG type THWN or XHHW insulated copper conductors with an internal bare or insulated copper ground wire.
7. Boxes shall be steel minimum 2-1/2" deep, or 1-1/2" deep plus plaster ring sized to fit flush with wall finish.
8. In general, all wiring in finished areas shall be concealed in walls and exposed at structural ceilings. Where wiring cannot be concealed in walls due to existing construction, exposed wiring shall be installed in surface metal raceway.
9. Feeder circuit wiring shall be in conduit or EMT.
10. Conduits shall be of sizes required by the National Electrical Code. Exposed conduits shall be installed with runs parallel or perpendicular to walls and ceiling, with right-angle turns consisting of bends, fittings, or outlet boxes. No wire shall be installed until work that might cause damage to wires or conduits has been completed. Conduits shall be thoroughly cleaned of water or other foreign matter before wire is installed.
11. Where conduits, wireways and other electrical raceways pass through fire partitions, fire walls, or floor, install a fire-stop that provides an effective barrier against the spread of fire, smoke and gases. Fire-stop material shall be packed tight and completely fill clearances between raceways and openings. Floor, exterior wall, and roof seals shall also be made watertight.
12. Where raceways puncture roof, coordinate with Division 07.
13. Surface metal raceways shall be sized as required by the National Electrical code and as recommended by the manufacturer. Surface metal raceways shall be installed with runs parallel or perpendicular to walls and ceiling. Changes in direction shall only be made at device box locations or with fittings designed for the particular application. Installation shall be as visually unobtrusive as possible:
 - a. Surface metal raceways shall be painted to match wall finishes.
14. All splices shall be mechanically and electrically perfect, using crimp type wire connectors.



15. In general, conductors shall be the same size from the last protective device to the load and shall have an ampacity the same as or greater than the ampacity of the protective device where the wire size is not shown on the drawings. Use the 60°C ampacity rating for wire sizes No. 14 through No. 1. For 120V circuits, home runs longer than 100 feet shall be minimum No. 10 AWG, longer than 200 feet shall be minimum No. 8 AWG.

MECHANICAL EQUIPMENT CONNECTIONS – SCOPE OF WORK

1. General: Provide wiring and connections for mechanical equipment. Coordinate requirements with mechanical design.
2. Provide disconnect switches as required by NEC. Disconnect Switches shall be heavy-duty type, horsepower rated.
3. Weatherproof Receptacles shall consist of a duplex GFI receptacle, as specified, mounted in a weatherproof box with a gasketed, weatherproof, plastic “in-use” cover. The weatherproof integrity shall not be affected when heavy duty specification or hospital grade attachment plug caps are inserted. Cover plates on outlet boxes mounted flush in the wall shall be gasketed to the wall in a watertight manner.
4. Weatherproof receptacles shall be located within 25 feet of HVAC equipment located outdoors.

----- END -----