

Special Specification 6386

Installation of Cellular Modem



1. DESCRIPTION

Transport, install, and test Department furnished Cellular Modems as shown on the plans, as detailed in the special specification, and as directed.

2. MATERIALS

The Department will furnish: Cellular Modems w/Power Supply.

Provide all materials not supplied by the Department necessary for the Cellular Modem installation. All materials provided by the Contractor must be new.

Unless otherwise shown on the plans, equipment for the Cellular Modems for this project will be stored by the Department for pick up at TxDOT El Paso District Office, 13301 Gateway West Blvd, El Paso TX 79928.

Ensure that all materials and construction methods necessary to complete the installation conform to the requirements of this Item, the plans, and the pertinent requirements of Item 620, "Electrical Conductors."

3. POWER REQUIREMENTS

Provide equipment appurtenances, as required, to ensure that operations are not affected by the transient voltages, surges, and sags normally experienced on commercial power lines.

- 3.1. **Wiring.** Provide wiring that meets the requirements of the National Electric Code. Provide wires that are cut to proper length before assembly. Provide cable slacks to facilitate removal and replacement of assemblies, panels, and modules. Do not double-back wire to take up slack. Lace wires neatly into cable with nylon lacing or plastic straps. Secure cables with non-adhesive clamps and anchors. Provide service loops at connections.
- 3.2. **Power Service Protection.** Provide equipment that contains readily accessible, manually re-settable, or replaceable circuit protection devices (such as circuit breakers or fuses) for equipment and power source protection. Provide and size circuit breakers or fuses such that no wire, component, connector, PC board, or assembly must be subjected to sustained current in excess of their respective design limits upon failure of any single element or wiring.

4. MECHANICAL REQUIREMENTS

- 4.1. **Connectors and Harnesses.** Provide external connections made by means of connectors. Provide connectors that are keyed to preclude improper hookups. Color code wires and appropriately mark origin and destination of each cable.
- Provide connecting harnesses of appropriate length and terminated with matching connectors for interconnection with the communications system equipment.
- Provide pins and mating connectors that are plated to improve conductivity and resist corrosion. Cover connectors utilizing solder type connections by a piece of heat shrink tubing securely shrunk to ensure that it protects the connection.

- 4.2. **Mechanical Components.** Provide external screws, nuts, and locking washers that are stainless steel. Provide parts made of corrosion resistant material, such as plastic, stainless steel, anodized aluminum, or brass. Protect materials from fungus growth and moisture deterioration. Separate dissimilar metals by an inert dielectric material.

5. INSTALLATION OF CELLULAR MODEMS

Install all materials, equipment, power, video, and control cabling. Ensure an operating and functional system.

Prevent damage to all Cellular Modem components supplied by the Department. Replace any component that is damaged or lost during transportation or installation at the Contractor's expense.

Testing. Verify operation of the Cellular Modems, together with operation of its links, demonstrate that data can be transmitted at a satisfactory rate from the field location to the central location. Demonstrate that the Cellular Modems data packets are being received at the central site via a networked computer.

Experience Requirements. The Contractor or designated subcontractors involved in the installation and testing of the Cellular Modems shall, as a minimum, meet the following:

Two-year experience in the installation of Cellular Modems.

Must have a minimum record of having installed two Cellular Modems where they have been in continuously satisfactory operation for at least 1 year. The Contractor shall submit as proof, photographs or other supporting documents, and the names, addresses, and telephone numbers of the operating personnel who can be contacted regarding the system.

Provide necessary documentation of subcontractor qualifications pursuant to contract award.

6. MEASUREMENT

This Item will be measured as each Cellular Modems made fully operational and tested.

7. PAYMENT

The work performed and material furnished in accordance with this Item; and, measured as provided under "Measurement," will be paid for at the unit price bid for "Installation of Cellular Modems." This price is full compensation for transportation and installation of all equipment described under this Item; furnishing and installing all cables, connectors, and mounting assemblies; all documentation and testing; and all labor, manipulations, materials, tools, equipment, and incidentals.