



Trunked Radio Base Support System

P/N TRSBSSEC500.1

Trunked Radio Base Support System

Provide and install a trunked radio system tower and radio room support building. Includes: One (1) 140 feet of self-supporting tower located within 20 feet of cable entry to the radio room, (1) one 25 foot x 12 foot x 10 foot radio room shelter with Uninterruptible Power Supply (UPS) distributed power, "make before break" UPS transfer switch, transient voltage suppression equipment, R56 standard grounding including the HALO ground system, cable trays, wall feed throughs, exterior cable and ice bridge. Installation conforming to R56 standards, solution design, fabrication, installation, documentation and training are included. Foundation and grounding installations are based on favorable soil conditions with no water, rock or underground obstructions.

BASE SUPPORT TRUNKED RADIO SYSTEMS

Sample Site

The pre-installation planning for this sample site is defined below and presented in a format that can be considered a statement of work for all necessary items.

Radio Room/Tower Site

A SIGCOM furnished 140-foot self-supporting tower is recommended for a sample site. For the purposes of this specification, it is assumed that the tower will be located within 20 feet of the cable-entry port of the Radio Room.

Radio Room

Furnish and install Radio Room Shelter.

Furnish and install UPS, associated power distribution, make-before-break, and Transient voltage suppression equipment to include Halo ground.

Furnish and install Radio Equipment Room grounding.

Furnish and install cable trays (runways).

Furnish and install wall feed throughs.

Tower

Furnish and install a 140-foot self-supporting tower.

Furnish and install tower grounding.

Furnish and install exterior cable/ice bridge.

General Site Preparation

All site work will be performed in accordance with the Motorola *R56 Manual, Standards and Guidelines for Communication Sites*.

Radio Room Requirements

One (1) Radio Room shelter will be required at this site for housing the trunking infrastructure equipment. The proposed communications equipment will require one shelter with minimum dimensions of 25 foot x 12 foot x 10 foot high. The Radio Room should be suitable for the environment in which it will be located in order to meet R56 standards.

Lighting Requirements

General interior lighting specifications will be provided in accordance with Motorola's *R56 Manual, Standards and Guidelines for Communication Sites*.

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Site Grounding

Grounding will conform to the Motorola *R56 Manual*. Details regarding interior and exterior grounding systems can be found in chapters by the same name in this manual.

Cable Trays

Cable trays (runways) 18-inches wide (minimum) will be provided to run over the rows of trunked radio equipment racks. Also, an interconnecting perpendicular run to facilitate the RF cable between the Quantar Repeaters and the cable entry/exit port. All cable trays (runways) will be mounted approximately eight feet above the floor and a minimum of six inches above the equipment racks. One end of the cable tray will terminate approximately three to six inches above the cable entry/exit port.

Wall Penetrations

Cable entry port plates with 4-inch cable boots are provided for antenna cable entry into the Radio Equipment Room.

Tower Size and Type

The sample site will require a 140-foot self-supporting tower with solid-rod legs and solid structural members to assure long service life and eliminate dangerous internal corrosion. The tower should be installed within twenty (20) feet of the Radio Room.

A soil survey is required at the intended new tower location to determine tower foundation requirements, as well as whether the location is feasible for installing one (1) 140-foot self-supporting tower. The soil survey must be performed prior to the tower foundation design and installation to ensure the proper foundation and anchors are specified.

Tower/Antenna Grounding

Tower and antenna transmission line grounding is to be done in accordance with the Motorola *R56 Manual*. As required in this manual, earth ground should be five (5) ohms or less.

An external ground ring system will also be installed around the new communications tower. The external tower ground ring consists of #2 AWG or larger tinned solid bare copper wire that is Cadwelded to Copper-clad steel ground rods a minimum of eight (8) feet long and five-eighths (5/8) inches in diameter. The tower ground ring will also be bonded to the building ground ring via #2 AWG or larger tinned solid bare copper wire cad welded to a building ground rod.

Exterior Cable/Ice Bridge

An exterior cable/ice bridge will be provided for each site. One end of the cable/ice bridge will be attached near the 8-foot level on the tower while the other end will be attached to the radio equipment room above the cable entry port.

Note: Does not include trunked/digital radio equipment, antennas, antenna hardware or radio equipment cabling and mounting hardware.

The following items could create price adjustments to the proposed unit price.

1. Geo-Technical Report determines the cost of the concrete foundation. This report may result in unusual or unfavorable soil conditions, which creates additional cost to the contractor. Pricing is based on normal soil conditions with no water, rock, soil caving or underground obstructions.
2. Soil Resistivity Report determines the cost of the grounding system. This report may result in unusual or unfavorable soil conditions, which creates additional cost to the contractor.
3. Site Elevation Extremes determines the cost of site preparation for the site in general and for the shelter pad.
4. Site must be easily accessible for truck delivering shelter, steel tower, concrete, cranes, drill rigs and other equipment required to perform the job. Access to site must also be clear of overhead obstructions (power lines) for delivery and construction.
5. Special Fees and Permits are the responsibility of the customer.
6. Pricing is based on acquiring power within a 200-foot distance from the shelter and a clear unobstructed path. Items that limit excavation for electrical work include roadways, sidewalks, concrete, and rock.

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