

SECTION 280507.23 – UNINTERRUPTIBLE POWER SUPPLIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Uninterruptible Power Supplies (UPS's)
- B. Power Distribution Units (PDU's)

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Related Drawings:
 - 1. IT – Technology Drawings

1.3 SUMMARY

- A. The devices and installation described in this section shall be procured and installed shall match the construction phasing of this project. All is described within the phasing schedule.
- B. All manufacturer warranties shall start from the installation date and not necessarily the purchase date.
- C. Section includes the UPS and PDU's procurement, installation into the designated Data room and racks described on the IT drawings.
- D. These devices should support the Network electronics and servers provided by others.
- E. All 19-inch mounting rack and cabinets have been provided by others and are already installed in the facility.
- F. The installation integrator awarded this section shall be responsible for the following:
 - 1. Procure UPS's and PDU's.
 - 2. Deliver to the facility address.
 - 3. Coordinated delivery with the construction manager and owner.
 - 4. Install network cards, sensors and other ancillary products defined on the bill of material.
 - 5. Install devices within the designated data room(s) as defined on the IT drawings.
 - 6. Mount devices into the existing data racks per manufacturers requirements and in locations shown on the IT drawings.
 - 7. Power devices to determine devices are in proper working order.
 - 8. Discard of all packing material from the project site.

1.4 APPLICABLE STANDARDS

- A. All of the work within the scope of this bid shall be performed in accordance with the applicable state, county and city laws and ordinances. The contractor awarded this section shall be able to obtain all permits and licenses as required in addition to being a licensed contractor. All materials, supplies and equipment being furnished shall be installed in accordance with the latest version of the applicable standards of:
 - 1. OSHA
 - 2. Uniform Building Code
 - 3. Americans with Disabilities Act (ADA)
 - 4. Components of the system shall be of the type approved by Safety and Regulatory Agencies including:
 - a. Underwriters' Laboratories (UL), Inc.
 - b. Federal Communications Commission (FCC).
 - c. Agency approvals and UL Listing declare the system's design, components, and installation shall meet the highest standards.
 - d. System installation shall comply with UL 681 and UL 611.
 - 5. All circuits and equipment shall be installed and protected according to the National Electric Code and any applicable local requirements.

1.5 SUBMITTALS

- A. Pricing for all devices shown within Article 2.2 – BILL OF MATERIAL BOM must be filled out and submitted with this bid proposal and shall include all unit and total pricing.
- B. Product Data: For each type of product indicated. Include dimensions and data on features, performance, electrical characteristics, ratings, and finishes.
- C. Product Data: Submit manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.
- D. Samples of manufacturer's standard and extended warranties.
- E. Operation and Maintenance Data: For devices listed within this specification.

1.6 QUALITY ASSURANCE

- A. Single Source Responsibility: Obtain all materials from one (1) source from a single approved manufacturer for each product required within this specification.
- B. All devices procured and delivered as part of this specification shall be new from the manufacturer. Refurbished devices will not be accepted for this project. The technology consultant will verify all devices prior to delivery and installation of all devices described within this specification.

- C. The contractor's Quality Assurance Inspector shall conduct a visual inspection of all installations to verify that the installations are in accordance with this section and the manufacturer's specifications. Records of the inspections signed and dated by the Quality Assurance Inspector shall be provided to the technology consultant. The technology consultant shall be notified by the contractor of any inspection(s) and the technology consultant may elect to participate in any inspection(s). All QC information shall be provided to the owner upon completion.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Take care in handling products in accordance with manufacturer's instructions.
- B. Store indoors in original undamaged packaging, in a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity. Store products upright in secure, protected area. Verify with the manufacturer that site conditions are acceptable before receiving material.
- C. Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:
 - 1. Interior, Controlled Environment: System components installed in temperature-controlled interior environments shall be rated for continuous operation in ambient temperatures of 36 to 122 deg F (2 to 50 deg C) dry bulb and twenty to ninety percent (20-90%) relative humidity.

1.8 WARRANTY

Standard Manufacturer Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of any device and equipment related to operation, and equipment that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS

2.1 UNINTERRUPTIBLE POWER SUPPLIES (UPS's) & POWER DISTRIBUTION UNITS (PDU's)

- A. The selected manufacturer shall be EATON.
- B. Other manufacturers will NOT be considered for this product. The district has standardized this product and is expanding upon an existing infrastructure.
- C. These UPS's and PDU's shall be installed into 19-inch equipment, 2 or 4-post racks are existing and have sufficient rack space to mount these UPS's and PDU's.

2.2 UPS & PDU – BOM

#	MFG	PART NO.	PRODUCT DESCRIPTION	QTY
1	Eaton	9PX6KG2	Eaton 9PX G2 6kVA 5.4kW 208V Online UPS L6-30P or HW Input 2 L6-20R, 2 L6-30R, HW Output, Cybersecure Network Card 3U	3
2	Eaton	9PXTFMR5G2	APC Smart-UPS On-Line, 5kVA, Rackmount 5U, 208V, 12x 5-20R+2x L6-20R+1x L6-30R NEMA, Network Card+SmartSlot, W/ rail kit, W/ transformer 208V to 120V	1
3	Eaton	PDUMV30HV	Tripp Lite Series PDU Metered 208V / 240V 30A 6 C19 24; C13 L6-30P Vertical 0URM - vertical rackmount - power	4
4	Eaton	EMPDT1H1C2	Temperature & Humidity Sensor	2
5			Installation, Coordination with Trades, & Startup A/R	1

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine data room conditions, ceiling, and wall surfaces to assure they are in compliance with requirements and other conditions affecting installation and operation of all devices within this specification.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 SYSTEM INSTALLATION

- A. Comply with all manufacturers' recommendations and best practices.
- B. The contractor awarded this section shall deliver and unpack all devices specified within this document and dispose of all trash.
- C. All device locations must be coordinated and verified by the owner prior to actual installation.
- D. All devices within this specification must be installed per the manufacturer's recommended insulation specifications.

3.3 SYSTEM STARTUP

- A. The Contractor shall not apply power to the system until after:
 1. System and components have been installed and inspected in accordance with the manufacturer's installation instructions.

2. A visual inspection of the system components has been conducted to ensure that defective equipment items have not been installed and that there are no loose connections.
3. All system grounding and transient protection systems have been verified as properly installed and connected, as indicated.
4. Satisfaction of the above requirements shall not relieve the contractor of responsibility for incorrect installations, defective equipment items, or collateral damage as a result of Contractor work/equipment

3.4 FIELD QUALITY CONTROL

- A. Verify that accessories required for each unit have been properly installed, level and secured.

3.5 SECURE ATTACHMENT

1. To ensure proper attachment of Fixtures, Furnishings & Equipment items, including and Technology items, where "items" are attached to wall, ceiling, overhead structure, and/or floor, Contractor shall provide information adequate for architect to verify items, attached to wall, ceiling, and/or floor are attached securely and per manufacturer's recommendations. Architect's review may be implemented during submittal process.
2. Contractor shall provide struts, hangers, fasteners, safety harnesses, channels, bolts, screws, rods, etc. to securely attach items to existing structure as required to meet field conditions and meet applicable codes.

3.6 CLEANING

1. Remove rubbish and debris: Installation contractor shall not use the onsite dumpster and is responsible to discard their own debris off site.
2. Clean installed items using methods and materials recommended in writing by manufacturer.

END OF SECTION 28 0507.23

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TECHNOLOGY - Phase 3 of 3

SHERMAN SCHOOL RENOVATION PROJECT
SHERMAN SCHOOL CENTRAL ADMINISTRATION PROJECT
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