MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
POWER DISTRIBUTION UNIT

GR:TJS 1 of 2 APPR:EG:MS:03-31-23

a. Description. This work consists of furnishing, installing, and providing manufacturer warranty of an environmentally hardened Power Distribution Unit (PDU) and all communications cable, patch cords, and jumpers required to connect it to power and an Ethernet switch. Ensure the PDU is switched, allowing for the unit to power cycle individual receptacles remotely through the network.

b. Materials.

1. General.

A. Ensure the PDU has a minimum of 6 switched receptacles.

B. Ensure the PDU is rack mountable in a 19 inch rack or is a standalone configuration that is compatible with the enclosure shown on the plans.

C. Ensure the PDU has Simple Network Management Protocol (SNMP) V2 or V3 capabilities. Ensure the interface is registered jack (RJ)-45 10/100 megabits per second (Mbps) auto-negotiation, static and Dynamic Host Configuration Protocol (DHCP) IP addressable and have a Graphical User Interface (GUI) via a web browser that can be opened remotely for access and management of the PDU.

2. Electrical.

A. Ensure the PDU provides 120 VAC power to a minimum of six *NEMA 5-15R* receptacles.

B. Ensure the PDU is rated for a minimum of 15 amperes (A) at the breaker.

C. Ensure the PDU is powered by either AC or DC power. Any power conversion equipment required will be considered an appurtenance to the PDU and will not be paid for separately.

3. Environmental.

A. Ensure the PDU has an operating temperature range of -29 ºF to 165 ºF and a non-condensing humidity range of 5 to 90 percent.

B. Ensure components are made of corrosion-resistant materials, such as stainless steel, anodized aluminum, brass, or gold-plated metal.

c. Construction. Ensure all elements included in this special provision including power

and communication, complies with the standard specifications, this special provision, and any applicable state and local regulations.

1. Installation.

A. Ensure all cabling is labeled on both ends, bundled, and stressed.

B. Ensure the installation meets local and state electrical requirements, including grounding. Pay for grounding as covered under the 20SP-826A - Grounding, Bonding, Lightning Protection and Surge Protection for Electrical System Equipment.

C. Do not damage any part of equipment during installation. Ensure damaged parts or equipment are replaced at no additional cost to the contract. Repair is not an acceptable means of replacement. Ensure all equipment is replaced with new parts.

D. Mount the PDU in the cabinet on a *Deutsches Institut für Normung* (DIN) rail.

E. Ensure the PDU supplies power to ITS devices in a way that allows remote monitoring and control of receptacles for cameras, wireless radios, and any other devices requested to be integrated into the PDU by the Engineer. Ensure the individual circuits are able to be controlled and cycled separately.

F. Ensure the PDU is configured for access from the MDOT Transportation Operations Center (TOC) or head-end. Acceptance Testing must validate the remote power cycle of receptacles.

2. Testing. Configure and test in accordance with 20SP-826H – System Integration and Testing.

3. Warranty. Provide a manufacturer standard warranty (parts, software, and labor) of 3 years from the date of shipment with at least 2 years remaining at the state of burn-in. Furnish warranty and other applicable documents from the manufacturer, and a copy of the invoice showing the date of shipment to the Engineer prior to final written acceptance. Ensure all warranties are transferred to MDOT upon written final acceptance.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	**Pay Unit**
Power Distribution Unit	Each