MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
POWER SERVICE

ITS:EG 1 of 3 APPR:MDW:JVG:04-17-20
FHWA:APPR:04-23-20

a. Description. This work consists of furnishing and installing all items necessary to provide a complete and operating electrical service as specified herein. This includes, but is not limited to: the meter socket, service disconnects, fuses, conduit, weather heads, channel irons, meter racks, concrete foundations, and associated hardware necessary to provide a complete and operating electrical service as specified herein. A step-up or step-down transformer (if required per plans) is not included in this pay item and will be paid for separately.

b. Materials.

1. Provide materials in accordance with section 918 of the Standard Specifications for Construction, the *NEC*, and local utility company requirements.

2. Ensure disconnects meet *NEMA 250 Type 4X* requirements. Ensure voltage, ampere, and phase rating are sized as indicated on the plans. Ensure all disconnects used as service equipment are fusible and listed as such. Refer to plans if disconnect is used for purposes other than an electrical service is to be of fused or non-fusible type. Size the lugs in the disconnect to terminate the cable sizes as shown on the plans. Include disconnect switch handle with locking hasp capable of being locked in the “ON” and “OFF” position. Install one padlock, provided by the Engineer, for each switch. Equip the switch’s fuse clips with rejection feature and provide Class RK1 fuses rated as shown on the plans. Provide a phenolic plate secured to the door of the switch with stainless hardware or permanent adhesive and engraved with the device number and site address that it operates.

3. Provide meter sockets per the requirements of the local utility company.

4. For underground services provide a meter rack consisting of a solid concrete footing using grade 3500 concrete, channel irons, and angle brackets as shown on the plans.

5. For overhead services provide materials to fit up a wood pole (pole paid for separately) for secondary service, including a weather head, riser, and associated hardware.

6. Provide hot-dipped galvanized, cast iron, or stainless construction for all materials, including, but not limited to, channel irons, conduit fittings, conduit bodies, junction boxes, mounting hardware. Ensure all conduit is Polyvinyl chloride (PVC) schedule 80, Reinforced Thermosetting Resin Conduit (RTRC), Rigid Metal Conduit (RMC), or High-density polyethylene (HDPE). Ensure all field cut threads or untreated surfaces are coated with a zinc rich compound. Ensure all field wire terminations and lugs are coated with a non-oxidizing compound.

7. Provide product data of each type of product used (i.e. “Shop Drawings”) per the

Special Provision for Basic Materials and Methods for ITS Work for approval by the Engineer before work commences.

c. Construction.

1. For new metered services, furnish and install a new meter socket, service disconnects, distribution panels, conduit, and rack in accordance with the *NEC*, local utility company specifications, and as detailed on the plans. Use weatherproof hubs to enter all meters. Enter all other electrical equipment from the bottom.

2. For a "Power Service, Overhead," the local utility company provides the meter and aerial cable from existing distribution lines to the new wood pole and into the meter socket. The lowest point of the service lateral is to be 25 feet.

3. For a "Power Service, Underground," the local utility company provides the meter and underground cable from a new or existing utility feed to the new pedestal and into the meter socket.

4. Clear and trim trees and brush for the installation of the power service and associated elements, including the aerial or underground feed from the utility pole to the service pole. Perform trimming and clearing in accordance with the requirements of the utility provider. Dispose of debris from trimming and clearing using pre-approved methods per the standard specifications or as directed by the Engineer. Payment for tree or brush clearing and trimming and associated debris removal for the installation of power services is paid for under other items of work.

5. Ensure the final service location is confirmed by the local utility and approved by the Engineer before work commences.

6. Furnish and install one type D3-1 street name sign, as described in *MMUTCD Section 2D.38*, and attach to the meter or a wood utility pole alongside the meter, which displays the power service address, as determined by the local utility provider or the Engineer. Provide lettering on ground-mounted street name signs at least 6 inches high in capital letters, or 6-inch upper-case letters with 4.5-inch lower-case letters.

7. Provide a new electrical disconnect switch, meter socket, and meter rack at "Power Serv, Refurbish" sites to bring the sites up to current standards to be used for new ITS devices.

8. Warranty. Provide UL listed power service components with a standard manufacturer's warranty, transferable to MDOT. The power service components must carry a warranty (parts, software, and labor) of 18 months from the date of shipment. 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.

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

Pay Item	**Pay Unit**
Power Serv, Underground, __ AMP, __ V	Each
Power Serv, Overhead, __ AMP, __ V	Each

Safety Switch, Non-Fusible.....Each
Safety Switch, Fusible .....Each
Elec Rack.....Each
Power Serv, Refurbish, __ AMP, __ V.....Each

1. **Power Serv, Underground, __ AMP, __ V** is to be measured and paid for as each service disconnect fused at the specified amperes, meter socket, service entrance conductors, and associated conduit approaching the site underground, furnished, installed, and energized.

2. **Power Serv, Overhead, __ AMP, __ V** is to be measured and paid for as each service disconnect fused at the specified amperes, meter socket, service entrance conductors, and associated conduit approaching the site via aerial cable, furnished, installed, and energized.

3. **Safety Switch Non-Fusible** is to be measured and paid for as each electrical safety switch separate from the main power service rack, furnished, installed, and connected to the appropriate conductors.

4. **Safety Switch, Fusible** is to be measured and paid for as each electrical disconnect switch separate from the main power service rack, fused at the specified amperes, furnished, installed, and connected to the appropriate conductors.

5. **Elec Rack** is to be measured and paid for as each set of rack, posts, and foundation separate from the main power service rack, furnished, and installed.

6. **Power Serv, Refurbish, __ AMP, __ V** is to be measured and paid for as each existing service feed to be refurbished for use, fused at the specified amperes (within the electrical disconnect switch), furnished, installed, and energized.