



Iowa Department of Transportation

SPECIAL PROVISIONS FOR WIRELESS INTERCONNECT SYSTEM

Pottawattamie County
IM-NHS-29-3(97)48--03-78

Effective Date
April, 2014

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

120162.01 DESCRIPTION.

A wireless interconnect system shall provide communication between two or more traffic signal controllers which are part of an interconnected traffic signal system by the use of radio. The wireless interconnect system shall include a gateway radio, which will be connected to the interconnected traffic signal system at either a local or a master controller, and one or more local radios, each connected to a local controller. Each local radio shall communicate two-way directly to the gateway radio.

120162.02 MATERIALS.

A. The wireless interconnect system shall have the following features:

1. License-Free, Frequency-Hopping Spread Spectrum Technology.
2. A Minimum Capability of up to 115 kbps Sustained Data Throughput.
3. Software for Radio Configuration.
4. Up To 20 Mile Range with Line Of Sight.
5. Built-In Set-Up And Diagnostics Capability.
6. Point-To-Point Operation.
7. Compatibility with Siemens M52 Controllers.

B. The wireless interconnect system shall include the following:

1. Two Wireless Interconnect Radios.
2. Radio Antennas.
3. Antenna Cables – 900 MHz with “N” Male connectors.
4. Impulse Suppressors.
5. Brackets, Mounting Hardware and Accessories Required for Installation.
6. RS232 Data Cable for Connection from the Radio to the Controller.

- C. As part of this system, the gateway radio shall be installed at I-29 NB/US 275 while a local radio shall be installed at Harry Langdon Boulevard/US 275.

120162.03 CONSTRUCTION.

- A. Each radio shall be mounted with as much height as possible in order to provide an unobstructed radio signal to the other radio of the two-way connection. Mounting hardware shall be provided by the manufacturer for each radio. Each radio shall be mounted inside a weatherproof enclosure.
- B. The Wireless Interconnect Radio shall be mounted as a Stand Alone Shelf Unit, a Weatherproof Pole Mount Unit or a Detector Rack Card Unit. The Radio shall have a RS-232 serial communication port.
- C. The vendor of the Wireless Interconnect System is responsible for site surveys of each proposed radio antenna location to determine if the wireless communication path is of acceptable quality and integrity for an operational wireless interconnect system.
- D. If a site survey determines that a proposed radio antenna location, as shown on the plans, does not meet the required quality and integrity for an operational wireless interconnect system, then the vendor shall perform additional site surveys until a radio antenna location can be found at an intersection that does meet the requirements. Tree trimming required to help clear a radio path shall be considered incidental to other pay items. An adjustment to a radio antenna location at an intersection shall be at no additional cost to the project, including the installation of additional radio antenna cables, if necessary.
- E. The wireless interconnect system shall be installed in accordance with the manufacturer's instructions.

120162.04 METHOD OF MEASUREMENT AND BASIS OF PAYMENT.

All costs for complying with this special provision shall be considered incidental to Temporary Traffic Signals. No separate payment will be made.