Riverside MS FEI

100% Bid Documents
East Providence, RI
Ai3 Project # - 1903.03

Addendum #2
October 2, 2023

The attention of Bidders submitting proposals for the Riverside MS FEI 100% Bid Documents is called to the following changes to the Bidding Contract Documents dated September 18, 2023 as prepared by Ai3 Architects, LLC. The items set forth therein below, whether of revision, omission, addition, substitution or clarification are all to be included as changes to Information to Bidders, the Conditions of the Contract, Specifications and Drawings of the Contract.

The number of this Addendum (Number 2) must be entered in the appropriate spaces provided on the Bid Form.

CLARIFICATIONS:

ADD 2-001  Proposals must be submitted via Bidnet on October 11, 2023 by 10am.

ADD 2-002  Question: Please confirm if the Management Plan and Technical Solutions Plan is required as part of the bid package or if this information was carried over from another job.
Answer: The Management Plan and Technical Solutions Plan is required as part of the bid package.

ADD 2-003  Question: What is the glass type for the interior alum framed windows in the drywall partitions in section #1, A10.33?
Answer: Refer to specification 08 80 00 – GLAZING. Glass type 2 should be used for the aluminum framed windows in section 1/A10.33, including window numbers W242-01, W242-02, and W242-03.
SPECIFICATIONS:
ADD 2-004  Document 00 01 10 “TABLE OF CONTENTS”; REMOVE in entirety and REPLACE with new Document 00 01 10, Dated October 2, 2023, Addendum #2.
ADD 2-005  Section 01 50 00 “TEMPORARY FACILITIES AND CONTROLS”; REMOVE in entirety and REPLACE with new Section 01 50 00, Dated October 2, 2023, Addendum #2.
ADD 2-006  Section 07 59 00 “CUTTING AND PATCHING MEMBRANE ROOFING”; ADD new Section 07 59 00, Dated October 2, 2023, Addendum #2.
ADD 2-007  Section 07 72 00 “ROOF ACCESSORIES”; ADD new Section 07 72 00, Dated October 2, 2023, Addendum #2.
ADD 2-008  Section 09 65 19 “RESILIENT TILE FLOORING”; REMOVE in entirety and REPLACE with new Section 09 65 19, Dated October 2, 2023, Addendum #2.
ADD 2-009  Section 12 36 53 “LABORATORY COUNTERTOPS”; ADD new Section 12 36 53, Dated October 2, 2023, Addendum #2.

ATTACHMENTS:

Architectural:
ADD 2-010  Architectural Drawings: REMOVE drawings A7.32 and A9.21 in their entirety and replace with drawings A7.32 and A9.21 bound here within Addendum #2.
ADD 2-011  Architectural Drawings: ADD drawing A1.30 bound here within Addendum #2.

Plumbing:
ADD 2-012  Plumbing Drawings: REMOVE drawings P0.01, PD1.11, PD1.12, and P1.13 in their entirety and replace with drawings P0.01, PD1.11, PD1.12, and P1.13 bound here within Addendum #2.

Mechanical:
ADD 2-013  Mechanical Drawings: REMOVE drawings MD1.12, MD1.21, M1.11, M2.12, M2.21, M2.31, M5.01, M6.01, and M7.01 in their entirety and replace with drawings MD1.12, MD1.21, M1.11, M2.12, M2.21, M2.31, M5.01, M6.01, and M7.01 bound here within Addendum #2.

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- **Document 00 01 02** Project Directory
- **Document 00 01 10** Table of Contents
- **Document 00 11 19** Request for Proposal
- **Document 00 43 13** Bid Bond (*AIA Document A310 – 2010*)
- **Document 00 45 13** Disadvantaged Business Enterprise Affidavit
- **Document 00 45 15** Bidder’s Qualifications (*AIA Form A305*)
- **Document 00 52 00** Agreement Form (*AIA Form A101*), Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum.
  
  *(Document not bound herewith)*
- **Document 00 61 13** Performance and Payment Bond (*AIA Document A312 – 2010*)
- **Document 00 62 12** Product Submittal Form
- **Document 00 63 13** Request for Interpretation (RFI) Form
- **Document 00 63 25** Product Substitution Form
- **Document 00 72 00** General Conditions of the Contract for Construction (*AIA Document A201*) with Owner’s amendments.
  
  *(Document not bound herewith)*
- **Document 00 73 46** Prevailing Wage Determination Schedule

#### DIVISION 01 — GENERAL REQUIREMENTS

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- **Section 01 14 00** Work Restrictions
- **Section 01 25 13** Product Substitution Procedures
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PART 1 - GENERAL

1.1 SUMMARY

A. General requirements for temporary facilities and controls.
B. Temporary utilities.
C. Construction facilities.
D. Temporary construction.
E. Construction aids.
F. Vehicular access and parking.
G. Temporary barriers and enclosures.
H. Site and environment controls.
   1. Noise control procedures.
I. Fire prevention measures.
J. Security measures.
K. Project identification and temporary signage.
L. Removal of temporary utilities, controls, and facilities.

1.2 GENERAL REQUIREMENTS

A. The General Contractor shall provide and maintain all temporary facilities, controls, and construction aids as specified herein, until they are replaced by permanent work, or until Project Substantial Completion, as appropriate.
   1. Additional temporary facilities and controls which may be specified under individual Filed Sub-Bid sections are the responsibility of the respective Trade contractors.
   2. Temporary facilities removed from the Project shall remain the property of the General Contractor, except as otherwise specified.

B. Except where specifically noted otherwise, cost or use charges for temporary facilities, utility services, controls, and construction aids and similar items specified in this Section or as required to perform the Work, are not chargeable to the Owner, Owner’s Project Manager, or Architect, and will not be accepted as a basis of claims for a Change Order.
C. Establish and initiate use of each temporary facility at time first reasonably required for proper performance of the Work. Terminate use and remove facilities at earliest reasonable time when they are no longer needed, as approved by the Owner’s Project Manager and Architect, or when permanent facilities have, with authorized use, replaced the temporary facilities.

1. Locate temporary facilities where they will serve Project adequately and result in minimum interference with performance of the Work.

1.3 SUBMITTALS

A. Submit the following under provisions of Section 01 33 00 - SUBMITTAL PROCEDURES:

1. Reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

2. Schedule showing implementation and termination of each temporary utility within 15 days of commencement of the Work.

3. Shop drawings:
   a. Temporary signage.
   b. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.4 REFERENCES

A. Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01 42 00 - REFERENCES. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. ANSI A 10 - Safety Requirements for Construction and Demolition.

2. NFPA 70 - National Electrical Code.


1.5 TEMPORARY WEATHER PROTECTION

A. Weather Protection Standards:

1. Definition of Weather Protection: “Weather Protection” means temporary protection of work which may be adversely affected by moisture, cold, heat, and wind by the use of temporary covers, enclosures, and heat. Maintain at least the minimum temperatures specific. Comply with specific requirements which are specified within individual Specification Sections.
   a. Temperature at the working surface shall be at least forty degrees Fahrenheit (40 degrees F). This provision does not supersede any specific greater requirements for methods of construction for curing of materials.

2. General Contractor’s Responsibilities:
a. The General Contractor is responsible to ensure that protection is provided for the building INTERIOR and all materials and equipment from weather at all times (year round).

b. At completion of work, the General Contractor shall remove temporary weather protection; clean and restore all surfaces to original (‘as installed/new’) condition.

3. Proposed Plan: The General Contractor shall within 30 calendar days after Award of Contract, submit three copies of a typewritten proposed plan for “Weather Protection” and obtain the Architect’s and Owner’s written approval.

4. Reporting Requirements:
   a. Within thirty calendar days after Contract award, the General Contractor shall submit in writing to the Owner for approval, three copies of its proposed plan for weather protection.
   b. The General Contractor shall furnish and install accurate Fahrenheit digital recording thermometers and hygrometers, at places designated by the Owner to determine whether the required temperature and humidity is being maintained.

5. Weather protection materials, equipment, and the installation thereof, shall comply with all the safety rules and regulations including provisions for adequate ventilation and fire protection devices.

6. Use of Permanent Heating System(s): The General Contractor may choose, if the Owner approves, to use the permanent heating system for temporary heat after the building is enclosed and the system has been tested and is ready to operate.

   a. The General Contractor shall thoroughly clean and restore to original (‘as installed/new’) condition, acceptable to the Owner, all portions of the permanent heating system that are used for heating during construction.
   b. Use of the permanent heating system for weather protection shall not affect any heating system guarantee that may be due to the Owner; such guarantee shall begin to run only when the Owner accepts the building.

B. Additional weather protection requirements: The General Contractor is responsible to ensure that the protection is provided for the building interior and all materials and equipment from weather at all times (year round).

   1. Temporary coverings shall be attended as necessary to insure effectiveness and to prevent displacement.
   2. General Contractor shall repair or replace all elements of the building damaged by failure to properly protect them from the weather to the satisfaction of the Architect at no additional cost to the Owner.

1.6 TEMPORARY UTILITIES, GENERAL

A. General temporary utility installation:
   1. Engage the local utility companies to install temporary service or connect to existing service, if permitted and approved by Owner. All costs of connecting
to public utility lines, and furnishing of utilities during construction shall be without additional cost to the Owner.

2. Provide adequate capacity at each stage of construction.

3. Prior to temporary utility availability, provide ‘truck-in’ services.

4. Obtain and pay for required permits and licenses required from authorities prior to commencing installation of temporary services. Arrange for authorities having jurisdiction to inspect and test each temporary utility before use.

1.7 TEMPORARY UTILITIES, ELECTRICITY

A. Temporary electricity: The Construction Manager will pay for all electrical energy required for temporary light and power. The Electrical subcontractor is required to provide temporary feeders of sufficient capacity from the utilities power lines, at the point coordinated with the local utility, to provide for the electric light and power requirements for the Project while under construction. Additional requirements are specified under Division 26 - ELECTRICAL, and as follows:

B. Temporary electricity: The electric subcontractor shall be responsible for installation and maintenance of all temporary power as defined above and further specified as follows.

1. The Construction Manager will pay for all electrical energy used on the Project from the beginning of construction operations to the Date of Substantial Completion of the Work. The Owner will pay for all electrical energy drawn from normal metered building supply used on the Project after the Date of Substantial Completion of the Work. The Construction Manager shall install a separate meter for recording the Construction Electricity.

2. Temporary electricity used for construction will be required between the hours of 7:00 a.m. and 5:30 p.m. and during additional work hours as determined by the Construction Manager. No additional charge shall be made by the Electrical Subcontractor for switching the system on and off to meet this time requirement.

   a. Protective night lighting is required at all times (24 hours a day, seven days a week) and shall be on separate switching from temporary electricity service used for construction.

3. Responsibility of compliance with local, state and national codes for installation of the construction electric service shall be borne by the electrical subcontractor.

4. Replacement lamps shall be provided by the electrical subcontractor during construction. All lamps in permanent fixtures which have been used during the Interim Electric period shall be replaced with new lamps by the electrical subcontractor at his expense just prior to the Date of Substantial Completion.

5. The following construction electricity shall be included by the electrical subcontractor in his subcontract price. This schedule will not necessarily provide for all requirements of the Construction Managers or all subcontractors. The Construction Manager or any subcontractor having requirements for power, lighting, or service other than those provided herein,
shall make the necessary arrangements to obtain such power, lighting, or service at his own expense.

a. The electrical subcontractor shall obtain all necessary permits and shall connect to public utility line as a source for temporary electrical power, shall furnish and install the temporary electrical power and lighting systems, and shall pay for all labor, materials, and equipment required therefor. All such temporary electrical work shall meet the requirements of RISBC-5 Rhode Island Electrical Code and OSHA.

b. The electrical subcontractor shall furnish and install a feeder, or feeders, of sufficient capacity for the requirements of each floor.

1) Provide sufficient additional wiring outlets and lamps shall be installed to insure proper lighting in stairwells, corridors and passage areas.

2) Temporary power, in addition to the lighting requirements (specified herein), shall be provided throughout the building for electrically operated tools, based on a minimum of 0.50 watts per sq. ft.

c. All necessary cables, load centers, switches and accessories required for the temporary light and power installation shall be provided and installed by the electrical subcontractor.

d. The electrical subcontractor shall furnish and install all lamps, both initial and replacement until the date of Substantial Completion.

e. Temporary light and power requirements herein required is for the use of all trades working at the site.

f. All Contractors and subcontractors shall, individually, furnish any extension cords and lamps therefor, sockets, motors and accessories required for their work.

g. The Construction Manager, and other subcontractors, shall reimburse the electrical subcontractor for the following:

1) Any temporary wiring of a special nature, other than that specified above, required for their work.

2) Any temporary wiring of construction offices and buildings used by them.

3) Any temporary wiring for protective night lighting.

6. All temporary wiring, service equipment, and accessories thereto shall be removed by the electrical subcontractor contractor when directed by the Construction Manager.

7. The provisions of the RISBC-5 Rhode Island Electric Code shall be strictly complied with respect to (NEC-2020) Article 305 of said code, and the following precautions shall be taken:

a. Open conductors shall be fastened at ceiling height at minimum of 10 R. intervals. Conductors may not be laid on the floor, and receptacles or fixed equipment circuits shall contain a separate equipment grounding conductor run as open wiring. Receptacles shall be of the grounding type. Branch circuits, unless installed in a complete metallic conductor and receptacles electrically connected to the grounding conductor. No
bare conductors nor earth returns shall be used for wiring of any
temporary circuits. Grounding circuits shall never be interrupted.

b. All 15 ampere and 20 ampere receptacle outlets on single phase circuits
which are used for construction purposes shall have approved ground-
fault circuit protection for personnel, as required by to (NEC-2020) Article
210 of RISBC-5 Rhode Island Electric Code.

C. Interim Electricity: The Electrical subcontractor shall be responsible for interim
electricity as defined above and further specified as follows.
1. The permanent electric power and lighting system in a given area shall be
completely installed as designed before the system may be used in such area.
2. At the termination of the use of the permanent electrical light and power
system for interim electric, all panelboards shall be inspected and cleaned,
and all permanent lighting fixtures which have been used shall be thoroughy
cleaned and provided with new lamps, bulbs, fluorescent tubes to provide like
new performance.

1.8 TEMPORARY UTILITIES, LIGHTING

A. Temporary lighting: The Electrical Trade contractor shall provide lighting with local
switching to fulfill security requirements and provide illumination for construction
operations and traffic conditions. Maintain lighting and provide routine repairs.
Permanent building lighting may be utilized during construction.
1. Temporary lighting shall be based on the following requirements:
a. Rooms or spaces under 250 sq. ft.: Two (2) 100 watt lamps.
b. Rooms or spaces over 250 sq. ft. and under 500 sq. ft.: Four (4) 100 watt
   lamps.
c. Rooms or spaces 500 square feet and over: Two (2) 200 watt lamps for
   spaces 500 square feet to 1000 square feet and two (2) 200 watt lamps
   for every 1000 square feet or fraction thereof after.
2. Permanent building lighting may be utilized. Immediately prior to the
Architect's inspection for substantial completion. The Electrical Trade
contractor is required to replace all used lamps which are broken or have
burned out.

B. Protective night lighting is required at all times (24 hours a day, seven days a
week). General Contractor is required to arrange for adequate outdoor lighting to
illuminate staging’s, stockpiles, trenches, dangerous projections, excavations and
similar conditions and as additionally required to protect the safety of workmen,
other personnel, and the public and as an aid in the protection against theft and
vandalism.
1. Provide shielding of night lighting to restrict extent of lighting to project site.
   Shield lighting from illuminating abutter’s properties.
1.9 TEMPORARY UTILITIES, TELEPHONE/INTERNET

A. Temporary telephone service: Provide telephone service at time of project mobilization, and pay all costs for installation, maintenance, and removal. Maintain specified service for duration of work, until Owner’s occupancy precludes need for General Contractor to continue service. The General Contractor shall pay service charges for local calls; toll charges shall be paid by party who places call. Service and equipment required includes the following: [ADD #2]

1. For Owner’s Project Manager’s Field Office
   a. Provide three direct lines and touch-tone phones, dedicated for use by the Architect, Owner’s Representative, the Architect’s engineering consultants and other authorized agents of the Owner.
      1) Phones to be three lines each, with intercom, hands free speaker phone and 25 foot coiled cords connecting instrument’s base and receiver. Instruments shall be connected to wall mounted jacks with cords not less than 10 feet long. A minimum of one phone shall have speaker phone function.
   b. Provide telephone instrument and telephone service with unlimited long distance calling.
   c. Costs of temporary phone service setup prior to installation of trailer offices shall be provided by the Owner’s Representative.
   d. Cellular (mobile) phone service for Owner’s Field representative continuously maintained until substantial completion.

2.1 For General Contractor’s Field Office
   a. Provide two direct lines dedicated for use by the General Contractor, Trade contractors, and personnel engaged in construction.
   b. One answering machine having remote message retrieval separate incoming and outgoing tape cassettes, time and date message stamp and call monitoring.
   c. Cellular (mobile) phone service for General Contractor’s Superintendent, continuously maintained until Project Substantial Completion.

B. Temporary internet service: Provide internet service at time of project mobilization, and pay all costs for installation, maintenance, and removal. The General Contractor shall pay for, and maintain service until Owner’s occupancy precludes need for General Contractor to maintain service.

1. For Owner’s Project Manager’s Field Office. General Contractor shall provide and maintain internet access consisting of digital signal 1 (T1), digital subscriber line (DSL), cable or, Fiber-Optic Service (FiOS) services, (dial-up modem service is not acceptable). Internet service shall include e-mail account allowing a minimum of 5mb attachments to ensure exchange of all construction related e-mail to the Architects/Owner’s Project Manager’s Field Office. Provide and install one 802.11 b/g/n wireless access point, configured with WPA2 security, to include a 4 port switch and the WPS (Wi-Fi protected setup) disabled.
2. For General Contractor’s Field Office, General Contractor shall provide and maintain internet and email service. Internet service shall include e-mail account allowing a minimum of 5mb attachments to ensure exchange of all construction related e-mail to General Contractor’s field office.

1.10 TEMPORARY UTILITIES, WATER

A. Temporary water: The General Contractor shall provide and maintain water service and distribution piping of sizes and pressures adequate for construction, including water meter and hose bib(s) at location(s) to be determined by General Contractor so that water is available throughout the construction by the use of hoses.

1. Exercise measures to conserve water.

B. Protect piping and fittings against freezing.

1.11 TEMPORARY UTILITIES, FUEL OIL

A. Provide all fuel oil for temporary heating systems at no additional cost to the Owner.

1.12 TEMPORARY HEATING AND COOLING

A. Temporary heat: Provide heat for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Provide vented self-contained liquid propane gas or fuel oil heaters with individual space thermostatic control, UL approved and acceptable to local fire department. Use of gasoline-burning space heaters, open flame, or salamander type units is prohibited.

1. Vent heaters directly to outside air, in areas where concrete is less than 15 days old.

2. In enclosed building interior areas, maintain a minimum ambient temperature of 50 degrees Fahrenheit; provide higher temperatures where required by individual specification sections. General Contractor is required to provide enclosures necessary to maintain specified temporary heat.

1.13 TEMPORARY VENTILATION AND HUMIDITY CONTROL

A. General:

1. Humidity Control: Monitor and regulate relative humidity as required for the installation of all interior products. Relative humidity shall be maintained within the limits set by manufacturers of all interior materials and equipment. Refer to individual specification sections in Divisions 6, 8, 9, 10, 11 and 12 for additional environmental requirements.

a. General Contractor shall enclose interior work areas, protect from weather, and maintain specified temperature and humidity prior to commencement of construction activities relating to interior finishes.

2. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases. Extend and
supplement equipment with temporary fan units as required to maintain clean air for construction operations.

a. During construction, General Contractor shall meet or exceed the minimum requirements of the SMACNA IAQ Guideline for Occupied Buildings under Construction - 1995.

B. Monitor Humidity: Provide Hygrometers to measure temperature and relative humidity in each construction area. Provide quantity of one hygrometer per 2000 square feet of gross area.
   1. Provide dehumidifier(s), as required to maintain humidity of enclosed areas below 70 percent. Humidity level shall be maintained in all areas where interior finish work is being performed, and all areas where interior finishes has been completed.
   2. Provide fans as specified herein, and as required to eliminate significant variation in humidity levels within enclosed spaces.

C. Temporary Construction Ventilation: General Contractor shall maintain sufficient temporary ventilation of areas where materials are being used that emit VOC’s and maintain ventilation continuously during installation and until emissions dissipate after installation. If continuous ventilation is not possible via the building’s HVAC system(s) then General Contractor shall supply ventilation via open windows and temporary fans, sufficient to provide no less than three air changes per hour.
   1. Vent all areas directly to outside. Areas shall not be vented to other enclosed areas.
   2. During dust producing activities (e.g. drywall installation and finishing) General Contractor shall turn off ventilation system and protect openings in supply and return HVAC system from dust infiltration. Provide temporary ventilation as required.
   3. Dissipation of VOC’s: The period after installation shall be sufficient to dissipate odors and elevated concentrations of VOCs. A minimum time period of 72 hours is required except where longer periods of time are specified under individual specification sections.

D. Preconditioning: Prior to installation, General Contractor shall allow products which have odors and VOC emissions to off-gas in dry, well-ventilated space outside of building for 14 calendar days, in order to allow for reasonable dissipation of odors and emissions.

1.14 FIELD OFFICES AND SHEDS [ADD #2]

A. General:
   1. All temporary storage, field offices along with specified equipment and furnishings shall be provided within the Contract Sum for the full duration of project (until Substantial Completion), and at no additional cost to the Owner.
   2. Availability: Provide two trailers minimum. One for the General Contractor’s Field Office and one for the Owner’s Field Office. Provide offices ready for occupancy within 15 days after date fixed in Notice to Proceed.
3. Field offices: Provide furnished, insulated, weathertight, office(s) which shall be portable or mobile building(s), or buildings constructed with floors raised above ground, securely fixed to foundations, with steps and landings at entrance doors.
   a. Securely support trailer on temporary masonry or preservative treated wood piers and not on trailer wheels. Anchor trailer to prevent overturning due to wind or other causes.
   b. Temporary offices

4. Location: The location of the field offices and storage areas for equipment and materials shall be upon cleared portions of the job site or areas to be cleared, and shall require review and written acceptance of the Architect. Submit plans showing field offices and storage facilities for equipment and materials for acceptance by the Architect.
   a. Offices and sheds located within the construction area, or within 30 feet of building lines shall be of noncombustible construction. Comply with requirements of NFPA 241.
   b. Construction of offices shall have sound insulation adequate to exclude sounds of routine construction activities and reduce server noise to less than 70 dB.

5. Field Offices, General Requirements:
   a. Housekeeping and Supplies: General Contractor shall provide reliable weekly periodic cleaning and maintenance of field offices and storage areas to the satisfaction of the Owner and the Owner’s Project Manager or more frequently as required or requested.
      1) Provide reliable weekly cleaning service for Owner’s Field Office including toilet room for the duration of the project including cleaning, mopping, and waxing floors. Provide toilet tissue, paper towels, and liquid hand soap as requested by Owner’s Project Manager or Owner’s Field Representative (Clerk of the Works) for the duration of Project
   b. Provide air conditioning and heating to maintain a temperature range of 65 to 78 degrees F.
   c. Provide sufficient lighting for 50 foot candles at desk top level over 100 percent of floor area.
   d. Excluding computer, computer software and related equipment; all other non-consumed furnishings and equipment, will be returned to the General Contractor upon project completion.
   e. The General Contractor shall provide all necessary office supplies to run both field offices on a day to day basis including but not limited to paper, pen, pencils, filing equipment, manila folders, envelopes, toilet paper and paper towels.
   f. Provide security system to protect field offices with connection to alarm system central station with telephone notification service. Alarm system shall provide for immediate 911 call notification for Police/Fire.
B. General Contractor’s field office(s): Provide habitable office(s) or space, of size to accommodate personnel, include as a minimum the following:

1. Size: General Contractor field office shall be not less than 12 by 50 foot long office trailer. Sectioning of trailer shall be as required by General Contractor. Each section of trailer shall have direct access to an exterior locking door and a communicating door.

2. Furnishings:
   a. Conference table of sufficient size with seating to accommodate personnel and anticipated visitors for specified conferences and weekly progress meetings. Conference table shall comfortably seat not less than 20 people.
   b. Racks and files for Contract Documents, submittals and Project Record Documents.

3. Outdoor weather thermometer with high/low readings.

4. Hard hats for site visitors.

5. Duplex convenience outlets, at least one per wall.

6. Telephone service as specified herein above.

7. Other equipment and furniture as the General Contractor deems necessary.

C. Owner’s Field Office: Provide separate trailer for sole use of Owner, Owner’s Project Manager, Owner’s Field Representative (Clerk of Works), Architect, engineering consultants, with separate entrance door with new lock and three keys. Provide office furnished, insulated, weathertight, and habitable with tightly screened doors and windows, secure locking devices and separate toilet facilities complying with the following criteria, and with specified equipment and furniture:

1. Owner’s Field Office Criteria:
   a. Field office shall be approved by Owner’s Project Manager, and located on site where acceptable by Owner’s Project Manager and Architect.
   b. Size: Owner’s Project Manager’s field office shall be not less than 12-foot by 60-foot long temporary field office facility, equal to WilScot, and being of less than 3 years old.
      1) Division of Field Office:
         a) Architect’s Office, 12 by 12 feet minimum, with separate keyed interior entry.
         b) Owner’s Project Manager’s office, shared with Owner’s Field Representative (Clerk of Works), 12 by 16 feet minimum, with separate keyed interior entry.
         c) Conference room of sufficient size to accommodate meetings of not less than 12 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room and conference table, padded chairs.
         d) Toilet facilities as specified herein below.
c. Sanitary Facilities: Provide a toilet room within the owner’s site office for sole use of Owner, Owner’s Project Representative, Architect, Clerk of the Works, and their visitors. Equip toilet room with a water closet and lavatory, plumbed with hot and cold water and waste and vent. Connect to Town sewer if possible or provide holding tank with regular pumping service.
   1) Provide a 5 gallon electric water heater. Maintain plumbing in good working order, and dispose of waste effluent in a legal manner. Install mirror, toilet paper holder, and paper towel holder. Toilet room to have one ground fault duplex electrical outlet, switched ceiling recessed combination exhaust fan/light, and locking door.
   2) Temporary ‘Port-A-Potty’ style toilet facilities which are located on site are not acceptable in lieu of providing functional toilet facilities within the Owner’s Field Office.
   3) Provide toilet tissue, paper towels, and liquid hand soap as requested by Owner’s Project Manager or Clerk of the Works for the duration of Project.

2. Furnishings: All furnishings shall be new and clean.
   a. Three (3) metal desks with plastic laminate tops, 30 by 60 inches, pedestal style with two drawer letter hanging file on one side and three drawer pedestal on the other side, pencil drawer center, pencil drawer and one pedestal lockable, with two keys. Each desk to have secretarial return (attachment that forms an “L” shaped unit).
   b. Three (3) cushioned office swivel chairs, fully adjustable, with arms and five caster base.
   c. Six (6) four-drawer letter size metal file cabinets, with metal hanging frame in each drawer, lockable with three keys each. Provide one cabinet fire-rated.
   d. Two portable 30 inch hanging plan rack units, on casters, each with twelve sticks for 30 inch sheet size, each stick with three tightening knobs.
   e. Three waste baskets and one (1) thirty gallon waste basket/trash can. Provide waste bags/liners for duration of project.
   f. One coat rack, consisting of wall mounted panel of six coat hooks spaced 6 inches apart, with hat shelf.
   g. Six individual coat hooks located as directed.
   h. Plan table, minimum size 42 by 72 inches with sloped surface, raised lip at front (low) edge, height as directed.
      1) Two drafting stools/chairs with casters and adjustable height and back.
   i. Four folding tables, 72 by 30 inches each.
   j. Sixteen metal folding chairs, with cushioned seats.
   k. Sample Shelving: Minimum 12 feet of 10 inch deep shelving.
l. Four aluminum framed tackboards 12 square feet each, minimum.

m. Three, 4 by 3-foot wall mounted dry erase with boards; include 4 marker and eraser kits.

n. Three spring mounted desk lamps.

3. Equipment: All equipment shall be new, clean and serviceable. Upon completion of the Work all printers, copier, computers, ipads, digital camera, monitors and video conferencing equipment shall be delivered to the Owner.

a. Fully stocked first aid kit, with supplies regular replenished and replaced before expiration dates.

b. Two outdoor thermometers with high/low readings.

c. Three recycling bins.

d. One under counter refrigerator with freezer compartment.

e. One microwave oven.

f. One automatic coffee maker, Keurig Office K Cup or approved equal.

   Provide coffee and supplies for the duration of the project.

g. One water dispenser with hot and cold spigots. Four five gallon containers of spring water delivered every two weeks, continuous stock of flat bottom cups.

h. Three wall calendars.

i. One type ABC fire extinguisher, 20 lb., charged and inspected.

j. Copier/Printer: Full function networked large format dry (toner) color copier/printer capable of 35 copies per minute, with 50 sheet automatic document feeder, double sided copying, automatic sorter, capable of sorting 20 copies, reduction and enlargement feature, built-in stapler, trays for letter portrait with 500 sheet draw, landscape with 250 sheets, legal and 11 by 17 inch paper, include cabinet stand with casters, provide full documentation, manuals, and service agreement covering all required replacement parts for the duration of the project, furnish paper staples, and toner as requested by Owner’s Project Manager/Clerk of the Works for the duration of the project.

   1) Copier/printer shall be capable of 8 1/2 x 11, 8 1/2 x 14 & 11x17 paper printing. Provide a 3 year supply of each type of paper size.

   2) Copier/printer shall be network capable or have Wi-Fi connectivity so that printing from local computers can be performed.

k. Desktop printer: HP Office Jet Pro 7740, color Inkjet all-in-one printer, with Wi-Fi capacity and 11x17 sized paper capacity, or OPM approved equal.

   1) Scanner/Printer shall be network capable or have Wi-Fi connectivity so that printing from local computers can be performed.
Digital Camera: Provide one digital camera, Canon PowerShot G7X, Mark II, with 64GB Picture Card Storage media, battery charger, two sets of rechargeable spare batteries, carrying case, or OPM approved equal.

Computers: Two, Dell Precision 7760 Workstation with Windows 11 Pro with 64 GB Memory and 512 GB SSD drive with 17.3 inch display.
1) Microsoft Office Professional Suite full license (latest version available).
2) Microsoft Project scheduling software (latest version available).
3) Bluebeam Revu CAD (latest version available).
4) McAfee® Total Protection for Small Business, 36 Month, latest version available.
5) Autodesk Architecture standalone 1 license on one of two computers only.
6) Three Year CompleteCare Accidental Damage Protection.

Videoconferencing equipment, including:
1) Poly G7500 kit with 4K Base Unit, Eagle Eye Cube SB Camera and TC8 Video Conferencing.
2) 42 inch flat screen LCD monitor.

IPad Pro 11 inch (2022 edition), WiFi and 4G enabled with service for the duration of the Project plus three months, complete with 512 GB of memory, built in camera, and three year Accidental Damage Protection with next day technical support required to all hardware and software operational for the duration of the Project.
1) IPad software shall include:
   a) PDF review and editing and CAD file review, Package to enable office document review/editing, Security/Password software, and Notes pad.
   b) Software: Microsoft Office with Outlook 365.
   c) PlanGrid with “Dozer” level subscription.
   d) 65 inch to 70 inch LCD display, commercial grade, with wall mount and installation for OPM field office.
   e) HDMI cable, 20 feet to 25 feet long
   f) Three IPAD adapters, Apple Lightning to Digital AV (HDMI) Adapters.
   g) Wireless access point/WiFi modem.
2) Accessories shall include
   a) Military Grade protective case and clear protective screen cover,
   b) Car/wall power adapters, External wireless keyboard, and stylus.

Safety equipment: OHSA approved.
1) 12 Construction hard hats.
2) 12 construction safety goggles.
c. 12 orange safety vests.

d. Supply of US-KN95 safety masks for duration of project, FDA Cleared.

5. Data Cabling: Provide data cabling as follows:
   a. Provide adequate data cabling within the Owner’s site office so that there is a minimum of three data connection (Cat 5e or Cat 6) in each office at each planned workstation/desk.
      1) The use of a wireless network within the trailer is NOT an acceptable alternative (wireless capabilities are acceptable, but are NOT to be used in lieu of data cabling).
      2) The exact location and quantity of data drops shall be coordinated and approved by the Architect prior to implementation.
   b. Provide cabling from the ISP entry point of the trailer to each wall jack.
   c. An additional two data drops and power outlets shall be available in the center of the trailer for use by visitors. Typically this connection point will be situated near the conference room table. Another data drop shall be provided at a central location in the trailer for use by a networked printer.

6. Services:
   a. Telephone and internet service as specified herein above to include wireless access as specified in Article 1.10 herein.
   b. Two direct line telephone with answering machine with digital answering as specified in Article 1.10 herein. Answering machine to have the following features:
      1) Variable announcement time.
      2) Speaker used for monitoring calls and listening to messages.
      3) Message memo.
      4) Digital counter.

7. Documents:
   c. NFPA 13, 13A, 14, 14A, 20, 70 and 10-1 Standards (electronically available).
   e. Complete set of Contract Documents, including Drawings and Specifications. Provide one full size set and one half-size set of Drawings and two sets of specifications in D-ring binders.

8. Provide broadband high speed internet access such as DSL, Cable or equivalent with unlimited internet access and Router. Each office area shall be wired to accept computer set up with internet access. Wireless access shall be provided and configured as specified in Article 1.10 herein above.

9. General Contractor install and make all connections so that printer, internet and e-mail connections are in working order.
10. One industrial quality first aid kit intended for construction use and up to ten (10) persons.

11. Provide security grates over all windows and through bolted security bars at all doors.

12. Other furnishings and equipment as required by Owner.

D. B. Storage and fabrication sheds: Provide sheds, equipped to accommodate materials and equipment involved.

1. Subcontractors are responsible for their own storage facilities, coordinate locations.

E. C. Maintain approach walks to field office and storage/fabrication sheds free of mud, water, and snow.

1.15 SANITARY FACILITIES

A. Sanitary facilities: Provide self-contained single occupant chemical toilet units, wash facilities and drinking water fixtures.

1. Sanitary facilities shall be located within the fenced construction zone.

B. Provide toilet tissue, paper towels, paper cups, cleaning compounds and similar materials.

C. Maintain facilities, throughout term of construction, and keep clean, provide covered waste containers for used material.

1.16 CANTEEN SERVICES

A. Canteen vehicles must access the worksite at predetermined times coordinated with the Owner, and are limited to service within the construction site only.

1.17 FIRST AID AND FIRE EXTINGUISHERS

A. First aid supplies: Comply with governing regulations.

B. Fire extinguishers: Provide and maintain on site, adequate fire extinguishers UL rated for A-B-C type fires. Provide red-painted plywood standards for each extinguisher. Additionally provide a dry chemical fire extinguisher at each location where welding, torch cutting and other similar hazardous work is in progress.

1.18 CONSTRUCTION AIDS - USE OF PERMANENT ELEVATORS

A. Temporary use of permanent elevator(s): For temporary use of elevator equipment prior to Project Substantial Completion, make necessary arrangements with elevator installer, subject to approval of Owner’s Project Manager and governing code compliance. General Contractor is required to reimburse elevator installer for labor and materials that are not part of permanent installation and that are required to provide temporary elevator service, including, but not limited to:

1. Temporary car enclosures.
2. Guards or other protection for elevator machine room and hoistway openings.
3. Main line switch with wiring.
4. Necessary power, signaling devices, and lights in car.
5. Testing and obtaining special permits or certificates.
6. Sign elevator installer’s temporary acceptance form before placing elevator into temporary service.
7. Pay costs of power and operation, including maintenance of equipment.

1.19 CONSTRUCTION AIDS - TEMPORARY HOISTS AND CRANES

A. Hoisting equipment and machinery: Furnish all hoisting equipment, crane services and lift machinery required to perform the Work of this Contract, except that required by Trade contractors. Install, operate and maintain in safe condition.
   1. Do not charge applicators and installers for these services during normal working hours.
   2. Trade contractors are responsible for their own hoisting equipment, crane services and lift machinery required to perform the Work of their respective trade.

1.20 CONSTRUCTION AIDS - SCAFFOLDING, PLATFORMS, STAGING, CHUTES

A. Provide ladders, ramps, runways, platforms, railings, chutes, and other mounted or installed construction aids as specified herein to facilitate the Work. Furnish and erect construction aids and maintain in safe condition for the use of all subcontractors, installers and applicators.

B. Furnish and erect scaffolds, staging, and maintain in safe condition, dismantle when no longer required. The General Contractor and Trade contractors shall provide scaffolds, staging, and other similar raised platforms, required to access the Work, per the following
   1. Scaffolds and staging shall be erected and maintained in safe condition, dismantle when no longer required.
      a. General Contractor is responsible to provide, maintain and remove when no longer required, all tarpaulins and enclosures necessary to cover scaffolding (including that furnished by Trade contractor) to maintain specified temporary heat as specified herein under Article entitled “TEMPORARY WEATHER PROTECTION” from the dates of November 1 to March 31.
   2. Scaffolding required for used by Trade contractors shall be furnished, erected, maintained, and dismantled, by the Filed Trade requiring such scaffolding.
      a. Each Trade contractor is responsible to provide, maintain and remove at dismantling, all tarpaulins and similar protective measures necessary to cover scaffolding for inclement weather conditions and as additionally required for dust control.
3. Scaffolding of any height, required for use by installers and applicators of non-filed trades, shall be furnished, erected, and maintained by the General Contractor.

C. Ladders, temporary stairs, platforms and railings, shall comply with OSHA guidelines.
   1. Provide and maintain temporary stairs until permanent stairs are in place and functional. When permanent stairs are erected, provide temporary railings and guards. Protect permanent stairs with temporary covers and protective treads.
   2. Portable ladders and mobile platforms of all required heights, shall be provided by individual users.

1.21 VEHICULAR ACCESS AND PARKING

A. Vehicular access: Construct temporary all-weather access roads from public thoroughfares to serve construction area, of a width and load bearing capacity to provide unimpeded traffic for construction purposes.
   1. Construct temporary bridges and culverts to span low areas and allow unimpeded drainage.
   2. Extend and relocate as Work progress requires, provide detours as necessary for unimpeded traffic flow.
   3. Locate access roads where acceptable to Architect.

B. Provide and maintain access to fire hydrants free of obstructions. Provide unimpeded access for emergency vehicles. Maintain 20 foot width driveways with turning space between and around combustible materials.

C. Snow and ice removal: Maintain all vehicular and pedestrian access roads and walkways free from ice and snow during the winter season for the duration of the Project.

D. Vehicular Parking:
   1. Construct temporary parking areas within the construction fenced area to accommodate use of construction personnel. Locate parking areas where acceptable to Architect/Engineer.
      a. NO on-street parking is permitted.
      b. NO parking in Owner-occupied areas and parking lots is permitted.
   2. Construct temporary parking areas within the construction fenced area and adjacent to the Owner’s Field Office. Provide a minimum of eight dedicated parking spaces for use by Owner’s Project Manager, Architect, Owner’s Field Representative and consultant engineers.
   3. Monitor parking of construction personnel private vehicles. Maintain free vehicular access to and through on-site parking areas. Prohibit parking on or adjacent to access roads, and in non-designated areas.

E. Prior to Substantial Completion, the installed base for permanent roads and parking areas may be used for construction traffic.
1. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.
2. Permanent parking structures may be used by construction personnel on execution of agreement with Owner.

1.22 VEHICULAR TRAFFIC CONTROL

A. The General Contractor shall not close or obstruct any portion of any street public or private, without obtaining permits therefore from the proper authorities.

1. Provide and pay for police traffic details at any time that construction takes place in a public street (right of way). The General Contractor is responsible for coordinating, requesting, and paying the prevailing rate of wage for police traffic details directly with the City of East Providence Police Department.

B. Construction parking control: Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, User Agency's operations, or construction operations.

C. Vehicle and Equipment Security: Lock all unattended vehicles including construction machinery and equipment. Do not leave vehicles or equipment unattended accessible to public with the motor running, or with keys easily accessible.

D. Haul routes: Consult with governing authorities and establish public thoroughfares which will be used as haul routes and site access. Confine construction traffic to designated haul routes.

1. Confine construction traffic to designated haul routes.
   a. Arrival/Departure: Refer to Section 01 14 00 - WORK RESTRICTIONS.
2. Provide traffic control at critical areas of haul routes to expedite traffic flow and to minimize interference with normal public traffic.
3. Travel through neighborhoods is prohibited.

E. Traffic signals and signs: Provide, operate and maintain temporary equipment, services, and personnel, with traffic control and protective devices to direct and maintain an orderly flow of traffic in all areas under General Contractors control, or affected by General Contractors operations, including but not limited to haul routes, at site entrances, at on-site access roads, and parking areas during construction.

1. Provide traffic control and directional signs as needed to direct construction and public traffic.
2. Provide warning signs for public traffic and "STOP" signs for entrance onto public roads.
3. Comply with signage and traffic control requirements of authorities having jurisdiction.
4. Provide traffic control and directional signs, mounted on barricades or standard posts as needed to direct construction and public traffic, including but not limited to:
a. At each change of direction of a roadway and each crossroad.
b. At detours.
c. At parking areas.
d. At entrance points onto public roads.

5. Provide automatic traffic control signals where required by local authorities having jurisdiction.

6. Provide traffic cones and drums to maintain orderly flow of traffic.

7. Provide flares and lights during periods of low visibility to clearly delineate traffic lanes and to guide traffic.

F. Provide areas of illumination of critical traffic and parking areas.

1.23 DUST CONTROL

A. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1. Take all necessary measures and provide equipment and materials to minimize dust from rising and blowing across the site and also to control surface water throughout the operation so that it does not run onto paved ways without being filtered. Control all dust created by construction operations and movement of construction vehicles, both on site and on paved ways.

2. Take control measures to prevent dust and debris from blowing onto abutting neighbors to the Site. Control measures may include additional height fencing with dust barriers, additional water-down operations and other measures as necessary to protect abutting neighbors.

3. During the progress of the work, maintain the areas of construction activities including sweeping and sprinkling of streets as necessary. Provide and use calcium chloride for more effective dust control, when deemed necessary by regulatory agencies, without additional cost to the Owner.

B. Prevent air-borne dust from dispersing into ducts (air supply and return) during construction. Seal all open ends of completed ductwork, and overnight work-in-progress. Inspect ducts on daily basis to ensure seals are intact. Protect ductwork waiting, to be installed with surface wrapping.

1. Ductwork protection during construction is a joint responsibility between the General Contractor and HVAC Trade contractor.

2. HVAC Trade contractor is responsible to wipe down internal surfaces of ductwork immediately prior to installation to remove all dust and debris.

C. Prevent air-borne dust from dispersing into Owner occupied spaces (after partial Owner-occupancy, if occurs). Provide interior dust-tight temporary partitions as may be required, at no additional cost to Owner.

1. Provide air filters over openings and grilles in air-return ducts occurring within construction areas.

2. Provide openings in temporary partitions where air-return grilles occur outside of work areas. In each opening, provide standard 2 inch thick, throw-away type filter having a rated efficiency of 35 percent. Review with Architect size
requirements of filtered openings, locations of openings and how many are required.

3. Replace air filters as required to maintain their efficiency.

1.24 NOISE CONTROL

A. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.

1. The General Contractor shall schedule and conduct demolition and construction operations in a manner that will minimize, to the greatest extent possible, any noise disturbance to the public in areas adjacent to the Work and to occupants of buildings or structures in the vicinity of the Work.

2. Configure the construction site in a manner to locate loud equipment and activities as far away as possible from noise-sensitive locations.

3. Submit proposed noise abatement program to the Owner’s Project Manager and Architect for review.

B. The General Contractor shall use all reasonable efforts to implement noise reduction methods to minimize construction noise emission levels. Noise reduction methods shall include, but are not be limited to:

1. Execution of construction work by methods and by use of equipment which will reduce excess noise.

2. Equip air compressors with silencers, and power equipment with mufflers.

3. The local power grid shall be used wherever feasible to limit generator use. No generators larger than 25 KVA shall be used and, where a generator is necessary, it shall have maximum available noise muffling capacity.

4. Attaching noise-deadening material to the inside of hoppers and chutes.

5. Limit the number and duration of equipment idling on the site, the use of annunciators or public address systems and the use of air or gasoline-driven hand tools.

6. Manage vehicular traffic and scheduling to reduce noise:
   a. Use barrels or signage to detour traffic away from plated trenches.
   b. Minimize noise from backup alarms using measures that meet OSHA regulations including the use of self-adjusting ambient-sensitive backup alarms, manually-adjustable alarms on low setting, use of observers, and scheduling of activities so that alarm noise is minimized.
      1) Configure construction site to minimize backup alarm noise. Develop site access in a manner to permit vehicular movement through the site in a forward manner without the need to back up.

C. Suspension of Noise Generating Work: The Owner retains the right to direct General Contractor to temporarily suspend noise generating work, or to utilize other means and methods, as practical, and acceptable to the Owner, which are less disruptive to the educational activities of the adjacent middle school. MCAS Testing, Mid-Term and Final’s testing, Graduation Ceremonies, are examples of when suspension of noise generating work may be required.
1.25 TEMPORARY BARRICADES

A. Provide barriers and barricades to prevent unauthorized entry to construction areas.
   1. Comply with standards and code requirements for erection of barricades, where required provide lighting, including flashing lights.
   2. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against.
   3. Provide special barriers necessary to protect entrances and areas around building and to prevent persons from coming in contact with material or construction operations.

B. Provide temporary enclosures, for protection of construction from exposure to weather, other construction operations and similar activities. Where heat is needed and the building envelope is incomplete, provide enclosures where there is no other provision for containment of heat.
   1. Provide doors with self-closing hardware and locks.
   2. Provide barricades and protective entrances at least 48 inches high around openings in floors, escalators and elevators.

C. Provide temporary roofing as needed to maintain the building watertight.

1.26 TEMPORARY FENCES

A. Construction fence: Provide a 6 foot high commercial grade chain link fence in areas designated on the phasing plans to provide a secure perimeter around the construction site; equip with vehicular and pedestrian gates and locks.
   1. Relocation of all fences and gates as required due to construction phasing. Relocations shall be provided at no additional cost to the Owner.
   2. Vehicular and Pedestrian Gates: Build into fence at approved locations. Provide gates with cross-bracing, and hung on heavy strap hinges with post and hook for double gates. Provide heavy hasps and padlocks.
   3. Visual Barrier: Provide a continuous ‘solid visual barrier’ at all fencing. Solid barrier shall be constructed approved by Architect by use of an opaque applied scrim. Barrier shall be a height of 6 feet above grade for full length of barrier.

B. Emergency Key Cabinet: Provide emergency access key cabinet (“Knox Box”): medium duty, surface mounted. Locate emergency key cabinet in readily-accessible location outside of fence line. Provide keys for emergency key cabinet to Owner’s designated representative(s).
   1. Inside emergency key cabinet maintain keys for fence entrance gates, and construction core keys for building, once it is closed in.
   2. Inside emergency key cabinet include the Emergency Contact List as specified under Section 01 33 00 – SUBMITTAL PROCEDURES.
C. Fence, General: Fence shall be industrial-grade, heavy-duty construction: Galvanized fabric with galvanized frame.

1. Chain link fabric shall be made of coated-steel, 9 gage (0.148 inch) core wire woven in 2-inch uniform mesh, height (roll width) to suit fence height, with bottom selvage knuckled, top selvage twisted, with woven fabric having a minimum breaking strength of 1290 pounds.

2. Framework: Posts and rails shall be sized as detailed on the drawings, Type 1 seamless steel pipe, ASTM A-120, standard weight schedule 40, hydrostatic testing waived.

3. Gate Posts: Standard weight pipe 2-7/8 inches OD nominal weight, 5.79 pounds per foot.

4. Gate Frames: 2 inches OD standard weight pipe, 2.73 pounds per foot with heavy malleable iron or pressed steel corner fittings securely riveted. Fabric to match the fence shall be installed in the frame by means of tension bars and hook bolts. Each frame to be equipped with 3/8 inches diameter adjustable truss rods.

5. Bottom hinges to be ball and socket type designed to carry the weight of the gate on the post footing. Upper hinge to be wrap around adjustable type. All gates to be equipped for padlocking and with semi-automatic outer catches to secure gates in opened position.

6. Fittings: Pressed steel or malleable iron, hot-dipped galvanized conforming to the requirements of ASTM A153. Tie wires shall be minimum nine-gage galvanized wire. Attachment bolts shall be galvanized.

7. Post Settings: Driven into ground.
   a. Temporary concrete bases may be considered where fencing is scheduled for relocation, as approved by Owner, Owner’s Project Manager and Architect.

D. Snow Fence: Provide continuous orange plastic “snow” fence.

1. Scope and Extent: If not otherwise indicated, provide “snow fence” for all fencing except where “chain link security fence” is required.

2. Height: Minimum 4 feet above grade.

3. Posts: Provide painted steel posts set at least 24 inches into the ground. Space posts not more than 8 feet on center. Erect and maintain posts plumb. Tie plastic fabric to posts at least three times per post.

1.27 TREE AND PLANT PROTECTION

A. Comply with requirements specified in Section 01 56 39 - TREE PROTECTION AND TRIMMING, and as specified herein.

1. Provide temporary guards or fencing to protect trees and vegetation to be left standing. Protect plant life by placing boards, planks, poles or fencing around tree driplines.

2. A reasonable sum (cost of equivalent replacement) will be deducted from the Contract Sum for any permanent damage to existing trees or plantings which
are outside the construction site area but on the Owner's property or within the construction site area, and areas designated to be protected. Damage to trees and plants off the Owner's property shall be fully the responsibility of the General Contractor.

1.28 POLLUTION CONTROL

A. Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by, the discharge of noxious substances from construction operations.
   1. Comply with all applicable Federal, State, County, and municipal laws regarding pollution.
   2. Prevent pollution of streams, lakes, or reservoirs with fuels, oils, bitumens, calcium chloride, acids, waste products, effluents, chemicals or other harmful substances. Prevent from such substances from entering storm drains and sanitary sewers.

B. Provide equipment and personnel, perform emergency measures required to contain any spillage and to remove contaminated soils or liquids.
   1. Excavate and legally dispose of any contaminated earth off-site, and replace with suitable compacted fill and topsoil.

1.29 PEST CONTROL

A. Provide rodent control as necessary to prevent infestation of construction and storage areas. Employ methods and use materials which will not adversely affect conditions at the site or on adjoining properties.

B. Provide marked metal containers with lids for all edible rubbish and enforce their use by all employees. Empty containers and legally dispose of contents off site to maintain rodent control.

C. If the General Contractor’s basic rodent control program proves to be ineffective, obtain the services of a professional exterminator, at no additional cost to the Owner.

D. Should rodenticides be considered necessary, submit copies of proposed program to Owner and Architect. Use of rodenticide shall comply with manufacturer’s published instructions and recommendations. Clearly indicate:
   1. Area or areas to be treated.
   2. Rodenticides to be used.
   3. Manufacturer’s printed instructions.
   4. Pollution preventive measures to be employed.
1.30 FIRE PREVENTION MEASURES

A. Prior to commencement of work at the site, the Owner’s Project Manager, and General Contractor shall meet with the City of East Providence Fire Marshal to plan site and building access in the event of fire.
   1. Access paths for heavy firefighting equipment shall be laid out and maintained.
   2. Free access from streets to fire hydrants and to outside connections for standpipes, sprinklers or other fire extinguishing equipment shall be provided and maintained.

B. The General Contractor shall take all necessary precautions for the prevention of fire during construction. Install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways, and other access routes. Ascertain and comply with requirements of Project insurance carrier, local fire department and the state fire marshal.
   1. Maintain the area within contract limits orderly and clean.
      a. Remove combustible rubbish promptly from the site and when required, store combustible materials in containers in fire-safe locations.
   2. Maintain clear access to exits from within the building.
   3. Smoking is not permitted on-site.

C. Establish procedures for fire protection for welding, cutting and open torch work, and other potentially hazardous operations. Obtain permission from local authorities having jurisdiction for such work as required by law. Provide special fire extinguishers at welding and torch cutting work.
   1. After Owner occupancy: Maintain a fire watch when fire protection and warning systems have been temporarily de-activated. Maintain watch during all working hours for full period of de-activation at no cost to Owner.
   2. The General Contractor will assign personnel to inspect all construction areas at the end of each day’s work for fire hazards prior to lock-up.

D. Provide for outside storage of gas tanks, sufficiently clear of any structure. Promptly remove welding and cutting equipment from the building when no longer required. Do not store welding or cutting materials within the building when work is not being performed.

E. Permanent fire protection system may be activated to meet these requirements. Replace fusible link heads and other expended or discharged components at time of Substantial Completion.

1.31 SECURITY MEASURES

A. Protect Work, and Owner’s operations from theft, vandalism, and unauthorized entry. Initiate a security program at job mobilization.
B. Maintain security program throughout construction period until Owner occupancy

C. Provide entry control:
   1. Restrict entrance of persons and vehicles into Project site.
   2. Allow entrance only to authorized persons with proper identification.
   3. Maintain log of workmen and visitors, make available to Owner’s Project Manager on request.

1.32 PROJECT IDENTIFICATION AND TEMPORARY SIGNAGE

A. General: Signs other than those specified herein are not permitted, except those required by law or expressly authorized by the Owner.
   1. At all times during the project, signage must clearly direct occupants and the general public in the safe use of the building. Signs must clearly indicate areas of no admittance, and further must clearly define and direct users to building entries, exits, school offices and other important destinations. All such interim signage must be painted by a professional sign painter on 3/4-inch medium density overlay plywood with letters no less than 3 inches in height. Coordinate required signage with Architect.

B. Project sign:
   1. Provide 8 foot wide by 4 foot high foot project sign of exterior grade MDO plywood and wood frame construction, painted, with self-adhesive color printed text with reproduction of building rendering. Architect will provide signage design.
      a. Color prints for rendering shall be 3M Scotchprint marking film series 8640 or equal, 4 mil thickness, “ControlTac” vinyl film as manufactured by 3M company having a positional pressure activated pigmented adhesive.
      b. Overlay protecting film, Scotchprint Film, clear over laminating film, as manufactured by 3M company.
   2. List title of project, Owner (Awarding Authority), Owner’s Project Manager, Architect, engineering sub-consultants, and General Contractor and major Trade contractors.
   3. Erect on site at location established by Architect.

C. Signage at perimeter of construction site: Provide clear and visible warning signage with appropriate language such as: “Prohibited Access – Hard Hat Only – No Admittance – Authorized Personnel Only”.

1.33 REMOVAL OF TEMPORARY UTILITIES, CONTROLS, AND FACILITIES

A. Remove temporary above grade and buried utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
   1. Do not remove erosion control devices until after all disturbed earth has been paved or vegetated.
B. Remove underground work and compacted materials to a depth of 2 feet; fill and grade site as specified.

C. Restore permanent facilities used during construction to specified condition.

D. Clean and repair damage caused by installation or use of temporary work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

End of Section
PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The BIDDING REQUIREMENTS, CONTRACT FORMS, and CONTRACT CONDITIONS as listed in the Table of Contents, and applicable parts of Division 1 - GENERAL REQUIREMENTS, shall be included in and made a part of this Section.

B. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the work of this Section.

1.2 SUMMARY

A. This Section consists of roofing work where shown on the Drawings, as specified herein, and as required for a complete and proper installation. Work includes, but is not limited to the following:
   1. Partially remove existing roofing system as required for preparation of new construction.
   2. Patch or replace existing roofing where abuts new construction, at flashing and other penetrations occurring through existing roof.
   3. Repair existing roofing damaged by the work of this Contract.
   4. Provide manufacturer’s pre-construction and final inspection as required for maintenance of Owner’s warranty. These inspections are to be included in the base bid; additional inspections, or work incurred as a result of the final inspection shall be without additional cost to the Owner.

1.3 RELATED REQUIREMENTS

A. Section 01 73 29 - CUTTING AND PATCHING: Procedural and administrative requirements for cutting and patching.

B. Section 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL: Procedural and administrative requirements relating to recycling goals, waste management program and reporting.

C. Section 04 20 00 - UNIT MASONRY: Concrete unit masonry curbs.

D. Section 07 72 00 - ROOF ACCESSORIES:
   1. Walkway pads.
   2. Concrete pavers surrounding rooftop equipment,
   3. Acoustical treatment beneath roof top units (RTU’s) inside of curb perimeters.

E. Section 07 92 00 - JOINT SEALANTS: Requirements for joint sealants and backing materials.

F. Division 22 - PLUMBING: Plumbing penetrations through existing roof.
G. Division 23 – HEATING, VENTILATING AND AIR CONDITIONING: Mechanical system penetrations through existing roof.

H. Division 26 - ELECTRICAL; Electrical system penetrations through existing roof.

1.4 REFERENCES

A. Referenced Standards: Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01 42 00 - REFERENCES. The standards referenced herein are included to establish recognized minimum quality only. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern. Equivalent quality and testing standards will be acceptable, subject to their timely submission, review and acceptance by the Architect.
   1. FM Roof Assembly Classifications and Loss Prevention requirements, I-28 and I-29S.
   2. UL Fire Resistance Directory.
   3. All applicable federal, state and municipal codes, laws and regulations for fire-resistance roof ratings.

B. Inclusionary References: The following reference materials are hereby made a part of this Section by reference thereto:
   4. Roof System Manufacturer’s published Technical Specifications, Bulletins and Advisories.

C. Definitions:
   1. Roofing Terminology: Refer to ASTM D1079 and the glossary of NRCA’s “The NRCA Roofing and Waterproofing Manual” for definition of terms related to roofing work in this Section.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. General: Coordinate the work of this Section with the respective trades responsible for installing interfacing and adjoining work for proper sequence of installation, and ensure that the work performed hereunder is acceptable to such trades for the installation of their work.

B. Pre-Installation Meetings: At least two weeks prior to commencing the work of this Section, conduct a pre-installation conference at the Project site. Comply with requirements of Section 01 31 00 - PROJECT MANAGEMENT AND COORDINATION. Coordinate time of meeting to occur prior to installation of work under the related sections named below.
   1. Required attendees: Owner or designated representative, Architect, General Contractor, Roofer’s Project Superintendent, roof manufacturer’s technical
representative and representatives of other related trades as directed by the Architect or Contractor, and representatives for installers of related work specified under the following Sections:

a. Section 07 72 00 - ROOF ACCESSORIES.

b. Division 22 – PLUMBING.

c. Division 23 – HEATING, VENTILATING AND AIR CONDITIONING.

d. Division 26 – ELECTRICAL.

2. Agenda:

a. Scheduling of roofing operations.

b. Review of staging and material storage locations.

c. Coordination of work by other trades.

d. Installation procedures for ancillary equipment.

e. Protection of completed Work.

f. Establish weather and working temperature conditions to which Architect and Contractor must agree.

g. Emergency rain protection procedure.

h. Discuss process for manufacturer’s inspection and acceptance of completed Work of this Section.

C. Sequencing:

1. Field Measurements

a. Take field measurements before preparation of shop drawings and fabrication, where possible, to ensure proper fitting of Work.

b. Allow for adjustments within specified tolerances wherever taking of field measurements before fabrication might delay Work.

1.6 SUBMITTALS

A. Information and Review Submittals: Submit the following under provisions of Section 01 33 00 - SUBMITTAL PROCEDURES:

1. Literature: Manufacturer's product data sheets, specifications, performance data, physical properties and installation instructions for all proposed items and schedule indicating locations of all roofing accessories.

2. Shop drawings: Submit shop drawings showing construction details with specific instructions for attachment and tie-ins.

3. Review statement: Written statement, signed by the roofing applicator, stating that the Contract Drawings have been reviewed by an agent of the roofing system manufacturer; accompanied by a pre-installation written statement from the manufacturer that the selected roof system is proper, compatible, and adequate for the application shown.

a. The roofing applicator will notify the Architect and Owner in writing if the existing conditions when exposed are in conflict with the Contract Documents for the proper application of the selected roofing system or the warranty requirements.

4. Qualification Submittals.
B. Closeout Submittals: Submit the following under provisions of Section 01 78 00 - CLOSEOUT SUBMITTALS.
   1. Manufacturer’s field quality control reports of field inspections, including, revised “as-built” shop drawings and manufacturer’s final punch list.
   2. Manufacturer’s warranties: Include coverage of materials and installation and resultant damage from failure of installation to resist penetration of moisture.
   3. Record Documentation:

1.7 QUALITY ASSURANCE
A. The manufacturer’s authorized representative shall provide a final inspection at the completion of the project to insure, that the project has been completed in accordance with the manufacturer’s warranty requirements. Upon approval and acceptance of the project, an updated manufacturer’s warranty certification shall be written, executed and furnished to the Owner.
B. Submit Manufacturer’s field quality control reports of field inspections, including, revised “as-built” shop drawings and manufacturer’s final punch list.
C. All roofing shall be provided and approved by the existing roof system manufacturer whose warranty is active. Any materials not manufactured or provided by this roofing manufacturer shall have written approval from the roofing manufacturer stating the materials are acceptable and are compatible with the other materials and systems required.
D. The roof system manufacturer’s Technical Specifications shall be considered a part of this specification and should be used as a reference for specific application procedures and recommendations. Where a conflict does exist between the manufacturer’s written specifications and those procedures specified in this Section, the more stringent requirements meeting the Manufacturer’s minimum requirements for the provided warranty shall apply.

1.8 QUALIFICATIONS
A. Roofing applicator, with a minimum of 3 years documented experience demonstrating previously successful work of the type specified herein, and shall be trained and certified by roofing manufacturer of the existing roof system.

1.9 DELIVERY, STORAGE AND HANDLING
A. Delivery and Acceptance Requirements:
   1. Do not deliver items to the site, until all specified submittals have been submitted to, and approved by, the Architect.
   2. Deliver materials in original unopened packages, containers or bundles bearing brand name, and identification of manufacturer, with labels and package seals intact and legible.
B. Storage and Handling Requirements:
   1. Store and handle materials following manufacturer’s recommended procedures, and in accordance with material safety data sheets.
2. Protect materials from damage due to moisture, direct sunlight, excessive temperatures, surface contamination, corrosion and damage from construction operations and other causes.

C. Packaging Waste Management: Comply with packaging requirements specified under Section 01 60 00 - PRODUCT REQUIREMENTS.
   1. Shipping materials: Manufacturer shall utilize to the greatest extent possible packaging materials which are biodegradable and recyclable.
   2. Jobsite packaging waste management: Recycle packaging materials coordinated with general construction waste management specified under Section 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

1.10 ENVIRONMENTAL REQUIREMENTS
   A. Do not remove existing roofing when weather conditions threaten the integrity of the building contents or intended continued occupancy.
   B. Apply roofing in dry weather; do not install roofing in inclement weather or when precipitation is predicted with greater than 20 percent possibility.
   C. Do not apply roofing membrane to damp or frozen deck surface.
   D. Apply roofing when ambient temperature is above 40 degrees Fahrenheit.

1.11 WARRANTY
   A. General: Submit the following warranties under provisions of Section 01 78 00 - CLOSEOUT SUBMITTALS, and in compliance with Section 01 78 36 – WARRANTIES.
   B. Deliver to the Owner upon completion of the work of this Section, an unconditional warranty, on the work of this Section agreeing to promptly repair the roofing as necessary to prevent penetration of water through it.
      1. Warranty shall cover product quality, performance, and workmanship for a period of 15 years.
      2. Warranty shall cover total roofing system including membrane, insulation, adhesives, sealants, fasteners, membrane flashings, and other materials furnished and installed under this Section.
   C. Deliver to the Owner upon completion of the work of this Section, a new unconditional warranty on the work of this Section including repairs of existing roof to remain. Warranty shall include the prompt repair of in-place roofing as necessary to prevent penetration of water through it.
      1. Warranty shall cover same terms as previous warranty, and include membrane, insulation, adhesives, sealant, fasteners, membrane flashings, and other materials furnished and installed under this Section.
      2. Warranty shall cover product quality, performance, and workmanship for an extended period of 15 years from date of Project Substantial Completion.
PART 2 - PRODUCTS

2.1 MANUFACTURERS, AND MATERIALS IN GENERAL.

A. Proprietary product: The Owner has determined that roof system products shall be proprietary for the best public interest. All materials shall be provided by the manufacturer of the existing roofing system. Work of this Section shall be in full compliance with existing valid roofing warranty.

B. Materials shall be provided by manufacturer of existing roofing system, in full compliance with existing valid roofing warranty. Where an existing roofing warranty has expired and is no longer in effect, manufacturers offering products which may be incorporated in the work are limited to, the following:
   1. Carlisle Syntec, Carlisle PA.
   2. Firestone Building Products Co., LLC, Indianapolis, IN.
   3. Mule-Hide Products Co., Inc., Beloit WI.
   4. GenFlex Roofing Systems, Indianapolis, IN.

2.2 ROOFING MATERIALS

A. Roofing membrane: Ethylene propylene diene monomers formed into uniform, flexible sheets, complying with ASTM D4637 and ANSI/RAMIPR-1, with a nominal thickness of 60 mils.

B. Flashing material: Manufacturer's standard system compatible with flexible sheet membrane.

C. Bonding adhesive shall be as recommended by manufacturer. Adhesive shall be compatible with all materials to which the elastomeric membrane is to be bonded.

D. All accessories, including splicing cement, inseam sealant, lap sealant, cutoff mastic, night sealer, elastomeric accessories, nailing strips, cant strips, tapered edge strips and flashing accessories shall be as recommended by roofing manufacturer.

E. Termination bars: Minimum 1/8 inch thick extruded aluminum, of channel profile with 1/4-inch legs and minimum overall width of 2 inches. Termination bar shall be factory punched to accept fasteners 6 inches on-center. Install with stainless steel screw fasteners.

F. Screws: Steel fastener with fluorocarbon coating. Minimum thread diameter 0.22 inches and minimum shank diameter of 0.172 inches.

G. Masonry fasteners: Round head stainless steel screw and neoprene washer with lead expansion anchor, equal to Rawlplug by the Rawlplug Company, Inc., New Rochelle NY. Other manufacturers offering similar products which may be considered equal, include the following:
   1. Dur-O-Wal Inc., Dayton, OH.
   2. Hilti Corporation, Tulsa OK.
PART 3 - EXECUTION

3.1 PREPARATION

A. During the operation of work of this Section, protect the work of other trades against undue soilage and damage by the exercise of reasonable care and precautions. Repair or replace any work so damaged and soiled.

B. Carefully broom clean substrate immediately prior to patching roofing.

C. Where surface joints at roof and wall substrates exceed 1/4-inch width, fill flush with surface with pourable sealer before proceeding with the installation.

3.2 EMERGENCY MATERIALS AND PROCEDURES

A. Maintain continuous temporary protection prior to and during installation of new roofing system. Do not leave unfinished roof areas uncovered over-night or during inclement weather.

B. Roofing subcontractor is fully responsible for all damage due to water penetration occurring during the Work of this Section.

3.3 CUTTING AND PATCHING EXISTING ROOFING ASSEMBLY

A. The existing roof is under valid warranty, Contractor shall obtain warranty information from Owner, notify roofing manufacturer of changes to existing roof and request bid list of applicators who are eligible for the work. All materials must be approved by manufacturer for use on this project.
   1. Follow local, state and federal regulations, safety standards and codes. When a conflict exists, the more restrictive document shall govern.
   2. Follow insurance underwriter’s requirements acceptable for use with specified products or systems.

B. Review all special conditions, such as penetrations, projections, tie-ins with existing construction and connections with new construction. Review these conditions with the Roofing Manufacturer, submit the Roofing Manufacturer’s recommendations and details to the Architect for approval.

C. Cut and patch existing roofing to accommodate new roof top equipment and penetrations in roofing. Perform cutting and patching of existing membrane roof as required by new construction in accordance with details and specifications of roofing manufacturer.

D. Where penetrations are made through membrane roofing system and existing insulation is disturbed by new construction, install insulation to match existing roof assembly.

3.4 FLASHING INSTALLATION

A. Flash all penetrates (pipes, conduits,) passing through membrane. Flash pipe with molded pipe flashings where installation is possible. Where molded pipe flashings cannot be installed, use field fabricated pipe seals. Secure top edge of molded or prefabricated flashing with stainless steel clamping ring.
B. Flashing for ductwork penetrating roof shall be as detailed and shall consist of metal cover flashing over membrane base flashing, attaching directly to ductwork with screws or flashing of prefabricated curbing. Apply sealant in accordance with manufacturer's instructions.

C. Unusual Penetrations: Clusters of pipes and unusual shaped penetrations shall be sealed with Pourable Sealer, 2 inches deep minimum, in a pitch pocket type seal.

D. Molded flashings, prefabricated flashings and membrane base flashings shall be products of the specified manufacturers.

E. Elastomeric Flashings. Provide elastomeric sheet flashings at elastomeric sheet roofing work, as indicated.
   1. Use longest practical lengths and widths of elastomeric sheet flashing material to eliminate or minimize joints. Complete splices between flashings and main-sheet before bonding flashings to vertical surfaces. Splices shall be sealed 3 inches beyond fasteners that attach membrane to horizontal nailer in same manner as splices within roofing membrane. Flashings shall be bonded 100 percent to subsurfaces, except at coves where movement is anticipated.
      a. Install flexible tube at coves where movement is anticipated.
   2. Apply bonding adhesive to flashing and surface to which it is being bonded. When bonding adhesive has dried to the point where it does not string or stick to a dry finger touch, roll flashing into adhesive. Do not bridge flashing at changes of direction.
   3. Nail top of flashing 12 inches on center under sheet metal copings, counter flashing, and other sheet metal work.

3.5 WALKWAY PROTECTION
A. Install additional membrane at locations shown and where required for access to roof-mounted equipment.
   1. Clean roofing membrane and fully adhere walkway pads as recommended by manufacturer's instructions.

3.6 CLEANING
A. Remove elastomeric adhesive markings from finished surfaces.
B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and conform to their instructions.
C. Repair or replace defaced, or disfigured finishes caused by the work of this Section.

3.7 PROTECTION
A. Provide special protection or avoid traffic on completed work. Restore to original condition, or replace, work and roofing materials damaged.

End of Section
Section 07 72 00
ROOF ACCESSORIES

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The BIDDING REQUIREMENTS, CONTRACT FORMS, and CONTRACT CONDITIONS as listed in the Table of Contents, and applicable parts of Division 1 - GENERAL REQUIREMENTS, shall be included in and made a part of this Section.

B. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the work of this Section.

1.2 SUMMARY

A. Furnish and install the following:
   1. Traffic walkways leading from roof access point to mechanical equipment.
   2. Precast concrete paver units located surround each roof top mechanical equipment unit.
   3. At interior side of RTU perimeter curbs, provide one layer of cementitious board, and over which apply mineral wool insulation for acoustical control.

1.3 RELATED REQUIREMENTS

A. Section 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL: Procedural and administrative requirements relating to recycling goals, waste management program and reporting.

1.4 REFERENCES

A. Referenced Standards: Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01 42 00 - REFERENCES. The standards referenced herein are included to establish recognized minimum quality only. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern. Equivalent quality and testing standards will be acceptable, subject to their timely submission, review and acceptance by the Architect.

1. ASTM A525 - General Requirements for Steel Sheet, Zinc-Coated by the Hot Dip Process
2. ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
4. UL - Fire Hazard Classifications
5. FM - Roof Assembly Classifications.
6. All applicable federal, state and municipal codes, laws and regulations for ratings of roof assemblies
B. Inclusionary References: The following reference materials are hereby made a part of this Section by reference thereto:
   1. NRCA - Roofing and Waterproofing Manual.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. General: Coordinate the work of this Section with the respective trades responsible for installing interfacing and adjoining work for proper sequence of installation, and ensure that the work performed hereunder is acceptable to such trades for the installation of their work.

B. Pre-installation Meetings: Installer of the Work of this Section is required to attend pre-installation conference specified under Section 07 59 00 – CUTTING AND PATCHING MEMBRANE ROOFING.

1.6 SUBMITTALS

A. Information and Review Submittals: Submit the following under provisions of Section 01 33 00 - SUBMITTAL PROCEDURES:
   1. Literature: Manufacturer's product data sheets, specifications, performance data, physical properties for each roof specialty item and related accessories furnished hereunder, include data on shape of components, materials and finishes, anchor types and locations.
   2. Manufacturer's installation instructions: Indicate interface with adjacent components, and perimeter conditions.
   3. Shop drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work. Provide details bearing dimensions of actual measurements taken at the project
      a. Layout of prefabricated traffic pads on roofs;
      b. Dimensioned plan layout of precast concrete paver units.
   4. Selection Samples:
      a. Manufacturer's standard chips of integral colorant additive for precast concrete paver units, for selections by the Architect.
   5. Qualification Submittals.

B. Closeout Submittals: Submit the following under provisions of Section 01 78 00 - CLOSEOUT SUBMITTALS.
   1. Maintenance Contracts:
   2. Bonds and Warranty Documentation:
      a. Manufacturer's Warranties and Guarantees as specified elsewhere herein this Section.

1.7 QUALITY ASSURANCE

A. Perform work in accordance with NRCA details.
1.8 DELIVERY, STORAGE AND HANDLING

A. Delivery and Acceptance Requirements:
   1. Do not deliver items to the site, until all specified submittals have been submitted to, and approved by, the Architect.

B. Storage and Handling Requirements:
   1. Store preformed and prefinished material to prevent twisting, bending or abrasion and to provide ventilation. Slope metal sheets to ensure drainage.
   2. Protect materials from damage due to moisture, direct sunlight, excessive temperatures, surface contamination, corrosion and damage from construction operations and other causes.
   3. Prevent contact with materials during storage which may cause discoloration, staining or damage.

C. Packaging Waste Management: Comply with packaging requirements specified under Section 01 60 00 - PRODUCT REQUIREMENTS.
   1. Shipping materials: Manufacturer shall utilize to the greatest extent possible packaging materials which are biodegradable and recyclable.
   2. Jobsite packaging waste management: Recycle packaging materials coordinated with general construction waste management specified under Section 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

1.9 PROJECT CONDITIONS

A. Perform work of this Section when existing or forecasted weather conditions are within the limits established by manufacturers of the materials and products used.

1.10 WARRANTY

A. General: Submit the following warranties under provisions of Section 01 78 00 - CLOSEOUT SUBMITTALS, and in compliance with Section 01 78 36 – WARRANTIES.

B. Provide 5 year warranty under provisions of Section 01 78 00 - CLOSEOUT SUBMITTALS. Warranty shall include repair or replacement of roof accessories which exhibit defects in materials or workmanship. Defects is defined as uncontrolled leakage or water and abnormal aging or deterioration.

PART 2 - PRODUCTS

2.1 TRAFFIC PADS

A. Traffic pads: Preformed EPDM pads, minimum 30 by 30 inches, pressure sensitive adhesive backing. Color Black.
   3. Carlisle SynTec, product “Sure-Seal EPDM Pressure-Sensitive Molded Walkway Pad”.

ROOF ACCESSORIES
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2.2 PAVERS

A. Pavers: Solid concrete masonry units, engineered by paver fabricator for wind uplift, fabricated from normal weight aggregates conforming to ASTM C33, Portland cement, air-entraining agents, integral water repellants, finely-ground silica, integral colorant, and other filler materials; having a compressive strength of not less than 8,500 psi, a maximum water absorption of 5 percent after 24-hour submersion in cold water, and having no breakage when subject to 50 cycles of freezing and thawing, as per ASTM C67, Section 8 as manufactured by Hanover Architectural Products, Hanover PA, Product: “Prest”, or approved equal.

1. Size: 23-1/2 by 23-1/2 inches (597 mm square) by 2 inches thick.
2. Color: Selected by Architect from Manufacturer’s standard color options.

2.3 CEMENTITIOUS BOARD AND MINERAL WOOL INSULATION

A. Cementitious tile backer board (“cement board“): 5/8-inch nominal thickness manufactured for exterior application; glass fiber reinforced.

1. Acceptable products include the following:

B. Rigid mineral wool insulation: mineral wool fiber insulation board, conforming to ASTM C612, Type IVB compliant, having a nominal density of 11 pounds per cubic foot.

1. Non-Combustible as tested per ASTM E136.
2. Flame Spread Classification: Class A (less than 25, per testing by NFPA 255, ASTM E84 or UL 723), with flame spread rating of 0 and smoke developed rating of 0.
3. Thermal Resistance: ASTM C518 (C177), R-value of 4 per inch.
4. Thickness: As indicated on Drawings.
5. Size: 48 inches x 72 inches.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect all surfaces and verify that they are in proper condition to receive the work of this Section.

B. Beginning of installation means acceptance of existing site conditions.

3.2 INSTALLATION - TRAFFIC PADS

A. Refer to the Drawings for locations and extent of traffic pads on sheet membrane roofs. Install the traffic pads directly on the sheet membrane roofing, using setting mastic recommended by the sheet membrane manufacturer. Ensure that surface of each pad is level, and on the same plane as adjacent pads, leaving sufficient space between pads to permit flow of drainage water.
3.3 INSTALLATION – PAVERS
   A. Locate pavers, minimum two units wide surrounding all roof top mechanical equipment. Install directly over roof membrane, and adhere using manufacturer’s recommended adhesive for EPDM roofing.

3.4 INSTALLATION CEMENTITIOUS BOARD AND MINERAL WOOL
   A. Install single layer of cement board and overlay with mineral wool. Fill entire area beneath mechanical rooftop equipment inside of curbs.

3.5 ADJUSTING
   A. Test operation of vents and hatches upon completion of the installation. Make any and all adjustments necessary to ensure proper operation.

   B. Touch up damaged coatings and finishes.

3.6 CLEANING
   A. Remove all labels and packing materials from roof accessories, and thoroughly clean all metal surfaces free from dirt, handling marks, and other foreign matter.
      1. Do not remove UL labels and “Risk of Fall” or other similar warning labels.

   B. Upon completion of the work of this Section in any given area, remove tools, equipment and all rubbish and debris from the work area; leave area in broom-clean condition.

End of Section
PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The BIDDING REQUIREMENTS, CONTRACT FORMS, and CONTRACT CONDITIONS as listed in the Table of Contents, and applicable parts of Division 1 - GENERAL REQUIREMENTS, shall be included in and made a part of this Section.

B. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the work of this Section.

1.2 SUMMARY

A. Prepare substrates to receive flooring and ensure specified tolerance level for surface of finished floor. Preparation work includes patching, smoothing and leveling substrate as specified under Section 09 05 60 - COMMON WORK RESULTS FOR FLOORING.

B. Furnish and install the following:
   1. Solid Vinyl tile (luxury vinyl tile, "LVT") flooring.
   2. Transition strips wherever edges of resilient tile flooring materials abut dissimilar flooring, where no thresholds occur.

1.3 RELATED REQUIREMENTS

A. Section 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL: Procedural and administrative requirements for construction and demolition recycling.

B. Section 01 81 13 - SUSTAINABLE DESIGN REQUIREMENTS: Procedural and administrative requirements relating to required Northeast CHPS Verified Program, (NE-CHPS) Certification.

C. Section 09 05 06 - COMMON WORK RESULTS FOR FLOORING.

D. Section 09 65 13 - RESILIENT BASE AND ACCESSORIES: Coved and straight base.

1.4 REFERENCES

A. Referenced Standards: Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01 42 00 - REFERENCES. The standards referenced herein are included to establish recognized minimum quality only. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern. Equivalent quality and testing standards will be acceptable, subject to their timely submission, review and acceptance by the Architect.

5. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
12. NFPA 99 – Standard for Health Care Facilities
15. SCSglobal Services – SCS-EC10.3 – Indoor Air Quality Product Performance Standard for Building Interiors (FloorScore).
16. All applicable federal, state and municipal codes, laws and regulations regarding flammability and smoke generation of interior finishes.

B. Sustainability Requirement Reference: The following sustainability requirements are hereby made a part of this Section by reference thereto:

1.5 SUBMITTALS

A. Information and Review Submittals: Submit the following under provisions of Section 01 33 00 - SUBMITTAL PROCEDURES:
1. Literature: Manufacturer’s product data sheets, specifications, performance data, physical properties and installation instructions for each item furnished hereunder.
2. Submit the manufacturer’s certification that the resilient flooring has been tested by an independent laboratory and complies with the required fire tests.
3. Shop drawings: 1/4 inch scale plans of each flooring area scheduled for Work of this Section. Drawings shall bear dimensions of actual measurements taken at the project.
   a. Identify each flooring type, colors and patterns, indicate layout of tile units and direction of tile patterns.
   b. Where more than one adhesive type is specified or otherwise required by flooring manufacturer, identify on shop drawings areas for each adhesive type.
4. Verification samples:
a. Full sized flooring tile, illustrating color, and pattern demonstrating match with existing flooring.

5. Sustainable Design Submittals: As required by NE CHPS.

1.6 QUALITY ASSURANCE

A. Provide Types of Resilient tile and accessories supplied by one manufacturer, including leveling and patching compounds, and adhesives.

B. Avoid color and pattern differential; provide flooring from one production run in any single room or contiguous areas.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver resilient flooring materials in original, unopened packages and store protected for three days prior to installation in area of installation to achieve temperature stability.

B. Store materials in a clean dry, enclosed space off the ground and protected from the weather. Protect adhesives from freezing.

1.8 ENVIRONMENTAL CONDITIONS

A. Maintain uniform temperature of minimum of 65 degrees Fahrenheit and humidity of 20 to 40 percent 48 hours prior to, during, and 48 hours after installation. Store resilient flooring materials and accessories in the spaces where they will be installed for at least 48 hours before beginning installation. Thereafter, maintain a minimum temperature of 55 degrees Fahrenheit in the areas where the work is completed.

1.9 SEQUENCING AND SCHEDULING

A. Coordinate the work of this Section with the respective trades responsible for installing interfacing work.

B. Sequence work to ensure resilient flooring is not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, wet work is dry and cured, and work overhead is completed.

C. Ensure that installation of flooring and accessories occurs after other finishing operations, including painting.

1.10 WARRANTY

A. Under the provisions of Section 01 78 00 - CLOSEOUT SUBMITTALS, and in compliance with Section 01 78 36 – WARRANTIES.

1. Provide manufacturer’s standard wear warranties (minimum of 2 year), for all flooring and stair tread materials installed under this Section.

1.11 EXTRA MATERIALS

A. Upon completion of the Work of this Section, deliver to the Owner extra flooring materials for future repairs and maintenance, from the same manufacturing runs as those installed, in the following amounts.
1. Vinyl composition tile: 3 percent of each material in each color, and pattern installed.
2. Furnish a quantity of adhesive of each type used in sealed cans or containers sufficient to apply the above materials.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the requirements specified herein, manufacturers offering products which may be incorporated in the work include the following, or approved equal:

1. Vinyl composition tile:
   a. AHF Products, LLC., Mountville PA.
   b. American Billrite Inc., Amtico Flooring Division (Amitco), Lawrenceville NJ.
   c. Mannington Commercial Flooring, Salem NJ.
   d. Tarkett Inc., Houston TX.
   e. VPI Corp., Sheboygan WI.

2. Leveling filler: Refer to Section 09 05 06 - COMMON WORK RESULTS FOR FLOORING.

3. Adhesives:
   a. Advanced Adhesive Technology, Inc, Dalton GA.
   b. DAP Incorporated, Dayton OH.
   c. W.W. Henry Company, Huntington Park CA.
   d. Roberts Consolidated Industries, Inc., City of Industry, CA.

2.2 REGULATORY REQUIREMENTS

A. Provide materials and assemblies conforming to applicable building codes and regulatory agencies for flame/fuel/smoke rating requirements of flooring in accordance with ASTM E84.

B. Provide flooring material to meet the following fire test performance criteria as tested by a recognized independent testing laboratory:

1. ASTM E648 (Critical Radiant Flux) of 0.45 watts per sq. cm. or greater, Class 1.
2. ASTM E662 (Smoke Generation) Maximum Specified Optical Density of 450 or less.

2.3 SOLID LUXURY VINYL TILE (LVT) FLOORING

A. Vinyl Flooring: FloorScore certified, heterogeneous, straight edge, Ortho-phthalate-free "luxury vinyl" (LVT) flooring 3.0 mm thick (nominal 0.12 inches) having a 0.30 inch (0.76 mm) thick wear layer (minimum 0.28 inch 0.711mm) with manufacturers abrasive-resistant urethane coating, complying with the requirements of ASTM F1700, Class III, Type B. Pattern and color shall be as selected by the Architect from manufacturer’s full available range.
1. Basis of Design:

A. Luxury Vinyl Tile (designated on Drawings as LVT-1): 0.120 inch (3 mm) thick, complying with ASTM F1700, Class III, Type B Performance. Flooring tile is a homogeneous polymeric calendared layered construction with a clear rigid 32 mil (0.8 mm) thick vinyl wear layer. Wear layer, protected by a UV-cured polyurethane finish equal to Tarkett product “Techtonic Finish.”

1. Basis of Design: Tarkett product “Color Play”, in collection and color(s) as scheduled.

   e.a. To establish a standard of quality, design and function desired, Drawings and specifications have been based on the vinyl flooring products indicated. Products from other manufacturers meeting the requirements of these specifications with equivalent ranges of available color groups and pricing within those color groups shall be considered as equal upon submission of complete product information as described in Section 01 25 13 – PRODUCT SUBSTITUTION PROCEDURES. Further additional information may be requested by the Owner or Architect for determination that the proposed product substitution is fully equal to the specified product(s).

2. Sizes:
   a. Tile sizes: 18 inch by 18 inch, and 36 by 36 inches as indicated. Sizes vary per color and pattern design, and also by manufacturer, but in general a nominal 18 inch by 18 inch sized tile is desired for Project.
   b. Plank sizes (where indicated): 6 by 36 inches, 9 by 36 inches or 18 by 36 inches. Sizes vary per color and pattern design, and also by manufacturer, but in general a nominal 4 or 6 inch width by 36 or 48 inch length sized plank having wood grain pattern is desired for Project.

3. Colors/patterns: Selected by Architect from manufacturer's full available color range and patterns available.
   a. Field areas shall consist of upwards of 3 colors as subsequently selected by the Architect. Designs may consist of multiple patterns required for field colors. Each pattern may vary by location as determined by the Architect.
   b. Floor accent tile: In patterns as indicated on the Drawings. In addition to the selected field color flooring, flooring colors may require upwards of 12 separate colors for striping, borders, accent bands, dots, and other accent patterns.

2.4 ACCESSORIES

A. Filler for patching, smoothing and leveling subfloors and underlayments: Refer to Section 09 05 06 - COMMON WORK RESULTS FOR FLOORING.

B. Adhered flooring systems general requirements for adhesives (except as otherwise specified in individual Specification Sections):
1. General Flooring Adhesives: High moisture resistant and alkali resistant adhesive: Synthetic Polymer, non-flammable in wet state, with NFPA, Class A rated, VOC compliant, capable of withstanding the following in continuous service:
   a. Up to 95% RELATIVE HUMIDITY when measured in accordance with ASTM F2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in-situ Probes.
   b. Up to 8 lbs./1000 sq. ft./24 hours MVER when measured in accordance with ASTM F1869 - Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
   c. VOC content: Less than 50 g/L.
2. Acceptable adhesives, include the following, or approved equal, (subject to acceptance of flooring manufacturer for performance and compliance with warranty requirements, for each type of floor system specified):
   d. W.W. Henry Company (Ardex), Aliquippa PA. adhesive: “695 High RH Vinyl Flooring Adhesive” (maximum 95% RH / 3 pounds MVER).
   e. Mapei Corporation, Elk Grove IL Adhesive: “Ultrabond ECO 711” (maximum 95% RH / 8 pounds MVER).
   f. Mohawk Group, Dalton, GA.
      1) Adhesive: “Aquaflex M100Plus” (maximum 100% RH)
      2) Adhesive: “Aquaflex M99” (maximum 95% RH)
C. Transition and edge strips:
   1. General: Homogeneous rubber, of profiles required for thickness of abutting materials.
   2. Edge strips: Tapered or bull nose edge.
   3. Colors: Match existing flooring
D. Cleaning material: Domestic neutral floor detergent having a pH 7 or pH 8, as recommended by the flooring manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect all surfaces and verify that they are in proper condition to receive the work of this Section.
B. Verify concrete substrate has been cured and is sufficiently dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond and moisture test.
C. Beginning of installation means acceptance of existing substrate and site conditions.

3.2 PREPARATION - GENERAL

A. General: Comply with flooring manufacturer's requirements for preparation of substrate to receive resilient flooring.
   1. Close spaces to traffic during the installation of the flooring.

B. Remove, by light sanding and grinding, all protruding edges, high spots. Ensure that substrate is free from paint, varnish, wax, oil, or other foreign matter.

C. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler. Apply, trowel and float finish subfloor filler and leave a smooth, level, hard surface. Prohibit traffic from area until filler is cured.

D. Vacuum clean substrate, and ensure that substrate is dry, clean and smooth prior to application of flooring.

3.3 INSTALLATION - GENERAL

A. Install all products in strict accordance with each manufacturer's written installation procedures and other provisions specified herein.
   1. Apply primers as recommended by adhesive manufacturer's written instructions.

B. Patterns and colors: Resilient tile flooring patterns are shown on the Sample Wall and Flooring Patterns Drawings. The purpose of these Drawings is to facilitate pricing by the flooring subcontractor. Final Drawings indicating patterns of equal complexity will be provided by the Architect once approved samples have been processed. The flooring subcontractor shall note the required flooring layouts including fields, borders, striping, accent patterns, dots, number of colors, and required cutting necessary to produce the representative pattern(s). No adjustment in the Contract Sum will be provided on the basis that the final pattern provided by the Architect differs from the representative pattern provided at the time the flooring subcontractor's bid was submitted.
   1. The flooring subcontractor shall note locations where the installation of tile flooring is not perpendicular to the primary room axis. Provide all cutting and calculate resulting waste in order to produce patterns containing elements where the orientation of the flooring has been placed at an angle to that axis.

C. Spread only enough adhesive to permit installation of materials before initial set.

D. Mix tile to ensure that concentration of surface patterns is uniform throughout. Use tile from cartons in same sequence as manufactured and packaged, if so numbered.

3.4 INSTALLATION - FLOOR TILE

A. Lay flooring in pattern to match existing. Lay tile with joints straight and continuous in both directions.
B. Neatly fit resilient materials to all intersecting surfaces, and make joints as inconspicuous as possible.

C. Terminate flooring at centerline of door in closed position where adjacent floor finish is of different material or color.

D. Apply resilient materials to have uniform contact with receiving surfaces throughout, with tight joints, and with all finish surfaces smooth, in true plane, free from buckles, waves, and other imperfections.

E. Extend resilient flooring to wall lines beneath all movable equipment and movable casework. Fit resilient flooring onto breaks and recesses, against non-resilient bases, around pipes and other protrusions, under saddles, and to and around other fixed surfaces, making neat cuts in the flooring and minimizing joints.

3.5 INSTALLATION OF ACCESSORIES

A. Resilient edge and transition strips:
   1. Install edge strips at all edges of flooring which would otherwise be exposed.
   2. Place resilient edge strips tightly butted to flooring and secure with adhesive recommended by the edge strip manufacturer.

3.6 PROTECTION

A. Prohibit traffic on finished floor areas until flooring adhesive has fully set.

B. Prohibit washing, scrubbing or other similar ‘wet’ operations to occur on finished floor areas for a minimum period of 5 calendar days after installation.

C. Provide protection of completed flooring areas from construction traffic until Substantial Completion of the General Contract. Cover all resilient tile floor surfaces with non-staining heavyweight kraft paper and overlay with red-rosin paper, taping the edges to maintain position of the protection paper. Reapply papers to maintain floor protection.

3.7 POST-INSTALLATION CLEANING

A. As installation progresses, continually remove excess adhesive from floor, and wall surfaces without damage.
   1. Protect installed flooring as recommended by the flooring manufacturer against damage from rolling loads, other trades, or the placement of fixtures and furnishings.

B. Sweep floors to remove all loose dirt and debris.

C. After specified waiting period, clean all materials installed hereunder with a non-abrasive commercial detergent approved by the material manufacturers, and thoroughly rinse with clear water.
   1. Vinyl composition tile floors: Wait at least 5 full days following completion of tile installation before commencing with cleaning.
3.8 FINAL CLEANING

A. General: Perform final cleaning not before 4 days prior to Owner’s intended occupancy date.

B. Vinyl composition tile floors:
   1. Wash floors with non-abrasive commercial detergent with floor machine equipped with green or blue pad. Apply manufacturer's recommended stripping solution when floors are badly soiled.
   2. Apply a minimum of four coats of acrylic floor polish to protect flooring until regular maintenance procedures can be started.
   3. After application and curing of floor polish, ensure that polished floors are protected with heavy kraft paper.

3.9 PROTECTION

A. After cleaning and polishing, ensure that the flooring is be protected with heavy kraft paper.

End of Section
PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The BIDDING REQUIREMENTS, CONTRACT FORMS, and CONTRACT CONDITIONS as listed in the Table of Contents, and applicable parts of Division 1 - GENERAL REQUIREMENTS, shall be included in and made a part of this Section.

B. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the work of this Section.

1.2 SUMMARY

A. Furnish and install epoxy resin laboratory countertops and integral sinks.
   1. Provide ADA compliant and standard drop-in sinks where indicated.
      a. Provide marine edge at laboratory countertops at sink areas.
   2. Provide 12 inch high backsplash at walls behind all sinks.

1.3 RELATED REQUIREMENTS

A. Section 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL: Procedural and administrative requirements for construction and demolition recycling.

B. Section 01 81 13 - SUSTAINABLE DESIGN REQUIREMENTS: Procedural and administrative requirements relating to required Northeast CHPS Verified Program, (NE-CHPS) Certification.

C. Section 06 40 00 - ARCHITECTURAL WOODWORK: Plastic laminated casework.

D. Division 22 – PLUMBING: All plumbing piping and connections.

E. Division 23 – HEATING, VENTILATING AND AIR CONDITIONING.

F. Division 26 – ELECTRICAL.

1.4 REFERENCES

A. Referenced Standards: Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Section 01 42 00 - REFERENCES. The standards referenced herein are included to establish recognized minimum quality only. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern. Equivalent quality and testing standards will be acceptable, subject to their timely submission, review and acceptance by the Architect.
ADDENDUM #2

1.5 SUBMITTALS

A. Information and Review Submittals: Submit the following under provisions of Section 01 33 00 - SUBMITTAL PROCEDURES:

1. Literature: Manufacturer's product data sheets, specifications, performance data and physical properties.
   a. Submit test data on chemical resistance of epoxy resin tops.

2. Manufacturer's instructions: Manufacturer’s installation instructions indicating special procedures, and perimeter conditions requiring special attention.

3. Certifications: Submit test data on chemical resistance of epoxy resin.

4. Shop Drawings: Detailed shop drawings with field dimensions verified. Provide sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades.
   a. Indicate location of seams in plastic laminate counter tops and in epoxy resin tops longer than 10 feet.

5. Samples: Submit samples as requested by Architect including the following:
   a. 6 by 6 inch samples of specified finishes including epoxy resin top materials.

6. Fabrication Samples: Prior to start of work, fabricate a complete 24 inch wide base section with 1 drawer and 1 door, and epoxy work top. Sample shall show full construction of all joints in casework and sample joint in work top. Sample shall contain: door with specified hardware, drawer with slide and specified hardware, back and side panels. Samples not fully conforming to this specification shall be rejected by the Architect.
   a. Deliver sample to Job site. Sample will be used for the purposes of establishing a quality control standard, which can be compared to the remaining Work.
   b. Reviewed and accepted sample may be incorporated into the work.
B. Closeout Submittals: Submit manufacturer’s warranties under provisions of Section 01 78 00 - CLOSEOUT SUBMITTALS:

1.6 FIELD MEASUREMENTS
A. Take field measurements before preparation of shop drawings and fabrication, where possible, to ensure proper fitting of Work.
   1. Verify field measurements and that laboratory countertops will fit through entryways, corridors and door openings.
   2. Wall-to-wall counter tops are to be installed with a maximum 1/4" gap total (1/8 inch on either end).
B. Allow for adjustments within specified tolerances wherever taking of field measurements before fabrication might delay Work.

1.7 SEQUENCING AND SCHEDULING
A. Coordinate the work of this Section with the respective trades responsible for installing interfacing work, and ensure that the work performed hereunder is acceptable to such trades for the installation of their work.

1.8 PRODUCT HANDLING
A. Delivery and Storage: Deliver materials under protective cover and store within dry enclosed space.
B. Protection: Use all means necessary to protect materials of this Section during transition, before, during, and after installation and to protect installed work and materials of all other trades.
   1. Store under cover in a ventilated building not exposed to extreme temperature and humidity changes.
   2. Do not deliver casework to site until all concrete and masonry work is dry. Do not begin installation until veneer plaster has fully cured and is dry.
C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect, at no change in Contract Sum.

1.9 WARRANTY
A. General: Submit the following warranties under provisions of Section 01 78 00 - CLOSEOUT SUBMITTALS, and in compliance with Section 01 78 36 – WARRANTIES.
B. Provide manufacturer’s two year warranty against all defects in material or workmanship.

PART 2 - PRODUCTS
2.1 MANUFACTURERS
A. Basis of Design (Specify Manufacturer): To establish a standard of quality, design and function desired, Drawings and specifications have been based on New

B. Acceptable Manufacturers: Subject to compliance with the requirements specified herein, manufacturers offering products which may be incorporated in the work include the following, or approved equal:
   1. The Durcon Company, Inc., Plymouth MI.
   2. Epoxyn Products, Mountain Home, AR.
   3. Kewaunee Scientific Equipment Corporation, Statesville NC.
   4. Laboratory Tops, Inc., Taylor TX.

2.2 PERFORMANCE CRITERIA

A. Minimum tested performance criteria:
   1. Flexural Strength (tested per ASTM D790): 14,500 To 14,900 PSI.
   2. Modulus of Elasticity (tested per ASTM D790): 2,000,000 PSI.
   3. Compressive Strength (tested per ASTM D695): 33,500 To 38,100 PSI.
   4. Tensile Strength (tested per ASTM D638/D651): 6,400+ PSI.
   6. Water Absorption (tested per ASTM D570): 0.008 To 0.02% After 24 Hours.
   8. Flammability or Fire Resistance (tested per ASTM D635) did not ignite or self-extinguishing.
   11. Food and Splash Zone (tested per NSF/ANSI Standard 51): Approved.
   12. Fire Resistance - Smoke Developed Index (tested per ASTM E84): 8.71 (In) / 221.2 (Mm).

2.3 COUNTERTOPS

A. Countertops: 1 inch thick molded black color modified epoxy resin that has been especially compounded, oven cured and possess high resistance to mechanical and thermal shock.
   1. Tops shall be a uniform mixture throughout their full thickness and not depend upon a surface coating for chemical or stain resistance.
   2. Countertops 10 feet or less in length shall be seamless. When length of top exceeds 10 feet, seams may be provided parallel to the short dimension (Locate as shown on reviewed and accepted shop drawings). Limit seams to absolute minimum number.

2.4 SINKS

A. Sinks, General: Molded of same material as countertops, size as indicated on Drawings, with all inside corners coved and bottom pitched to drain outlet.
1. Construction: Drop-in type sink with tapered side of sink and inside corners radiused. Pitch bottom of sink to drain. Provide undermount for sinks that exceed constraints for drop-in sinks and as otherwise indicated on Drawings.

2. Provide modified epoxy resin outlets. Seal around the drain with epoxy sealant as recommended by the sink manufacturer.

3. Apply sink basins to countertops and ship as integral one piece unit.

4. Provide sink supports as required for specified sinks.

5. Provide one overflow for each sink.

6. Size: Refer to Drawings.

2.5 ACCESSORIES

A. Sealant, for joints between countertops and dissimilar materials: Joint Sealer Type ‘SM’ as specified in Section 07 92 00 - JOINT SEALANTS.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect all surfaces and verify that they are in proper condition to receive the work of this Section.

1. Carefully examine the installed work of others and verify that such work is complete to the point where this installation may properly commence.

2. Verify adequacy of backing and support framing: Coordinate with the General Contractor/Construction Manager to verify that required backing and reinforcements are in place, secure, and accurately located and that project is ready for the installation of the laboratory countertops.

B. Proceed with work when conditions permit Work to be installed in complete accordance with the original design, accepted submittals, and the manufacturer’s written instructions.

C. In the event of discrepancy, immediately notify the Architect in writing. Do not proceed with the installation in areas of discrepancy until issues have been resolved.

D. Beginning of installation means acceptance of project conditions.

3.2 INSTALLATION

A. Counter top lengths shall be fabricated as specified and indicated on the drawings with ends abutting tightly in a hairline joints, single true plane, smooth and level with no raised edges at the joints with supports place to prevent deflection. All joints are to be sealed with corrosion resistant sealants.

B. Make field jointing in same manner as factory jointing using dowels, splines, adhesives, and fasteners recommended by manufacturer. Locate field joints as shown on accepted submittal drawings. Joints shall be factory prepared requiring no job site processing of top and edge surfaces.

C. Tops shall be anchored to base cabinets. Secure tops to cabinets/supports with concealed “Z” type angles or equal fastening devices spaced no more than 24
inches on center, with one located within 6 inches of front and back edge. Tighten according to manufacturer’s written instructions to exert a uniform heavy pressure at joints. Countersink exposed heads approximately 1/8 inch and plug flush with material equal in chemical resistant, color, harshness and texture to adjoining surface. Where work surface in intended to be moveable use a clamping device that is removable. Counter tops to be installed with a maximum 1/8” gap. Secure epoxy countertops to cabinets with epoxy cement, applied at each corner and along perimeter edges at not more than 48 inches on center.

D. Provide holes and cutouts as required for equipment and service fittings and fixtures. Verify size of opening with actual size of item to be used, prior to making openings. Form inside corners to a radius of not less than 1/8”. After cutting, rout and file cutouts to ensure smooth, crack-free edges. Seal exposed edges after cutting with a chemical resistant sealer recommended by the manufacturer.

E. Provide scribe moldings for closures at junctures of countertop, curb and splash with walls as recommended by manufacturer for materials involved. Match materials and finish to adjacent laboratory casework. Use chemical-resistant, permanently elastic sealing compound where recommended by manufacturer.

F. Carefully dress joints smooth, remove surface scratches and clean entire surface.

3.3 CLEANING

A. Clean work under provisions of Section 01 73 00 – EXECUTION.

B. Repair or remove and replace defective, damaged or soiled work to match original factory finish.

C. Clean finished surfaces, including wiping of drawers and cabinet shelves, touch up as required.

D. Clean counter tops leaving tops free of grease and streaks. Use no wax or oils.

3.4 PROTECTION

A. Protect against soiling and deterioration during remainder of construction period.

B. Protect counter tops and ledges for the remainder of the construction period with 1/4” corrugated cardboard or equal completely covering the top and securely taped to edges. Mark cardboard in large lettering “No Standing”.

End of Section
APPROXIMATE LOCATION OF RTU 1, REFER TO MECHANICAL DRAWINGS.

APPROXIMATE LOCATION OF RTU 2, REFER TO MECHANICAL DRAWINGS.

03 45 00.11 MIN. 6'-0" BEYOND FOOTPRINT OF ROOFTOP UNITS

EXISTING EPDM ROOF TO REMAIN

APPROXIMATE LOCATION OF ROOFTOP EQUIPMENT AND PENETRATIONS.

SCOPE OF WORK

179 FORBES STREET, RIVERSIDE, RI 02915

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1/16" = 1'-0"
CASEWORK TYPES - ART & SCIENCE

1. 12 30 00 TO PROVIDE PLASTIC LAMINATE, STAINLESS STEEL, OR RESIN LABORATORY COUNTERTOPS AND BACKSPLASH FOR ALL CASEWORK IDENTIFIED ON PROJECT, U.N.O..
2. COUNTERTOP DEPTH MAY VARY FROM BASE UNIT DEPTH, COUNTERTOPS SHALL ALWAYS EXTEND TO WALLS BEYOND. VERIFY ALL CONDITIONS AND MEASUREMENTS IN FIELD, INCLUDING BUT NOT LIMITED TO WALL RADIUS.
3. G.C. TO FURNISH AND INSTALL GROMMETS AT COUNTERTOPS WHERE TECHNOLOGY/ELECTRICAL OUTLETS OCCUR.
4. PROVIDE LOCKS ON ALL CASEWORK UNITS, U.N.O..
5. PROVIDE SEAMLESS FILLER PANEL AS REQUIRED AND PROVIDE FINISH END PANELS ON ALL EXPOSED ENDS OR SIDES OF CASEWORK.
6. PROVIDE RUBBER BASE (09 65 13) ON ALL TOE KICKS AND EXPOSED SIDES OF CASEWORK.
7. WHERE IDENTIFIED ON DRAWINGS, CABINET UNIT SHALL BE INSTALLED 6 INCHES FROM WALL FOR PLUMBING CLEARANCE. COUNTERTOPS & FINISHED END PANELS ON UNITS WITH EXPOSED SIDES SHALL ACCOUNT FOR 6 INCHES IN ADDITION TO CABINET DEPTH AND RETURN TO WALL.
EXISTING SINK TO BE REMOVED ALONG WITH ALL ASSOCIATED PIPING, P-TRAP, STOPS, FAUCET & CONTROLS. REMOVE EXISTING WASTE PIPING, CUT BACK WITHIN 24" OF ACTIVE MAIN & CAP.

EXISTING GAS TURRET & ASSOCIATED GAS PIPING TO BE REMOVED IN ITS ENTIRETY BACK TO MAIN & CAP.

ETBR 1/2" HW & CW, 3/4" G DROPS. CONTRACTOR TO REMOVE BURIED PIPING FEEDS TO ISLAND SINKS.
1. REMOVE EXISTING UNIT VENTILATOR. EXISTING PIPING TO REMAIN & BE REUSED. REFER TO RENOVATION PLANS.

2. REMOVE EXISTING THERMOSTAT & CONTROL WIRING.

3. EXISTING FINTUBE TO BE REMOVED. EXISTING HWS & HWR PIPING TO REMAIN.
ADD-2

1. REMOVE EXISTING UNIT VENTILATOR. EXISTING PIPING TO REMAIN & BE REUSED. REFER TO RENOVATION PLANS.

2. REMOVE EXISTING THERMOSTAT & CONTROL WIRING.

3. EXISTING FINTUBE TO BE REMOVED. EXISTING HWS & HWR PIPING TO REMAIN.
**ROOFTOP UNIT SCHEDULE**

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**DUCTLESS SPLIT-TYPE AIR CONDITIONER SCHEDULE**

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**UNIT VENTILATOR SCHEDULE**

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**SOUND ATTENUATOR SCHEDULE**

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**CONDENSATE PUMP SCHEDULE**

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**ROOF INTAKE & RELIEF VENT SCHEDULE**

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**DIFFUSER, REGISTER & GRILLE SCHEDULE**

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<th>Job No</th>
<th>Qty</th>
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SEQUENCE OF OPERATION

1. If the supply or return fan status is not indicated within 30 sec of start command, a fan failure alarm is generated.

2. Economizer control shall use outside air for cooling requirements on sensing that the outdoor/exhaust dampers and open heating coil valve 100% when pressure exceeds set point.

3. Hot water control valve shall remain 30% open whenever unit is off and outdoor ambient humidity transducers and pressure sensors.

4. Low static pressure safeties.

5. Discharge air temperature is +/- 5°F from set point during occupied mode.

6. The exhaust fan shall be modulated to track airflow as sensed by fan inlet air flow measuring pressure sensors.

7. Provide high static and low static pressure controllers at the supply fan and at the exhaust fan.

8. Supply and exhaust fans shall run continuously. The fresh air damper and exhaust air damper shall remain 100% closed.

9. Outside air damper remains closed.

10. The ductless cooling unit shall run only upon demand from the setback set point controller.

11. The system shall remain de-energized. The fresh air damper and exhaust air damper shall open to minimum air portion. The recirculation damper module to match effectively longest duct run. The pressure sensor shall provide the error offset signal to its corresponding adjustable frequency AC drive P.I.D. controller. The controller shall adjust the fan to stop the system and signal an alarm if limit conditions are exceeded.

12. The condenser shall engage. The ductless cooling units shall engage. The onboard controls shall determine the optimal fan speed to maintain space occupied set point. Outside air damper modulates to maintain unoccupied heating discharge temperature set point. Fintube control valve shall modulate to maintain unoccupied heating discharge temperature set point of 60°F. If outdoor air is less than the condenser set point of 75°F, the unit shall engage to modulate in cooling mode.

13. If the condenser does not engage within 30 secs. a dirty filter alarm is generated.

14. Morning Warm-up:

   - Heated water is available and the space is occupied.
   - The set point is adjustable at the device and is set for 35°F. When temperatures below 35°F are sensed, the damper will be overridden to modulate open to introduce an increased amount of fresh air to reduce CO2 effect.

15. The set point is adjustable at the device and is set for 35°F. When temperatures below 35°F are sensed, the damper will be overridden to modulate open to introduce an increased amount of fresh air to reduce CO2 effect.

16. Cooling Cycle - "Occupied":

   - When the room temperature drops below 78°F, the supply fan will be de-energized. The cooling coil valve is adjusted to allow 100% outdoor air or 50% outdoor air with the remaining 50% recycled.

17. Cooling Cycle - "Unoccupied":

   - The system shall remain de-energized. The fresh air damper and exhaust air damper shall remain 100% closed.

18. The unit ventilators shall be furnished by the unit ventilator manufacturer with factory mounted and wired end devices, wired back to terminal strips in the control enclosure. Refer to unit ventilator specification for additional requirements.

19. The smoke detectors shall remain the responsibility of Division 26.