

SECTION 40 95 63

PROCESS CONTROL WIRELESS EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Provide process control wireless equipment as shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Division 01 - General Requirements of these Specifications.

1.2 SUBMITTALS

- A. Submit shop drawings in compliance with pertinent provisions of Section 01 33 01, including the manufacturer's detailed specifications.
- B. Submit operation and maintenance (O&M) manuals in compliance with pertinent provisions of Section 01 78 26.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01 66 11.

1.4 SPARE MATERIALS

- A. System Integrator of Section 40 90 10 to supply spare parts.
 - 1. Package spare parts and label packages with quantity, item description, and part number.
- B. Provide one spare radio.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Provide equipment to match and operate with existing radio system.
- B. Information provided within this Specification based on record drawing information from Wunderlich-Malec dated 02/11/13. Contractor responsible to verify the accuracy of this information and provide equipment as required for the existing system.
- C. Relocate the existing AMR equipment on the existing tank to the new tank.

2.2 SPREAD SPECTRUM RADIO

- A. Replace the existing radio system at the site for the new water tower to be compatible with the existing radio system. Provide two spread spectrum radios as currently utilized at the site.

PROCESS CONTROL WIRELESS EQUIPMENT 40 90 10-1 (LCPW-COUNTRYSIDE MANOR ELEVATED TANK)

- B. Provide spread-spectrum radio GE iNET-II industrial, unlicensed, wireless, serial and Ethernet radio.

2.3 SPREAD SPECTRUM ANTENNA EQUIPMENT

- A. Provide radio approved antenna equipment consisting of the following:
 - 1. One Omni Antenna.
 - 2. One Yagi Antenna.
 - 3. Antenna vertical pipe support and mounting hardware.
 - 4. Mounting hardware: 316 stainless steel.
 - 5. Antenna cable assemblies.
 - 6. Lightning arrester.
 - 7. In-line antenna filter (as required).
- B. Provide Omni-directional antenna Laird FG9026.
- C. Provide Yagi antenna Laird Y8966.
- D. Provide coaxial antenna cable with the following requirements:
 - 1. Foam Heliax with type N connectors.
 - 2. Acceptable manufacturers:
 - a. Times Microwave Systems LMR-900.
- E. Provide sites with coaxial lightning arresters inserted in the antenna coaxial feed lines.
 - 1. Acceptable manufacturers:
 - a. Polyphaser; IS-B50LNC-2.
 - b. Or equal.
- F. Provide the following accessories:
 - 1. Mounting and grounding hardware (aluminum or stainless steel).
 - 2. Connectors.
 - 3. Cable fittings.
 - 4. Antenna grounding.
 - 5. Acceptable manufacturers:
 - a. MAXRAD.
 - b. Decibel Products.
 - c. Or equal.

2.4 ANTENNA SUPPORTS

- A. Design radio antenna supports to hold antenna as specified or as recommended by the manufacturer.
- B. Provide building or structure antenna support with the following requirements:
 - 1. Galvanized or aluminum 2-inch diameter conduit pole with length as required to achieve final antenna height as shown on the Drawings.
 - a. Provide the necessary mounting and pipe bracket supports to install the pole.
 - b. Provide ground lug for grounding of pole.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install the radio telemetry system in accordance with manufacturer's recommendations.

PROCESS CONTROL WIRELESS EQUIPMENT 40 90 10-2 (LCPW-COUNTRYSIDE MANOR ELEVATED TANK)

1. Ground enclosures.
 2. Ground antenna with fully grounded vertical extension from the mast reaching to a height above the antenna such that a 30 degrees cone of protection is provided.
- B. Install antennae at suitable line of sight to achieve minimum -90 dB RSSI value between this site and the two existing remote sites. Submit RSSI values of installed system between master site and each remote site.
- C. Install ground rods and wire from antenna location to ground rod as specified in Section 26 05 26. Bond ground rods to electrical equipment grounding system.
- D. Install lightning arresters and filters in feed lines between the antenna and the transceiver.
- E. Building or structure antenna support:
1. Install poles at suitable spot on the tower as approved by the Engineer.
 2. Ground metal pole as specified in Section 26 05 26.
- 3.2 PROGRAMMING
- A. Program radio transceiver to meet system requirements.

END OF SECTION