Specifications for 50" Portable tower

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1.0 SCOPE

1.1 Identification.

This specification establishes the performance requirements for a 50' Mobile Tower.

1.2 System Description.

This system is an mobile tactical systems designed to rapidly set-up and quickly establish public safety communication services during the initial phases of deployment, and sustain those services throughout operations and redeployment. The services provided include: substitute for failed or damaged communication infrastructure during or after a disaster and providing communication assets during large scale events and/or venues where the public safety is a concern. This system will provide rapid restoration of basic communication operations during missions such as disaster response or other emergency and/or non-emergency operations.

2.0 General

2.1 Vendor Requirements.

2.1.1 It is the intention of these specifications to obtain standard, commercially readily available, equipment of a manufacturer regularly engaged in the design, manufacture and supply of this type of equipment, and who is experienced in its installation and use in a Public Safety agency, and further, who is knowledgeable with, and can comply with, all federal, state, local laws and codes governing this equipment.

2.1.2 Reliability, Maintainability, and Survivability are considered to be key requirements of this mobile antenna tower system. Hence, any system, system component, or part, which is custom, one of a kind or otherwise not readily available, is not acceptable. Further, any system, system component, or part, which is a prototype, new design, or other, which has not demonstrated reliable, dependable, and successful use in the field for at least three (3) years is not acceptable. Any equipment proposed which cannot be shown to meet these requirements shall be a cause for rejecting the bid.

2.1.3 Compatibility of any proposed equipment to any existing equipment is a firm requirement. The existing prime movers to move the mobile trailer mounted crank-up towers are equipped with a 2 5/16 inch ball hitch, with a seven pin industry standard electrical connection.

2.1.4 All work done, and all equipment supplied or furnished, shall meet all federal, state, and local laws and ordinances, such as, but not limited to, OSHA, EPA, ADEM, FCC, FAA, etc. The contractor is also expected to be knowledgeable of, familiar with, and to adhere to, requirements, guidelines, which may pertain to trailers, antenna towers, and trailer mounted antenna towers, among others.

2.1.5 The contractor, and any and all subcontractors he shall use, shall be fully insured, licensed and bonded to carry out all work required under this contract.

2.1.6 The contractor shall obtain any and all necessary permits required for the work, and coordinate with others, as necessary, to complete the work.

2.2 Order of Precedence.

In the event of a conflict between the text of this specification and the references cited herein, the text of this specification take precedence. Nothing in this specification, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3.0 SYSTEM REQUIREMENTS

3.1 Design, materials, and manufacturing processes.

Unless otherwise specified within these specifications, the design, materials, and manufacturing processes shall be the prerogative of the contractor as long as all articles submitted to the government fully meet the operating, interface, ownership and support, and operating environment requirements.

3.2 Operating Requirements.

Each System shall provide the following functional, operational, and performance capabilities.

3.2.1 Shelter

The System shelter shall provide the following, at a minimum:

- Permanently mounted shelter constructed of at least .125" thick 6063 T52 Aluminum box tubing with at least .090" thick 5052 H32 aluminum sheeting acting as an exterior skin. Centered over axels of trailer.
- Interior finished with laminated material with insulation for a value of R-18 or greater.
- Exterior of shelter is painted white with an automotive grade two-part paint/primer system
- Exterior dimensions at least 8' D L x 8'W x 7.8' H & Interior dimensions at least 7.58' D L x 7.58'W x 7.16' H

- Two 6' equipment racks (standard 19" relay rack configuration) mounted on both sides 2' from interior walls (4' clearance between the front of the racks)
- Roof mounted 15,000 BTU, 120 VAC, A/C and heating unit
- Dri-Dek Flooring for shelter
- Four (4) foot fluorescent captive bulb light fixture with wall switch to the left of entrance door
- Six Four-hole coaxial entry port mounted near the ceiling in the wall closest to the tower with weather-tight entrance
- Entrance door should be of standard size (2.6' x 6.66') to easily move equipment in and out of the shelter as needed

3.2.2 Electrical

- 12 kW (12 kVA) 60 Hz, single phase, diesel fueled, liquid cooled, 1800 RPM, electric start Generator with 24 hour external fuel storage tank, and a premium sound-attenuated ISO container.
- Electronic governor to control generator frequency with a protective cover
- Generator should be mounted securely to the trailer with easy access to components for maintenance
- Manual transfer switch that will allow connection of the shelter to either shore-power or generator power
- 50 foot long 50 amp(#10/4 wire) shore-power cord with a 50 amp RV connector
- Ground kit designed to protect the tower and equipment shelter from lightning
- Breaker panel mounted on the front wall in the corner nearest the generator, with a minimum of 20-20 amp circuit breakers (one for each outlet)
- Power surge protection device that will shut off power in case of over or under voltage problems.
- Provisions for 12VDC to maintain battery charge for generator starter moter, and tower motor.
- One (1) each, A-twist lock 120 VAC outlets mounted inside along each of the two sidewalls and back wall, within 6 inches of the center of the wall each outlet on a separate 20 amp breaker.
- One (1) each, 3-prong 120 VAC duplex outlets mounted inside along each of the two sidewalls and back wall, within 6 inches of the center of the wall with each outlet on a separate 20 amp breaker.
- One (1) each A-twist lock 120 VAC weatherproof duplex outlet mounted outside on the backside of the building with each outlet on a separate 20 Amp Breaker
- Two (2) each 3-prong 120 VAC weatherproof duplex outlet mounted outside on the entrance door side of the building no more than 2 feet from the door, and on the backside, with each outlet on a separate 20 amp breaker.

3.2.3 Trailer

- Hot dipped Galvanized steel dual axle heavy duty mobile communication trailer with four (4) wheel electric brakes
- (2) 7,000 lb capacity rated axles.
- (4) Minimum size of 16" 10 Ply tires and rims.
- One spare tire and rim with a lockable mechanism permanently attached to the trailer
- Aluminum diamond decking covering the entire deck area except the tongue section
- 2 5/16" - 8500# coupler & safety chains
- Leveling screw jacks 7000# capacity and outriggers designed to support the level trailer loaded to capacity
- Tongue jack designed to support the trailer while connected to vehicle
- Wheel Chocks and trailer coupler lock
- Seven (7) pin RV style removable electronic trailer connector
- Four (4) foot level
- 12 VDC Battery pack designed to supply power to electric motor used to crank up the tower and work lights
- Two work lights on extendable masts (120VAC) One to be located forward of the repeater shelter and one aft of the repeater shelter
- Two (2) coax cable reels with 100 feet of 5/8" low loss coax terminated with a male N-connector on both ends. One mounted on the left, and one on the right.
- Two (2) coax cable reels with 75 feet of 5/8" low loss coax terminated with a male N-connector on both ends. One mounted on the left, and one on the right.
- 12 VDC trailer tail, side and stop lights designed to meet federal and state highway safety requirements
- Entry steps designed for easy access into the shelter.
- Lockable aluminum storage box designed to hold grounding kits wheel chocks, level and tools.

3.2.4 Tower

- Lightweight heavy-duty aluminum crank-up tower, shall be capable of horizontal storage on the trailer and easily tilted to the vertical position; and then can be easily extended to the desired height
- Should extend to a minimum height of fifty (50) feet, but no more than sixty(60) feet consisting of at least three sections
- The tower will be self supporting and un-guyed.
- Ground kit designed to protect the tower, equipment shelter, and equipment from lightning, and to provide a ground for the equipment.
- Heavy-duty tilt base and supporting brackets and hold-down cables/brackets necessary to safely deploy trailer
- 12 VDC electric motor winch to tilt the tower to its vertical/horizontal position

- 12 VDC electric motor winch with control cable and cover designed to extend the tower to its full height
- Welded or permanently attached Mounting clips designed to support the coax cable running up the tower
- One (1) Quad antenna standoff mount, mountable to the top of the tower with all required hardware
- A fail safe mechanism that would automatically engage if the flexible cable or tower raising assembly should fail.
- Flashing 120VAC red light mounted near top of tower with 360 degree view and wire needed to operate light (if needed)