BID PACKAGE 2 - ADDENDUM NO. #1

DATE: May 13, 2020

PROJECT: SCHEUMANN FAMILY INDOOR PRACTICE FACILITY
BALL STATE UNIVERSITY
MUNCIE, INDIANA

PROJECT NUMBER: RATIO #19132 / BSU # 2019-049.01 SI

OWNER: Ball State University
2000 West University Ave.
Muncie, Indiana 47306
Phone: (765) 289-1241

ARCHITECT / LANDSCAPE ARCHITECT:
RATIO ARCHITECTS, INC.
101 South Pennsylvania Street
Indianapolis, Indiana 46204-3684
Phone: (317) 633-4040
Fax: (317) 633-4153

MEP ENGINEER:
Heapy Engineering
1400 West Dorothy Lane
Dayton, Ohio 45409
Phone: (937) 224-0861

STRUCTURAL ENGINEER:
FRP Structural Engineers
9449 Priority Way West Drive,
Suite 200
Indianapolis, Indiana 46240
Phone: (317) 872-8400

CIVIL ENGINEER:
Cripe
3939 Priority Way South Drive, Suite 200
Indianapolis, Indiana 46240
(317) 844-6777

LIFE SAFETY:
RTM Consultants, Inc.
6640 Parkdale Place
Indianapolis, IN 46254
Phone: (317) 329-7300

SPORTS GRAPHICS:
Section 127
1191 425 W South Street #127
Indianapolis, IN 46225
Phone: (317) 396-7300
This Addendum is issued in accordance with the provisions of Contract Documents, and becomes a part of the Contract Documents as provided therein. The information contained herein modifies the original Bidding Documents dated April 20, 2020 and all prior Addenda as applicable. Requirements of the original Bidding Documents and previous Addenda remain in effect except as modified by this Addendum. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

PART 1 – GENERAL CLARIFICATIONS

1. Pre-Bid Meeting Notes and Attendance attached

PART 2 - PROJECT MANUAL CHANGES

1. SECTION 002113 NOTICE TO BIDDERS
   a. Under Item A – Correct the following:
      i. Sealed bids to provide all equipment, labor, and material to complete a Ball State University Public Works project titled: Scheumann Family Indoor Practice Facility BP #2 will be received by Ball State University at Purchasing Services 3401 N. Tillotson Ave. Muncie, IN 47306. Until 11:00 A.M. EDT, Tuesday, June 2, 2020 Bidders can join the virtual opening by phone via: +1-415-655-0002 United States Toll Access Code: 795 057 494

2. SECTION 004100 BID FORM SUPPLEMENTS
   a. Under Appendix B – Alternatives Add the following:
      i. Alternate No. 9 Provide decorative CMU at the base of the Pre Engineered Metal Building.
      ii. Alternate No. 10 Provide sideline netting as shown in the Reflected Ceiling Plans.

3. SECTION 012300 ALTERNATES
   a. Under Item 3.1 Add the following:
      i. Q. Alternate No. 9 – Decorative CMU
         1. Base Bid: No Change
         2. Alternate Bid: Provide decorative CMU at the base of the Pre Engineered Metal Building as shown on elevations and detail C7/A-503.
      ii. R. Alternate No. 10 – Sideline Netting
         1. Base Bid: No Change
         2. Alternate Bid: Provide sideline netting as shown in the Reflected Ceiling Plans. Netting to be similar to end-zone netting.

4. SECTION 074213.23 METAL COMPOSITE MATERIAL WALL PANELS
   a. Under Item 2.2 – A. – 1. Add the following:
      i. g. SPS Corporation

5. SECTION 075419 – POLYVINYL-CHLORIDE (PVC) ROOFING

   Insert Item 2.2.A.1.b. as follows:
   “b. Carlisle Syntec Systems.”
Insert Item 2.2.C. as follows:

   1) Carlisle Surflex KEE HP.
   2) Thickness: 60 mils (1.5 mm), nominal.
   3) Exposed Face Color: White.”

6. SECTION 238124 DUCTLESS SPLIT AIR CONDITIONING SYSTEMS
   a. Replace the section in its entirety with the attached.

7. SECTION 213113 ELECTRIC DRIVEN CENTRIFUGAL FIRE PUMP
   a. Replace the section in its entirety with the attached.

PART 3 - DRAWING CHANGES

1. SHEET L-702 SITE DETAILS
   a. Detail A1 – Added clarifying linework and annotation text for rebar layout.
      Detail A4 – Removed callout referring to pavement overlay.

2. SHEET A-502 EXTERIOR DETAILS
   a. Added Detail D6 Scupper Details (Scupper, Conductor and Overflow Scupper)

PART 4 – GENERAL QUESTIONS

1. QUESTION: 3.5D2 - Do we need field drainage requirements
   RESPONSE: Field Drainage is not required

2. QUESTION: Bidders need information on font and size of logos, letter, numbers, banding and any other sports markings on the field
   RESPONSE: See attached sheet

PART 5 – ATTACHMENTS

A. Specification Section:
   1. SECTION 238124 DUCTLESS SPLIT AIR CONDITIONING SYSTEMS
   2. SECTION 213113 ELECTRIC DRIVEN CENTRIFUGAL FIRE PUMP

B. Drawings:
   1. SHEET L-702 SITE DETAILS
   2. SHEET A-151A FIRST FLOOR FIELD PLAN
   3. SHEET A-502 EXTERIOR DETAILS

END OF ADDENDUM NO. 1
Ball State University
Scheumann Family Indoor Practice Facility BP#2

Pre-Bid Meeting – May 6, 2020
Safety Moment

• Safety is paramount to Ball State University & Messer Construction
  Workers, Students, Athletes, Employees & Public!

• Key Safety Requirements - CM
  Messer EH&S Requirements & Safety4Site Program
  Messer 5S Program & Ground Penetration Requirements
  Ladders, Gloves, Job-Wide Huddles
  COVID-19 Requirements – CDC and OSHA Guidelines Reviewed
Agenda

- Introductions & Project Overview
- BP#1 Overview (Previously Bid & Awarded)
- BP#2 Overview
- Bid and Project Requirements
- Messer Prequalification
- Bid/Bidder Disqualifications (to avoid)
- Economic Inclusion
- Virtual Site Tour
- Questions & Answers
Project Team

- Kelly Knable, BSU Director of Construction
- Robert Ramey, BSU Campus Projects Construction Manager
- David Post, BSU Project Architect
- Brock Roseberry, RATIO Lead Designer, Building and Landscape Architect
- Jennifer Lasch, CRIPE Civil Engineer
- Garrett Mize, Heapy MEP Engineer
- Andrew Fordice, FRPStructural Engineer
- Jim Glasener, Messer Senior Project Executive CMc - PreCon and Procurement
- Josh Hughes, Messer Senior Project Manager CMc – Site Lead
Roll Call

• Send Josh Hughes an email if you are attending the call.

  • [Jhughes.operations@messer.com](mailto:Jhughes.operations@messer.com)

• This will be used for attendance of the Pre-Bid Conference.
Project Overview

- New Construction of an 85,500 sf Indoor Field Practice Facility
- Site Utility Relocations
- Rebuild of exterior practice field
- Projected construction timeline: April ‘20 – March ’21
- LEED Certification is being pursued
Bid Package #1 (Previously Awarded)

- Bid Categories
  - BC01 – Earthwork and Site Utilities
  - BC02 – Metal Building Systems, Structural and Misc. Steel
  - BC03 – Site Logistics and Enabling Electric Package
  - BC04 – Building Concrete
Bid Package #2

• Bid Categories
  - BC05 – Masonry
  - BC06 – Metal Panels
  - BC07 – Roofing
  - BC08 – Glass & Glazing
  - BC09 – Drywall & Metal Framing
  - BC10 – Resilient and Flooring and Tile
  - BC11 – Painting
  - BC12 – Indoor Field Turf
  - BC13 – Athletic Equipment
  - BC14 – Fire Suppression
  - BC15 – Plumbing
  - BC16 – HVAC
  - BC17 – Electric
  - BC18 – Asphalt
  - BC19 – Site Concrete
  - BC20 – General Trades
  - BC21 – Waterproofing
  - BC22 – Polycarbonate & Fiberglass Sandwich Panel Assemblies

We welcome combination bids. Bidders need to bid each Bid Category separately. If there are efficiencies with bidding multiple Bid Categories combo bids will also be accepted. Bidders need to only submit (1) set of financials.
Bid Package #2

• Documents
  Drawings and Project Manual dated 3/24/20
  Available electronically (no cost) at isqft.com
  Addendums will be published via isqft.com
  Documents can also be requested through Ball State via
  https://www.bsu.edu/about/administrativeoffices/purchasing/publicworks

• Key Dates
  Bidder Questions due by 5:00pm on 5/15/20 to jhughes.operations@messer.com
  Bids due by 11:00am on 6/2/20 to Purchasing Services 3401 N. Tillotson Ave. Muncie, IN 47306
  Bids will be opened via a Virtual Opening
Bid Package #2 (cont’d)

• Alternates
  As noted in Corresponding Sections, Bid Categories & Bid Form

• CM provides portolets & dumpsters
  Dumpsters for general refuse only
  Subcontractors are responsible for getting debris into dumpster

• Concrete washouts are to be provided by Bidders

• Seasonal conditions
  Site Concrete will need to account for winter conditions. *Winter Concrete – Includes hot water, any approved admixtures etc.* (CM will provide tent cover and ground thaw operations if necessary)
  Masons are responsible for winter conditions if needed (tent, heat, and additives)
  Interior temp conditioning will be by CM

• Initial Control established by others
  Any additional layout, fielding engineering, staking, etc. is by Subcontractor
Bid Package #2 (cont’d)

- Spoils are the responsibility of Subcontractor that generates them
- Dust Control
  Bidders are responsible for dust control measures associated with their scope
  Plan will be required at pre-award conferences
- Each Subcontractor shall be equipped with an iPad
  For use by Subcontractor site lead to receive and address Quality & Safety items
- Permitting
  State Release & Drainage Permits are by others
  *CM will have the general building Permit*
Bid Package #2 (cont’d)

- Schedule

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Bid Category – 05 Masonry

- Brick and block work at NW Elevation
- Cast stone
- Rigid insulation
- Final cleaning
- Joint sealants
- Alternate will be added for Water Table
Bid Category – 06 Metal Panels

- West Elevation
- Includes sealants
Bid Category – 07 Roofing

• Includes pre finished metal copings
• Includes flashing for penetrations
  - Tie off anchors
  - Plumbing vents
Bid Category – 08 Glass & Glazing

- Includes all aluminum framed entrances, storefronts and glazing.
- Installation of Hardware for openings (hardware provided by BC-20).
- Includes joint sealants.
Bid Category – 09 Drywall & Metal Framing

• All exterior and interior framing.
• Includes insulation (*within their framing*) with the exception of Scrim (*PEMB*) covered insulation and rigid insulation (*Mason*).
• Includes air and moisture barrier. (*Sheathing and Air Barrier behind masonry and metal panels*)
• Includes fire treated blocking and ½” sine curve corrugated metal roof similar to detail F3/A-520.
• Alternate for storage area on east side of building.
• *Includes access panels shown on drawings*
Bid Category – 09 Drywall & Metal Framing
Bid Category – 10 Resilient Flooring & Tile

- All flooring and tiling products.
- Includes resilient entrance mats.
- Includes minor floor prep.
Bid Category – 11 Painting

- Paint all exposed unfinished metals, drywall, plywood, etc.
- Caulking of door frames, fire ext. cabinets and casework.
- Do not paint scrim faced insulation.
Bid Category – 12 Indoor Turf Field

- Provide system from 99’-00” elevation to FF of 100’-0”
- Provide equipment requested in spec.
- Bid alternates on bid form.
- Complete 00 43 00 Appendix I – Synthetic Surface Field System Compliance Information.
Bid Category – 13 Athletic Equipment

• Gymnasium Equipment and Dividers
• Provide structural support for equipment. This support is to be coordinated with the Pre-Engineered Metal Building structure.
• *Alternate for side line netting*
Bid Category – 13 Athletic Equipment
Bid Category – 14 Fire Suppression

• Provide a complete Fire Suppression Scope
• Firepump room access is tight and will require in depth coordination.
Bid Category – 15 Plumbing

• Plumbing and HVAC are separate BC and must be bid separate. Combo bids will be accepted along with the individual bids if there are efficiencies.

• Access panels (*needed but not shown*) shall be provided to BC-09 contractor for install.
Bid Category – 16 HVAC

- Plumbing and HVAC are separate BC and must be bid separate.
- Access panels (*needed but not shown*) shall be provided to BC-09 contractor for install.
- Utilize alternates for controls pricing.
- Equipment pads are by site contractors.
- Pay attention to Bid Category descriptions for piping scopes.
- Includes RAU’s and Package Units.
Bid Category – 17 Electric

• Includes gen set.

• Includes site electrical items noted on sheet C501.
  - Excavation and tie in to ductbank. Shall include concrete work.

• Includes IT tie ins at Fisher Football Training Complex.
  - Date closet – overhead in corridor GT creates access
Bid Category – 18 Asphalt

- Milling and resurfacing of asphalt roadway.
- Millings to be diverted from a landfill.
- Striping and Parking Bumpers.
- Aggregate paving surfaces.
Bid Category – 19 Site Concrete

- All sitework concrete items
- Foundation for salvaged goal post
- Exterior equipment pads
- Power washing at project completion
- Caulking is to be included
Bid Category – 20 General Trades

• Blocking
• Casework
• Doors/Frames/Hardware
• Overhead Doors
• Louvers
• Div. 10 Items
• Site Furnishings
• Fencing and Gates
• SWPPP
• BP 1 Handoff items
Bid Category – 21 Waterproofing

• Foundation Waterproofing
• Coordinate with foundation contractor to get ahead of siding/masonry.
Bid Category – 22 Polycarbonate & Fiberglass Sandwich Panel Assemblies

- Polycarbonate Panel Assemblies
- Fiberglass-Sandwich-Panel Assemblies
- Includes joint sealants.
- Review Alternates
Bid Category – 22 Polycarbonate & Fiberglass Sandwich Panel Assemblies
Bid Requirements (see Bid Packet)

- Sealed envelope with label includes (2) copies (Please include Bid Category # and Company Name on Envelope)
- Must include completed bid package in its entirety.
  - Public Works Form 96 (Spec Section 00 41 13)
  - Plan and Equipment Questionnaire
  - Financial Statement
  - Bid Security (Not less than 5% of Total Bid)
  - Bid Form Supplements (Spec Section 00 43 00)
  - Appendix B Alternatives
  - Appendixes D through H Principal Subcontractors and Supplementary Information
  - Appendix I Synthetic Surface Field System Compliance
  - All Subcontractors must comply with E-Verify requirement
  - Representation and Certifications (Spec Section 00 45 00)
    - IDOA or INDOT certified for any contract over $300,000
  - Complete Appendix 7 – Bidders Checklist
  - MBE/WBE/Veteran Participation Plan (Spec Section 00 45 39)
Bid Requirements (see Bid Packet)

Alternates

- No. 1 – Decorative Metal Screens at Outdoor Equipment
- No. 2 – Structured Polycarbonate Panel Assemblies
- No. 3 – Second Condensing Unit
- No. 4 – Plywood at Storage Areas
- No. 5 – East Wall Storage Areas
- No. 6A through 6C – Alternate Sports Lighting Packages
- No. 7A through 7C – Temperature Controls
- No. 8A through 8E – Alternate Synthetic Turf Manufacturers
- To be Added via Addenda
  - Masonry Water Table
  - Side Line Netting
Bid Requirements  (see Bid Packet)

BID DELIVERY CHANGE

- Due to COVID-19 bids will be delivered to purchasing office. This information will be issued via addendum.
- Bid opening will have a call in number.
Project Requirements

• Tobacco on BSU property is prohibited

• BSU Drone Policy
  Authorization must be submitted to Office of Risk Management 14 days prior to any done flight.

• Contractor Parking is available at the Northside Middle School Parking Lot

• 5% Retainage will be held from all Subcontracts
Messer Prequalification Process

1. Complete contact information with Messer at www.messer.com/subcontractors
2. Within 24 hours you will receive a request for our prequalification form to be completed on iSqFt
3. Complete prequalification submission.
4. Notify the project team upon form completion.
Prequalification Documentation

- Latest year-end CPA-prepared financial statements
- Letter from your surety bond company indicating single job and aggregate capacity
- Safety plan, EMR and OSHA 300 logs
- Insurance Certificate
- Minority/Women Owned Business verification
Important: Bidder Disqualifications

Avoid these!

- **Failure to provide responsive and responsible Bid Proposal**
  - Bid not delivered to Purchasing Services by 11:00am on 6/2/20 in sealed envelope
  - Failure to use Bid Proposal packet as provided
  - Failure to complete all required portions of the Bid Proposal packet
  - Unauthorized additions, conditions, stipulations or other irregularities

- **Items associated with previous work with Owner**
  - Outstanding settlement with Owner
  - Default under previous contacts with Owner
  - Unsatisfactory work on previous contacts with Owner

- **Other**
  - Submitting more than 1 proposal from the same entity under same or different name
  - Evidence of collusion
Economic Inclusion Strategies

10% XBE Goal

• Certification by Indiana Department of Administration (IDOA)

• Diverse Vendor Utilization Plan to be included in bid
  If goal not met in Utilization Plan, Good Faith Effort required prior to award

• E.I. commitments and spend are monitored, tracked and reported (Monthly Utilization Form with Pay Apps)
Important Contact

For questions related to:

- Project Specific Details
- Vendor Registration/Prequalification
- Vendor M/WBE Certification and Vendor Database

Contact:
Josh Hughes
Senior Project Manager
jhughes.operations@messer.com

To get prequalified go to: www.messer.com/subcontractors
Virtual Site Tour
Questions & Answers
Project Team
Pre-Bid Meeting Questions for the Scheumann Family Indoor Practice Facility BP #2

#1. from Adam Taylor (privately):
Q. Hello June, will a copy of this presentation be available to attendees?
A. Yes, it will be available with Addendum #1.

#2. from Randy Hammond to everyone:
Q. Are there football goal posts required in Bid Cat 12?
A. No, the goal posts are incorporated with the netting.

#3. from Adam Taylor (privately):
Q. Regarding BC-12, are we to include the sub-base work in each Alternate?
A. Yes, sub-base work is to be included in each alternate.

#4. from Randy Hammond to everyone:
Q. Will there be any details for the logos and lettering.
A. Yes, these will be provided if they are not already in the documents.

#5. from Matt Clark to everyone:
Q. Is this a prevailing wage job?
A. No.

#6. from Randy Hammond to everyone:
Q. Is there a size for the lettering and logos
A. Yes, this will be provided if it is not already in the documents.

#7. from Shaun Greer to everyone:
Q. Is Messer bidding the General Trades?
A. Yes, Messer will be submitting a bid to BSU and competing against the market.
THANK YOU!
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SECTION 213113A - ELECTRIC DRIVEN CENTRIFUGAL FIRE PUMP

PART 1 - GENERAL

1.1 Complete fire pump assembly shall be provided as shown on the drawings and as specified. The assembly shall consist of fire pump, fire pump controller, jockey pump, jockey pump controller, alarms, automatic transfer switch, pump by-pass, and associated piping, valves and control devices.

1.2 The entire fire pump assembly and the installation shall conform to applicable standards set forth in NFPA 20 and local and state requirements. All components shall be UL listed and/or FM approved and must be acceptable to the authority having jurisdiction and the Owner’s insurer.

1.3 Control wiring shall conform to the applicable portions of Division 26, 27 and 28. All control wiring shall be by the Electronic Safety and Security Contractor. Control wiring from the emergency power generator to the automatic transfer switch shall be by the Electrical Contractor.

1.4 The location of the fire pump assembly components and the related piping arrangement shall be as shown on the drawings, unless otherwise directed or required, to provide required clearance per applicable NFPA and NEC standards.

PART 2 - PRODUCTS

2.1 Fire Pump Assembly:

A. The fire pump shall be horizontal centrifugal split-case motor-driven design and shall be complete with all required accessories such as coupling guard, casing relief valve and base plate. The driver shall be an ODP motor. Motor shall comply with NFPA 20 and 70. Pump capacity, pressure rating, motor horsepower and electrical characteristics shall be as noted on the drawings. At 150 percent of the rated capacity the pump shall develop at least 65 percent of the rated head and shall not be overloaded at any point on the curve. Use of motor service factor is NOT acceptable. Pumps shall be as manufactured by ITT-AC Allis-Chalmers, Aurora, or Fairbanks.

B. The fire pump controller and automatic transfer switch shall be specifically listed for electric motor driven fire pump service and shall be a factory assembled, wired and tested unit.
conforming to NFPA 20 and 70. The controller and transfer switch shall carry Service Entrance Rating and shall be of the combined manual and automatic type designed for reduced voltage starting. Reduced voltage starting type shall be solid state soft start. A mechanically interlocked isolating disconnect switch/circuit breaker shall be operable with an externally mounted handle. Circuit breaker shall have a minimum of AIC symmetrical fault current interruption capacity. The controller shall be microprocessor based and contain surge protection, a "power on" lamp; "start" pushbutton; "stop" pushbutton; "emergency run" mechanism; control circuit transformer; pressure transducer; minimum run timer with pilot light; "Pump / Motor Running", "Loss of Phase" and "Phase Reversal" and "Pump Failed to Start" alarm contacts wired to terminals to facilitate the installation of remote alarm signals. The controller shall be equipped with a programmable data logger with time/day stamp for each event and capable of storing up to 3,000 events/alarms. Events may be played back via the digital display or be downloaded to a flash disk via a USB port located on the micro-processor. Means for reading all line currents and voltages shall be provided on the exterior of the controller. The automatic transfer switch shall be compatible with the emergency power source and shall be microprocessor based with LCD display and include mechanically interlocked isolating disconnect switch/circuit breaker, indicating pilot lights, selector switch for testing, “Controller Connected to Alternate Power Source” alarm contacts wired to terminals to facilitate the installation of the remote alarm signals; and auxiliary contacts in accordance with NFPA 20. The controller and the automatic transfer switch shall be housed in a NEMA Type 2 enclosure arranged for wall / floor mounting. The controller shall be completely assembled, wired and factory tested by the controller manufacturer. The equipment shall be as manufactured by Cutler-Hammer, Firetrol, Metron, Master, or Tornatech. Limited service controllers are not acceptable.

C. The Contractor shall affix a permanent label to the jockey pump listing capacity, pressure rating, motor horsepower, and electrical characteristics.

D. Provide a jockey pump to maintain pressure in the fire protection system, including the following:

1. Jockey pump shall be vertical multistage centrifugal type.
2. Jockey pump shall have capacity, pressure rating, motor horsepower and electrical characteristics as indicated on the drawings.
3. Jockey pump shall be stainless steel, bronze, cast iron, or a combination thereof. Impeller and shaft shall be stainless steel.
4. Suction and discharge connections shall be of the same diameter.
5. Pump shall be equipped with mechanical seals, suitable for the full pressure and temperature range of the pump.
6. Furnish a relief valve on the pump discharge if the jockey pump shutoff (dead head) pressure exceeds the maximum system working pressure.
7. Jockey pump shall be as manufactured by Grundfos, Aurora, ITT-AC Allis-Chalmers, Armstrong, or approved equal.
E. The jockey pump controller shall include a full voltage magnetic starter, fusible disconnect switch (with fuses), overload relay, control circuit transformer, H-O-A selector switch, running period timer and pressure switch mounted in a NEMA 2 enclosure.

1. The jockey pump controller shall be as manufactured by Cutler-Hammer, Firetrol, Metron, Master, or Tornatech.

F. Low suction pressure sustaining valve, cast iron body and brass, bronze and stainless steel trim, flanged ends, hydraulically operated, pilot-controlled, diaphragm-type, globe or angle style. Valve shall be rated for 300 psi working pressure, be FM Global approved and factory set at 10 psig. Low suction pressure sustaining valve shall be Watts Model ACV 116-1FM, Cla-Val 50B – 5KG or equal by Zurn Control Valves.

G. Provide a factory assembled, wired and tested remote alarm panel built into the fire pump controller.

1. The remote alarm panel shall provide individual visual alarms and a common audible alarm for fire pump “Pump / Motor Running”, “Loss of Phase and / , “Phase Reversal” and /, “Pump Failed to Start” and “Controller Connected to Alternate Power Source” conditions. The remote alarm panel shall include a manual fire pump start push-button.

2. The remote panel shall be UL listed or CSA certified and FM Global approved, constructed to conform to NFPA 20 and 70 requirements. Panel construction shall be surface / flush mounted NEMA 2 / NEMA 4X / NEMA 1 / ____ type with red / stainless steel / ______ finish. Visual indicators shall be red pilot lights which remain illuminated until the alarm condition is corrected. The audible alarm shall include a silencing button, however, subsequent alarm conditions shall reactivate the audible alarm. A push-to-test button shall manually test all alarm indicators. The alarm panel power supply shall be 220 – 240 volt.

3. The remote alarm panel shall be handed over to the Electrical Contractor for installation. All final alarm status and adjustments shall be the responsibility of the Fire Suppression Contractor. All alarm wiring shall conform to applicable portions of the Electrical Specifications. All alarm wiring shall be by the Electrical Contractor.

4. The remote alarm panel shall monitor and alarm (audible and visual) the condition of the supervisory circuit, that the controller is in a motor running condition, that a loss of power has occurred on the line side of the motor-starter, that phase reversal has occurred on the line side of the motor starter and that the fire pump controller has been transferred to the alternate power source. Panel housing and manufacturer shall be same as the fire pump controller.
H. The fire pump hose valve test connection shall be wall mounted flush type equal to Potter-Roemer 5860 Series with inlet size and number of outlets required based on the rated GPM of the fire pump. Each outlet shall be fitted with a male snoot, cap and chain and removable swivel hose gate valve. Construction shall be all bronze. Exposed surfaces shall be polished chrome plated. The test connection shall be labeled “Pump Test Connection”. Refer to Section 21 11 13 Facility Water Distribution Piping for piping to free standing fire pump test connection.

I. The fire pump hose valve test connection shall be furnished by the fire pump supplier. Inlet size and number of outlets required shall be based on the rated GPM of the fire pump. Each outlet shall be fitted with an angle hose valve, cap and securing chain. The header shall be mounted, with a shutoff valve, connected to the pump discharge piping.

PART 3 - EXECUTION

3.1 Installation shall include all necessary accessories (individual sensing lines for fire and jockey pumps, shutoff valves, relief valves with piped discharge, pressure sustaining valves, pressure gauges, etc.) and shall be tested in accordance with the standard rules and regulations of the authority having jurisdiction, NFPA guidelines, and Owner’s insurer.

3.2 Provide all drain piping from pump, controller test solenoids, relief valves, manual drains, etc.; extended to a floor drain in such a way so that it is not a trip hazard. Piping material shall be Type “M” copper with standard wrought copper fittings and solder or press type joints.

3.3 Fire pump supplier to conduct a preliminary system check-out prior to the scheduled pump test. The Fire Suppression Contractor shall be informed of any needed corrections/changes required to the pump system so that such changes can be accomplished before the actual pump test.

3.4 Fire pump test connections shall have “Pump Test Connection” label cast in the escutcheon plate. Install a manual drain valve extended to a floor drain near fire pump for draining piping to test connection.

3.5 Notify the Architect, Engineer and Owner of all scheduled tests and adjustments at least 72 hours in advance. The Architect and Owner will witness all tests as well as the local fire department representative and the Owner’s insurer. If any test or adjustment is not performed with the Architect or Owner present, or if proper notification is not given, Contractor shall perform the test or adjustment again, at his own expense, with the Architect present.
and Owner present.

END OF SECTION 213113A
SECTION 238124 – DUCTLESS SPLIT AIR CONDITIONING SYSTEMS

PART 1 - GENERAL

1.1 Each ductless split air conditioning system shall consist of an indoor fan-coil module and an outdoor air-cooled heat pump/condensing unit. The fan-coil modules shall be arranged for ceiling or wall mounting as shown on the drawings, with direct air supply to and return from the room. The outdoor units shall be mounted outside as shown on the plans. Each indoor unit shall be connected to a dedicated outdoor unit.

1.2 Refer to the HVAC drawings for capacities and performance data.

1.3 Refer to the Division 23 and 26 drawings and specifications for electrical power feeds. Compare unit requirements to feeder sizes shown. Refer to 23 05 13 Electrical Requirements for HVAC Equipment.

1.4 Equipment shall carry an all-inclusive manufacturer’s parts and labor warranty for a period of two (2) years (5 years for compressor and related refrigerant system) from date of final acceptance or date of beneficial use, as agreed to between Contractor and Architect. Any materials, equipment, or controls found to be defective during this warranty period shall be made good without expense to the Owner, including any required replacement of fluids, glycol or refrigerant. The warranty shall include a delayed start-up provision such that the warranty does not begin at time of delivery. The labor for the warranty shall be performed by the manufacturer’s authorized service agent.

1.5 Mechanical equipment, appliances and supports that are exposed to wind shall be designed and installed to resist the wind pressure determined in accordance with the building and mechanical code. Refer to specification 23 05 30 Bases and Supports for HVAC Equipment for additional requirements.

PART 2 - PRODUCTS

2.1 Each indoor fan-coil module shall consist of:

A. Wall hung or ceiling hung architectural style cabinet, or ducted concealed, as indicated on the drawings.

B. Air filter shall be an easily removable washable filter.

C. Evaporator fan section shall consist of a direct drive fan with three-speed motor. Motor shall have integral overload protection.
D. Evaporator coil shall be refrigerant type with copper tubes with inner grooves and aluminum fins and a condensate drain pan. Refrigerant flow from the condenser shall be controlled by metering orifice. Provide integral condensate pump.

2.2 Each air cooled condensing unit shall be designed for remote exterior mounting. Each unit shall consist of:

A. Inverter driven, variable speed rotary type, pressure safety switches, sight glass, moisture indicator and accumulator, and service valves with charging ports. Compressor shall carry an extended 5-year warranty.

B. Direct driven propeller fan, horizontal discharge variable speed motor, copper tube and aluminum fin condenser coils, aluminum cabinet and wire guard on fan discharge.

C. Control panel, factory wire and tested, with transducers for fan speed head pressure control, thermostat and control circuitry. The fan speed head pressure control system and/or wind guard shall provide positive start-up and cooling operation down to 0 °F ambient temperature.

2.3 Control system shall be microprocessor based with hard wired wall mounted monitor panel (thermostat), to afford system control, monitoring and alarming. The panel shall have an operator interface and LCD display.

A. Controls shall include:

1. Temperature control, setpoint, and sensitivity adjustment and temperature anticipation.
2. Compressor short cycle control.
3. Automatic system restart after power failure with adjustable time delay.
4. Automatic switch over between heating and cooling.

B. Monitoring shall include:

1. On-off indication.
2. Fan speed indication.
3. Readouts of temperature, day and time.
4. Operating mode indication (cooling, heating).

2.4 Refrigerant Piping

A. Refer to other sections for requirements.

B. Pipe arrangement, devices and sizing information shown on the drawings is limited due to variations in equipment manufacturers’ requirements. The equipment supplier shall prepare project-specific drawings of each piping system showing numbers and sizes of piping, devices.
and accessories, coil circuitry, traps, double suction risers and other such detail required for the application shown on the drawings and as specified herein. Drawings shall be submitted to the Engineer for review with the equipment shop drawings.

C. The equipment supplier shall provide piping installation instructions to the Contractor and supervision as needed to insure that the piping system is installed in accordance with the equipment manufacturer’s recommendations.
PART 3 - EXECUTION

3.1 The fan-coil module, condensing unit, piping, controls and accessory items shall be installed in accordance with the manufacturer’s instructions. Locate the equipment so as to afford adequate service space. Wall mounted units shall be mounted with factory supplied mounting plates.

3.2 Refer to the drawings for mounting of the heat pump condensing unit and routing of refrigerant piping.

3.3 Trap per manufacturer’s instructions and extend condensate drain pipe to spill over floor drains as shown on drawings.

3.4 Installation shall be done by a factory certified contractor. Each system shall be checked, started, tested and adjusted by a factory trained service agent of the manufacturer prior to operation, and a start-up report shall be provided.

3.5 Furnish and install all controls, wiring and accessories for a complete and operational system.

3.6 The outdoor units, indoor units, piping, controls and accessory items shall be installed in accordance with the manufacturer’s instructions. Locate the equipment so as to afford adequate service space.

3.7 Outdoor units shall be secured to roof equipment rails attached to the roof deck / structure and flashed into the existing roofing system. All bases and curbs for roof mounted equipment shall be constructed and attached to the roof deck / structure such that installed equipment can withstand 125 mph wind loads.

3.8 Piping connecting to outdoor equipment shall utilize flexible connectors.

END OF SECTION 238239