

MIL-S-62353(AT)
4 April 1983

MILITARY SPECIFICATION

SEMITRAILER, VAN: MOBILE TEMPEST

TEST SET (MTTS)

This specification is approved for use by US Army Tank-Automotive Command, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers a MTTS which consists of: (a) semitrailer housing rack mounted electronic equipment; two gasoline powered generators; shore power capability; and storage areas, and (b) commercial, fifth wheel equipped crewcab pickup truck. The MTTS is intended for worldwide use. Vehicles procured under this specification are commercial items which shall be warranted by the manufacturer as specified in procurement documents.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on the date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

GG-P-455

- Plates and Foils, Photographic
(Photosensitive Anodized Aluminum).

O-E-915

- Extinguishers, Fire, Dry-Chemical,
(Portable).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: US Army Tank-Automotive Command, ATTN: DRSTA-GBS.1, Warren, MI 48090, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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- MIL-P-514 - Plates, Identification, Instruction and Marking, Blank.
- MIL-A-8421 - Air Transportability Requirements, General Specification for.
- MIL-W-13518 - Wood Preservative: Tetrachlorophenol and Pentachlorophenol Surface Sealing Compound.
- MIL-P-21929 - Plastic Material Cellular, Polyurethane, Foam-in-Place, Rigid (2 and 4 Pounds per Cubic Foot).

STANDARDS

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- MIL-STD-171 - Finishing of Metal and Wood Surfaces.
- MIL-STD-209 - Slings and Tiedown Provisions for Lifting and Tying Down Military Equipment.
- MIL-STD-1223 - Non-Tactical Wheeled Vehicles Treatment, Painting, Rustproofing, Identification Marking, and Data Plate Standards.
- MIL-STD-1366 - Materiel Transportation System Dimensional and Weight Constraints, Definition of.

FEDERAL

- Fed. Std. No. 307 - Trucks, Light Commercial, Gasoline/Diesel Fueled, Two Wheel Driven (4x2, 3,000 to 11,000 Pounds GVW).
- Fed. Std. No. 595 - Colors.

HANDBOOKS

MILITARY

- MIL-HDBK-151 - Transportability Criteria.

(Copies of specifications, standards, handbooks, drawings, and publications required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issue in effect on date of invitation for bids or request for proposal shall apply.

DEPARTMENT OF TRANSPORTATION (DoT)

- Federal Motor Carrier Safety Regulations.
- Federal Motor Vehicle Safety Standards.

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(Application for copies should be addressed to the Department of Transportation, Federal Highway Administration, Washington, D.C. 20591.)

AMERICAN HARDBOARD ASSOCIATION.

PS 60-73

(Application for copies should be addressed to the American Hardboard Association, 20 N. Wacker Drive, Chicago, IL 60606).

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

National Electric Code

(Application for copies should be addressed to the National Electrical Manufacturers Association, 2101 "L" Street, N.W., Washington, D.C. 20037.)

SAE, INC.

SAE Standards and Recommended Practices

- J537 - Storage Batteries (DoD adopted).
- J551 - Performance Levels and Methods of Measurement of Electromagnetic Radiation from Vehicles and Devices (20-1000 MHz).
- J560 - Seven-Conductor Electrical Connector for Truck-Trailer Jumper Cable.
- J588 - Turn Signal Lamps.
- J682 - Rear Wheel Splash and Stone Throw Protection (DoD adopted).
- J689 - Approach, Departure and Ramp Breakover Angles.
- J700 - Fifth Wheel Kingpin - Commercial Trailers and Semitrailers (DoD adopted).
- J702 - Brake and Electrical Connection Locations (DoD adopted).
- J849 - Connection and Accessory Location for Towing Double Trailers and Multi-axle Trailers.
- J875 - Trailer Axle Alignment.
- J1067 - Seven-Conductor Jacketed Cable for Truck-Trailer Connections.

(Application for copies should be addressed to SAE, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.)

THE TIRE AND RIM ASSOCIATION, INC.

Year Book.

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(Application for copies should be addressed to the Tire and Rim Association, Inc., 3200 W. Market Street, Akron, OH 44313).

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

2.3 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 shall take precedence.

3. REQUIREMENTS

3.1 Standard vehicle and accessories. Except as specified in 3.1.1 through 3.1.1.11 the vehicle, components, assemblies, and accessories to be delivered under the contract shall be the manufacturer's standard or special items, which meet or exceed the requirements of this specification. The vehicle and all components shall be as represented and rated in the vehicle and equipment manufacturer's data. Commercial specifications, technical material and special drawings (including general assembly), necessary to identify the herein required vehicle and components, shall be furnished to the engineering offices of the procuring activity, prior to delivery of the vehicle.

3.1.1 Special requirements. In addition to the standard vehicle and components specified in 3.1, the semitrailer shall be furnished with special equipment as specified herein.

3.1.1.1 Space reserved.

3.1.1.2 Painting and marking. Treatment, painting, identification marking and data plates shall be in accordance with Army requirements of MIL-STD-1223, except as follows:

- (a) Exterior color shall be the manufacturer's standard white. Doors, side and end sheets shall have baked enamel finish. Anodized or bright finish aluminum panels are not acceptable.
- (b) The exterior color of visible steel members on the trailer body shall be painted black.
- (c) Vehicle identification markings shall not be furnished.

3.1.1.2.1 Semitrailer interior. Semitrailer interior, components and accessories shall be finished as indicated below. Color numbers refer to FED. STD. No. 595.

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- (a) Exposed wall portions: dark carpet (3.5.4).
- (b) Ceiling: semigloss white No. 27875.
- (c) Floor: dark carpet (3.5.4).
- (d) Equipment racks, storage cabinets, trim panels and storage units: Identical blue gloss as the equipment cases (see 3.8.1.2).
- (f) Electrical panels, switches, wireway and other electrical accessories, identical blue gloss as the equipment cases (see 3.8.1.2).

3.1.1.2.2 Plates, identification, instruction, warning, caution, danger and electrical. Plates shall be prepared in accordance with composition C of MIL-P-514. The type, grade and class of the plates shall be type I, grade B, class 1 of GG-P-455. At least the following plates as specified herein shall be furnished.

3.1.1.2.3 Semitrailer identification plate. An identification plate in accordance with MIL-STD-1223 shall be affixed to the semitrailer on the lower front corner of the curbside.

3.1.1.2.4 Electrical entrance receptacle warning plate. A warning plate shall be secured to the semitrailer above or below the electrical entrance receptacle (see 3.4.7.2.3). Minimum size of the plate shall be 5 inches wide and 3 inches high. Plate shall appear as follows:

WARNING
 USE ONLY 208/120 V, 50 AMP, 60 Hz, 3 PHASE POWER SUPPLY
 OR
 120 V, 100 AMP, 50/60 Hz, 1 PHASE POWER SUPPLY
 ALL ELECTRICAL CONNECTIONS SHALL BE MADE ONLY BY THE
 INSTALLATION FACILITY ENGINEER.

Letters shall be yellow gothic capitals on a black background. Voltages shall be black on a yellow background.

3.1.1.2.5 Wiring diagram. A wiring diagram of the semitrailer electrical system, except the intervehicular connections to the prime mover shall be attached to the inside of the power distribution panel door. Size of plate to be determined by contractor and requirement that diagram be large enough to be legible.

3.1.1.2.6 Miscellaneous plates. In addition to warning and instruction type plates specifically described above, applicable type plates shall be provided covering at least the following items:

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- (a) Manufacturer, model number, capacity in Btu/hr, motor data on the air conditioner and heating units.
- (b) Instructions on changing air filters and type and model required.
- (c) Location and load rating of tiedown eyes (locate near identification plate).
- (d) Use of leveling jacks and landing gear (locate near identification plate).
- (e) Fifth wheel coupling procedure (locate near identification plate).
- (f) Electrical connection hookup diagram for both types of hookups (see 3.1.1.2.4). Locate adjacent to warning plate (see 3.1.1.2.4).
- (g) "No step" plates located on the four roof corners and midway along the length of the roof.
- (h) "Only 50 Hz power available: For higher heating/cooling efficiency use generator" plate near HVAC control.

3.1.1.3 Electromagnetic interference characteristics requirements for equipment. The electromagnetic interference requirements for the prime mover, semitrailer, and all equipment shall be suppressed to limit electromagnetic radiation in accordance with SAE J551.

3.1.1.4 Wood treatment. Wood shall be treated in accordance with the requirements of MIL-STD-1223.

3.1.1.5 Rustproofing. Semitrailer shall be rustproofed in accordance with MIL-STD-1223, including the following areas:

- (a) Chassis frame members and chassis crossmembers.
- (b) Boxed-in areas such as lights, over the conduit, clips brake line metal tubing.
- (c) All exposed areas under the vehicle (for steel construction only).

The rustproofing shall be applied on all primed surfaces that are not finish painted and finish painted surfaces. The material may be applied using an atomized type of spray, pressure or be brushed.

3.1.1.6 Dissimilar metals. When parts of dissimilar metals are in contact, the contact faces shall be primed with a highly resistant alkaline resistant primer, mylar barrier tape, polyurethane sealant and adhesive or alumelastic compound to preclude galvanic and electrolytic action. Materials used shall be compatible to each other in accordance with MIL-STD-171.

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3.1.1.7 Transportability. The MTTs platform, at semitrailer gross weight, minus personnel and prime mover gross weight, shall be capable of being transported: (1) as one load roll on, roll off on all MAC prime mission cargo aircraft; (2) self-propelled on worldwide roads; (3) by rail; (4) by marine modes in accordance with MIL-STD-1366, MIL-HDBK-151, and MIL-A-8421. Class 3 multipurpose eyes in accordance with MIL-STD-209 for type II vehicles shall be provided with eye locations indicated. Eyes shall hold the MTTs platform under high wind loading conditions of 60 mph gusting to 80 mph.

3.1.1.7.1 Air transportability. The MTTs shall be capable of being driven in and out of the aircraft forward or backward as a single unit. Provision shall be made to uncouple and brace the semitrailer from the prime mover within the aircraft because of the g-forces experienced during air transport.

3.1.1.8 Rear wheel splash and stone throw protection. The semitrailer shall be provided with removable mud flaps at the rear of the rear wheels. Splash and stone throw protection shall be in accordance with SAE J682.

3.1.1.9 Fire extinguisher. Two fire extinguishers conforming to O-E-915, located as specified herein, shall be furnished. The extinguishers shall be located on the curb and street side of the semitrailer in an accessible location secured on the wall. The extinguisher shall be in accordance with type II, class 2, size 10, of the dry chemical type, having a U/L rating of 30B:C for class B and class C fires. Brackets with cam-type clamp shall be furnished.

3.1.1.10 Highway warning kit. A highway warning kit, including three emergency reflectors and four red flags shall be furnished. Highway warning kit shall conform to Motor Carrier Safety Regulations 393.95(f)(3), (i) and (k). Kit shall be located in the semitrailer gooseneck stowage compartment.

3.1.1.11 First aid kit. A first aid kit shall be furnished. The first aid kit shall conform to Motor Carrier Safety Regulation 393.96, type B, commercial type kit. The first aid kit shall be located in the interior of the semitrailer over the gooseneck area.

3.2 General design.

3.2.1 Federal Motor Vehicle Safety Standards. Semitrailer shall comply with all Federal Motor Vehicle Safety Standards and Federal Motor Carrier Safety Regulations in effect on the date of manufacture.

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3.2.2 Semitrailer empty weight. The semitrailer empty weight shall consist of the weight of the completed semitrailer, with all attachments, accessories, and installed equipment including the generators, fuel tanks, equipment racks, electrical components, etc.

3.2.3 Semitrailer payload. The rated payload capacity of the semitrailer shall be not less than 3800 under all operating and transport conditions pounds consisting of:

(a) Module 1	215 lbs.*
(b) Module 2	175 lbs.*
(c) Module 3	190 lbs.*
(d) Module 4	175 lbs.*
(e) Module 5	165 lbs.*
(f) Module 6	270 lbs.*
(g) Module 7	155 lbs.*
(h) Module 8	66 lbs.**
(i) Personal storage	250 lbs.
(j) Antennae storage	250 lbs.
(k) Gooseneck storage	300 lbs.
	<u>2211 lbs.</u>
(l) Future expansion (evenly distributed)	989 lbs.
	<u>3200 lbs.</u>
(m) Personnel	600 lbs.
Total payload	<u>3800 lbs.</u>

* Includes weight of mission equipment and case.

**Case weight only.

3.2.4 Semitrailer gross weight. The gross weight of the semitrailer shall consist of the empty weight plus a payload of 3800 lbs. The semitrailer gross weight minus personnel shall consist of the empty weight plus a payload of 3200 lbs. The semitrailer gross weight minus personnel shall not exceed the difference between the prime mover gross weight and the manufacturer's rated prime mover gross combination weight (GCW).

3.2.5 Ratings. The MTTs platform ratings shall be the manufacturer's publishing rating. Component and vehicular ratings shall not be raised to meet the requirements of this specification. When published ratings are not available, verification of ratings must be submitted to the engineering office of the procuring activity.

3.2.6 Dimensions. Semitrailer dimensions uncoupled from the towing vehicle, resting on the landing legs on the ground, and with the platform level, shall be as specified in table I. The overall length and width dimensions include bumper, side rails, etc.

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TABLE I. Dimensions.

Semitrailer length, exterior - 280" (max.)
 Width, exterior - 96 (max.)"
 Height, ground to roof top - 102"
 Clearance, floor to ground - 22"
 Working area length - 180" (min.)
 Curbside door width - 42"
 Interior height - 72".
 Overall MTTs platform length - 474" (max.)

3.3 Performance. MTTs platform performance requirements as specified in 3.3.1 through 3.3.6 shall be met by the semitrailer at gross weight minus personnel, completely serviced, coupled to the prime mover at gross weight, and towed over improved and unimproved, hard, uneven, terrain. The MTTs platform shall show no evidence of failure or malfunction of vehicle components, attachments, or accessories. The MTTs platform shall be capable of performance at minus 25°F.

3.3.1 Towing and trailing ability. The semitrailer shall follow the prime mover at sustained speeds of 60 miles per hour over dry, level, smooth, prepared hard surfaced roads and at not less than 15 mph over unimproved roads at semitrailer empty weight and semitrailer gross weight minus personnel. The semitrailer shall follow the prime mover without exceeding the tracking deviations specified in Motor Carrier Safety Regulation 393.70(e).

3.3.2 Turning ability. The semitrailer when coupled to the prime mover shall be capable of assuming an angle of 90 degrees to the towing vehicle without damage to the vehicle at semitrailer empty weight and semitrailer gross weight minus personnel. The turning radius shall not exceed 22 feet.

3.3.3 Braking ability. The service brakes of the semitrailer and the prime mover shall control, decelerate, and stop the MTTs platform in accordance with the Motor Carrier Safety Regulation 393.52 at semitrailer empty weight and semitrailer gross weight minus personnel.

3.3.4 Environmental control system. The environmental control system shall provide a temperature of 80°F db and 67°F wb within the semitrailer in an operational outdoor ambient temperature range of 0°F (at night) to +110°F (full sunlight) (-18°C to 43°C) within one hour with a personnel load of 4 men and total electrical load of 5000 watts. The temperature shall be controllable to within $\pm 3.6^\circ\text{F}$ ($\pm 2^\circ\text{C}$) when measurements taken throughout the semitrailer are averaged. The environmental control system shall include central HVAC equipment

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located in the semitrailer gooseneck, thermostatic controls, a discharge and return duct system, and a gasoline fueled heater as specified in 3.6.4.

3.3.5 Waterproofness. The semitrailer shall be waterproof as specified herein, to preclude entrance of water when exposed to a spray of approximately 55 pounds per square inch gage pressure, two feet from the vehicle. Water spray shall be projected on all sides, bottom and the roof. Under these conditions, the gaskets, seals, rivets and exterior lapped panels shall not show any evidence of water leaks. Means shall be provided to drain water to ground. Weepage of water shall not exceed 2 ounces per side between the exterior lapped panels. Weepage shall be considered as tear drops in not more than three areas per side. If the roof and sides are foamed, the roof shall be water tested prior to the installation of foam, and when the sides are foamed, the sides shall be water tested prior to foaming.

3.3.6 Air tightness. The semitrailer shall be air tight during transit to prevent dust entering the interior during normal operation. There shall be no temperature control during transit.

3.3.7 Approach and departure angle. The approach, departure, and ramp breakover of the MTTs platform angles shall meet the minimum requirements as specified in SAE J689. In addition, the MTTs platform shall have an approach, departure, and breakover angle sufficient to negotiate (forward and backing up) the loading ramp angle for a C130 aircraft or larger as described in MIL-A-8421.

3.4 Design and construction. The semitrailer shall be of the drop-type with a level platform rearward of the gooseneck. The semitrailer shall be equipped with an air conditioning and heating system, electrical control circuits, a curb side door and a gooseneck door as specified herein. The semitrailer, when in a static position, shall be supported with two adjustable landing gear assemblies.

3.4.1 Body. The body shall be of the chassis frame type.

3.4.1.1 Body framing structure. Body, underbody and roof framing shall be constructed of tubular steel or anodized extruded aluminum channel. Structural members shall be welded and reinforced at joints to fulfill the dynamic and static loading requirements specified herein. When splices are necessary, they shall be designed to avoid stress concentration. Splice welds shall be continuous. Welding material shall be compatible to the material being welded. Structural members shall be designed to accept the loads imposed by the factors specified. Body framing structure shall include at least the following: The

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roadside and curbside outermost longitudinal members at the roof level shall extend the full length of the vehicle; and shall be utilized to join full width roof bows spaced at not more than 24 inch centers. Roof bows with the same center-to-center dimension shall be employed to form an integral structure. Vertical members, consisting of corner and intermediate posts, shall be inserted between and employed to combine the roof structure to the chassis frame. The corner posts shall be one piece; without splice, between the roof structure and chassis frame; and shall be such as to present rounded corners on vehicle. The intermediate posts shall be continuous without splice between the roof structure and chassis frame except at door opening areas; and shall be spaced on not more than 24 inch centers except different intervals will be permitted at door opening regions. Diagonal horizontal members between the vertical posts may be used to add to the rigidity of the truss.

3.4.1.2 Floor pan. The pan shall be not less than (0.050 inches) in thickness of anodized aluminum alloy. The floor pan shall be secured on the underside of the frame members for the entire length of the trailer. The floor pan shall be water tight to prevent contamination of the insulation cavity.

3.4.1.3 Platform. The platform shall be flat rearward of the gooseneck except for the wheel wells. The platform over the gooseneck shall be flat, and shall be capable of accepting the loads imposed by the HVAC unit(s) and stored items.

3.4.1.4 Sub-floor. A sub-floor shall be provided above the insulation cavity and a plastic sheet vapor barrier. Insulation shall be between the cross members and on top of the floor pan to the maximum extent possible. Floor shall be secured to the frame members. Floor shall be capable of withstanding a vertical load of 300 pounds per square foot. The floor shall be secured to the frame members with self-tapping, corrosion-resistant machine screws conforming to SAE J478, table 4. Floor seams shall be filled.

3.4.1.5 Gooseneck. The following items shall be stored in the gooseneck:

- a. Highway warning kit (3.1.1.10)
- b. First aid kit (3.1.1.11)
- c. Loading ramp (3.4.3.1.2)
- d. Wheel chocks (3.4.5.1)
- e. Spare tire assembly (3.4.6.2.1) - accessible from exterior
- f. Tools (3.4.6.4) - accessible from exterior
- g. Intervehicular cable (3.4.7.1)

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- h. Grounding rods and tools (3.4.7.6)
- i. Folding chairs, four (N/A)
- j. Jumper cables (3.4.6.8)
- k. Hydraulic jacks, two (3.4.6.5).

Items a., b., d., f., g., h., j. and k. shall be stored in boxes secured to the floor or side walls. Items d. and e. shall be mounted in a permanent wall or floor mounted fixture. Items c. and i. shall be stored on the floor by adjustable, floor mounted nylon straps. All mounting devices shall secure the items without shifting during all mobile operating conditions. One non RFI filtered duplex receptacle of 15 amp capacity shall be wired and installed on the curbside gooseneck wall.

3.4.1.5.1 Gooseneck partition. A full gooseneck height, insulated partition shall be installed between the gooseneck and working area. Insulation shall meet the requirements of 3.4.1.13. An insulated, full gooseneck height, double door shall be installed for access to remove and store items a-k. Minimum door width shall be 60 inches.

3.4.1.5.2 HVAC access door. A full width, full height, fully framed, swing top door with gaskets (see 3.4.3.2) shall be provided for access to the HVAC unit(s). The door shall be supported by heavy duty hinges at the roof line and also hydraulically damped supports at each side. With open doors, the HVAC equipment shall be capable of being removed by material handling equipment. The door shall be lockable from outside by a pick-proof dead bolt lock. Exterior hardware for the door shall be chrome plated steel or stainless steel.

3.4.1.5.2.1 Air intake and discharge grilles. Air intake and discharge grilles shall be provided in the access door corresponding to the HVAC grilles. The grilles shall be of the shutter type with a safety grille to provide protection for the shutters and condenser. Removable dust and moisture covers shall be provided for the grilles for use when the vehicle is in transit.

3.4.1.5.3 Spare tire access door. A curbside or streetside, swing out, fully framed, gooseneck door with gaskets (see 3.4.3.2) shall be provided for exterior access to the spare tire and tools. Heavy duty hinges and a pick-proof deadbolt lock shall be provided. Means shall be provided to retain the door against the side of the body. The retaining devices shall be furnished with a retaining spring. All exterior hardware for the door shall be chrome plated steel or stainless steel. The door shall be sized for easy removal and installation of the spare tire and tools.

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3.4.1.6 Rear bumper. The semitrailer shall have a rear bumper in accordance with the intent of FMCSR 393.86. The rear bumper shall be full width, partial wraparound, provided it does not interfere with generator compartment access doors.

3.4.1.7 Rub rails. Rub rails not less than 11 gage (0.1196 inches) shall be provided along the street and curb side of the semitrailer.

3.4.1.8 Drip mouldings. Drip mouldings shall be provided over all trailer body exterior openings.

3.4.1.9 Kingpin. The semitrailer shall be equipped with a replaceable kingpin on the front of the gooseneck for mating with a fifth-wheel mounted on the bed of the prime mover. Kingpin shall be Holland "KP" series or equal. Kingpin shall meet requirements of SAE J700.

3.4.1.10 Exterior body side and rear panels. Exterior body side and rear panels shall have full length reinforcing ribs (on 6 inch centers) aluminum alloy of not less than 0.050 inches in thickness. The side and rear panels shall have not less than a 2 inch lap, shall be riveted every 2" on centers, and shall be sealed with an insoluble in-water sealer. Panels shall be riveted on not more than 2 inch on centers. All panels shall be leveled to eliminate waviness.

3.4.1.11 Roof panels. The roof panel shall be of one piece, aluminum alloy of not less than 0.040 inch in thickness. The roof panels shall be sealed with insoluble in water sealer and secured around the perimeter on not less than 2 inch centers. The roof shall be capable of withstanding a static load of 60 pounds per square foot. Roof shall be crowned to permit drainage.

3.4.1.12 Body attachments. Body attachments, including a rear bumper, shall be fastened together in a manner which will preclude loosening of bolts, screws and rivets, as well as cracking of welded joints when the vehicle is properly maintained and operated under the intended service conditions. Fasteners shall be compatible to the metal being secured. Fasteners shall be sealed before employment. Self-tapping screws shall be used in areas subjected to stress; and wood shall not be utilized for structural framing. Body side panels shall not show any evidence of not being properly riveted. All bolted and riveted attachments shall be sealed to preclude the entrance of water. The interior seams shall be coated with insoluble in water sealant. All exterior body framing drive screws, rivets and bolts shall be squarely employed and shall not be overtorqued. Stripped threads are not acceptable.

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3.4.1.13 Insulation. Body insulation shall have an "R" rating of not less than 5 per inch thickness, and a density of not less than 1.50 pounds per cubic foot. The insulation shall not support combustion or sustain flame, mold, rot, or sustain vermin, corrode metals, absorb odors, and is essentially odorless. It shall not disintegrate under vibration or settle and leave voids. Means shall be provided to drain condensation to ground, and shall not allow road splash to enter the insulation cavity. Insulation material shall be homogeneous and uniform in density and thermal efficiency. Insulation material shall be capable of flexing more than its containing structure without tendency to crack or rupture. Insulation shall be of the foam-in-place polyurethane, styrofoam panel, or polyurethane panel type.

3.4.1.14 Materials. Materials shall be free from any defects or imperfections that may affect the performance and appearance of the vehicle.

3.4.1.15 Sealer for waterproofing. The sealer shall be insoluble in water and shall not harden. The sealer shall be capable of resisting weepage between any attachment where the sealer is employed. The sealer shall be capable of accepting the water test specified herein.

3.4.2 Design load and stresses. The design load shall be equal to the product of 1.5 times the algebraic sum of the semitrailer empty weight minus the unsprung weight of the suspension system plus the rated design payload distributed as specified. Expressed as an equation:

Design load = 1.5 (curb weight minus the unsprung weight plus rated design payload). The 1.5 factor shall include and adjust the effect of a shock load (0.50) in stress calculations. When subjected to the computed design load, the normal stress (variously designated as the principal, bending, flexural or fiber stress) in the load carrying members shall not exceed 50 percent of the material yield strength. When the column loading is the critical loading condition, the column loading shall be computed in conformance with the latest edition of the American Institute of Steel Construction, Incorporated (AISC).

3.4.2.1 Stress analysis. Stress analysis of the semitrailer construction shall be furnished. Stress analysis shall include at least the following calculations and diagrams:

- (a) The sprung load distribution diagram on kingpin, axles, and landing legs. Expressed in terms of an equation:
Sprung design load = 1.5 (gross weight minus unsprung weight).
- (b) The vertical shear diagram for the length of the vehicle.

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- (c) The bending moment diagram for the length of the vehicle.
- (d) The loads, sections, and stress in members subjected to maximum shear and moment, to include the analysis of the stress in attaching weldments or other fastenings.
- (e) The loads, sections, shear, and bending moment diagrams at the kingpin area, the chassis understructure frame members, and including suspension area sub-frame members, and sides including roof, wall and floor members.
- (f) The load, section, shear, and bending moment diagram for the most critical crossmember, to include the analysis of the stresses in attaching weldments or other fastenings.
- (g) The loads, sections, and stresses in members subjected to maximum compressive forces.
- (h) List all of the assumptions and references utilized to provide the required data.
- (i) The loads, sections, stresses, and shear and bending moment diagrams at the door(s).
- (j) Loads on axles of prime mover pulling semitrailer at gross weight minus personnel.

3.4.3 Curbside door. A minimum 6' high curbside door shall be located to the fore end of the work area for personnel. The door shall be of the solid, insulated type with gaskets (see 3.4.3.2) and shall be capable of being opened from the inside or outside of the vehicle. Means shall be provided to retain the side door against the side of the body. The retaining devices shall be furnished with a retaining spring. Door shall be furnished with pick-proof deadbolt locks capable of being locked from the interior manually and by key from the outside. Door shall be hung between box posts with not less than three heavy duty hinges. All exterior hardware for the door shall be chrome plated steel or stainless steel. Six (6) sets of keys shall be provided with the keys common to the HVAC access door (3.4.1.5.2), spare tire access door (3.4.1.5.3), filler caps (3.4.6.7), battery compartments (3.4.7.1), generator compartments (3.4.7.2.4.1), cable compartment (3.4.7.2.2.), and RF panel door (3.8.7).

3.4.3.1 Entrance step and loading ramp.

3.4.3.1.1 Entrance step. An open grating, antiskid, foldable step shall be provided for entry in the curbside door. The step shall fold underneath or inside trailer when in transit, and when extended, shall be positioned approximately between the door opening and the ground. Minimum tread depth shall be 9.5 inches with a tread width of at least the curbside door width.

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3.4.3.1.2 Loading ramp. A folding, aluminum moving van type loading ramp shall be provided for loading cargo through the curb side door. The ramp shall be not less than 36 inches wide and shall have a non-skid surface. When in use, the ramp angle with the ground shall not be more than 22 degrees. The ramp and mounting points shall rigidly support a total of 1000 lbs. Semitrailer fittings shall be provided for mounting of the ramp under the door threshold. The upper portion of the ramp shall be flush with the door threshold at the breakover.

3.4.3.2 Door gaskets. All doors shall be provided with weatherproof, nonabsorbent, light-tight, rubber sealing gaskets. Gaskets shall be fitted around the door openings and between the doors. Gaskets shall have flexural and compressibility characteristics and not absorb moisture. When doors are closed, light, wind or rain shall not penetrate. Gaskets shall withstand a minus 50°F to plus 160°F ambient temperatures. Gaskets shall not be painted. The gaskets shall be treated with silicone prior to final inspection and subsequent to final painting.

3.4.3.3 Security alarm system. A key switch activated security alarm system shall be furnished. The alarm system shall be powered from the 12 volt dc supply (3.4.7.1). The alarm system shall consist of microswitches on all semitrailer openings such all doors; generator compartments; and cable reel opening, alarm horn, and a key switch located near the curbside door. Six sets of keys shall be provided different from the keys specified in 3.4.3.

3.4.4 Axles. The vehicle shall be equipped with a single wheel tandem axle. The axle GAWR shall be at least equal to the load imposed on each member, measured at the ground, under all operating and transport conditions, with the semitrailer loaded with the specified payload. The axle assembly shall be located to provided a departure and approach angle in accordance with the requirements of MIL-A-8421 and specified weight distribution.

3.4.5 Brakes. The semitrailer shall be equipped with 12-volt electric service brake system rated for the MTTs platform gross weight. Service brake system shall comply with all applicable requirements of Motor Carrier Safety Regulations 393.42, 393.43, 393.47 and 393.48. The service brakes system shall act on all wheels and shall have a rated torque capacity at least equal to maximum torque imposed during braking, measured at the ground, with the trailer loaded. All components of the braking system shall be installed in such a manner as to provide adequate road clearance when traveling over uneven or rough terrain, including objects liable to strike and cause damage to the brake system

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components. No part of the braking system shall extend below the bottom of the wheel rims. Brakes shall be operative in an ambient temperature of minus 25°F.

3.4.5.1 Wheel chocks. Four wooden or aluminum chock blocks shall be provided for use when the semitrailer is parked on an incline. They shall be of sufficient size to prevent movement when the trailer is parked at a 5 degree slope. Chocks shall be stored securely in the gooseneck when not in use.

3.4.5.2 Breakaway feature. An electric brake system shall be provided with standard breakaway feature that will automatically apply the trailer brakes if the semitrailer separates from the prime mover. The breakaway system shall include wiring and be connected to existing 12 volt electrical power in the trailer. The design shall provide for automatic or ready disconnection with storage battery when the semitrailer is manually separated from the prime mover.

3.4.5.3 Suspension system. The semitrailer shall be furnished with the manufacturer's heavy duty shock absorbers and suspension system. Each component shall have a rated capacity equal to the load imposed measured at the ground, under all operating and transport conditions, plus at least 10 percent when the semitrailer is loaded to the full GW. Clearances shall preclude interference between tires and any other part of the trailer under all mobile operating conditions. The system shall maintain the requirements for shock and vibration of the mounted electronic equipment in conjunction with the isolators (3.8.1.1.1).

3.4.6 Wheels, rims, tires and landing gear.

3.4.6.1 Wheels and rims. Wheel bearings shall be of the anti-friction (roller) bearing type and shall be grease lubricated. The hubs shall be provided with leakproof seals. Rim and tire ratings shall conform to Tire and Rim Association recommendations, for the type and size of tires furnished and shall be rated for the load imposed under all operating and transport conditions. Tire size, ply rating, tread design and manufacture shall be the same for all wheels on the semitrailer. Rim sizes shall be the same for all wheels on the trailer and shall be of the preferred size in accordance with the Tire and Rim Association recommendations for the tire and rim furnished.

3.4.6.2 Tires. Tires shall be radial tubeless type with highway tread. Tires shall be of the rated capacity at least equal to the loads imposed on each tire, under all operating and transport conditions,

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measured at each wheel, at the ground, with vehicle loaded as specified in 3.9 and at the speeds specified in 3.3.1.

3.4.6.2.1 Spare tire assembly. A spare wheel or rim with a mounted inflated spare tire shall be furnished. It shall be stowed in the gooseneck and secured to the floor. The spare tire shall be of the same size, load range, and tread design as the tires furnished on the trailer.

3.4.6.3 Wheel and tire balancing. Hubs, drums, tire and wheel assemblies shall be balanced to preclude abnormal tire wear, wheel thump and drumming at speed specified in 3.3.1.

3.4.6.4 Tools. Semitrailer shall be furnished with tools required for exchanging mounted tire assembly with the spare assembly, and shall include at least a hydraulic jack, jack handle and wheelnut wrench. The jack shall be of such closed height as to permit its location under axle, or other satisfactory lift point, at any wheel with the tire flat. The jack, without blocking, shall be capable of raising any wheel of loaded vehicle to a height adequate to permit removal and replacement of wheel and tire assembly. Tools shall be stowed in the gooseneck.

3.4.6.5 Landing gear assemblies. The vehicle shall have two vertical lift telescopic, non-rotating, landing legs, and a hand crank for each landing leg. In addition, two portable hydraulic jacks, each of sufficient capacity, shall be used to provide levelling in the rear of the trailer. A decal shall be placed on the trailer indicating where the rear levelling jacks shall be stowed securely in the gooseneck when not in use. Landing leg shall be equipped with self-leveling sand shoe of at least 12" diameter or 12" square and meeting transportability requirements of MIL-A-8421. A holder shall be provided for each hand crank. A corrosion resistant security chain, secured to the landing leg shall be provided. The landing gear assembly shall be capable of being operated independently or simultaneously from either side of the vehicle for side-to-side leveling and fore and aft leveling. The landing gear assembly and its components, accessories, and attachments shall withstand, without deformation, the combined static and dynamic forces due to the portion of the gross weight sustained, and the additional forces resulting from 4.5 g vertical downward forces during air transport. When placed in travel position, the landing gear assembly shall remain locked and within ground clearance requirements. The landing gear assembly shall be protected to preclude the entrance of foreign matter which would impair its functioning or mechanical efficiency. Lubrication fitting shall be furnished.

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3.4.6.6 Spirit levels. One two-axis leveling indicator shall be mounted on each corner of the trailer in protected and visible locations. The spirit levels shall indicate body level when the landing gear assemblies are being employed as leveling jacks. Spirit levels shall be inclement weather resistant and corrosion resistant.

3.4.6.7 Fuel tanks. Two (2) fuel tanks, each with a capacity of 12 hours operation at maximum output for a generator and installed beneath the floor pan in accordance with Federal Motor Vehicle Safety Regulation 393.67 shall be furnished. The fuel tanks shall be connected to each generator so that each can serve either generator. Selector switch or valve shall be conveniently located. Two (2) fuel gages shall be furnished for measuring the fuel supply in each generator fuel tank. The gages shall be mounted near the filler necks in weatherproof, spring-loaded covers. The filler necks shall be located on the roadside of the vehicle. The filler caps shall be lockable. Six sets of keys shall be provided. An Explosafe or equivalent aluminum filler material shall be installed in both fuel tanks to suppress explosions. The filler shall displace no more than 2% of the fuel tank volume and any necessary modifications to the fuel gages shall be made to insure that the correct fuel level is indicated.

3.4.6.8 Jumper cables. One set of color-coded (red-positive, black-negative) jumper cables shall be provided. They shall be of heavy duty construction not less than AWG #1 stranded copper conductor. Alligator clip ends shall be heavy gauge copper and sized for the battery terminals. The cable shall be at least 8 feet long and will be stored in the semitrailer gooseneck.

3.4.7 Electrical systems.

3.4.7.1 DC electrical system. A 12 volt dc electrical system shall be furnished. The 12 volt system shall be capable of powering the security alarm system, generator starters, generator compartment lights, brake breakaway switch, and emergency interior lights. The 12 volt electrical system shall be fully fused for the proper current capacity. The fuse box shall be located in an accessible place. A decal shall be affixed inside the fuse box cover identifying the circuit for each fuse. It shall be powered by two deep-cycle lead-acid batteries, connected in parallel, located in a sliding tray within enclosed compartment(s) accessible from the outside in accordance with National Electric Code 551-3 (d) and FMCSR 393.30. Location shall be near or in the generator compartments. The compartment(s) shall be lockable with pick-proof deadbolt locks (if not in the generator compartment) and waterproof with gaskets (see 3.4.3.2). Six sets of keys shall be provided. The tray(s) shall support batteries in a pulled out position, and all cells shall be

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available for inspection and servicing while in this position. All exterior door hardware shall be stainless steel or chrome plated steel. Batteries shall be rated at not less than 500 cold cranking amps (CCA) at 0°F and 60 amp/hr. each. The batteries will be recharged simultaneously and independently by the generators and a battery charger (see 3.4.7.1.4). The charging rate will be controlled by voltage regulators in the generator and recharging systems. In addition, the trailer shall be connected by a seven-conductor cable in accordance with SAE J1067 to the towing vehicle when underway so that power to the running lights, stop lights, fog lights, turn signals, and brakes can be provided by the towing vehicle. The cable shall be stored in the gooseneck when not in use.

3.4.7.1.1 12 volt wiring system. Wiring shall be in accordance with the applicable portion of the general section SAE J1242, and Motor Carrier Safety Regulations 393.27, 393.28, 393.29, 393.32 and 393.33. All wiring exposed to possible physical damage shall be protected by use of heavy wall thermoplastic insulated conduit or aluminum conduit. The conduit shall be EMI shielded. Wiring within the body area that is not readily accessible for service shall be in conduit. Conduit shall be provided with vents. All exterior lighting shall be wired within the body to the exterior lighting receptacles. Wiring shall be accessible for replacement without removing any component of the vehicle. Wiring shall be capable of being replaced or serviced through the conduit and junction boxes. Conduit shall be adequately and properly secured to prevent possible physical damage by the employment of chafe proof clamps and grommets. Grommets or electrical bulkhead fittings shall be employed for any conduit passing through any structural members.

3.4.7.1.2 Exterior lighting system. An electrical lighting system of 12 volt dc potential shall be provided. The lighting system shall conform to Motor Carrier Safety Regulations 393.14, 393.20, 393.22, 393.23, 393.25 through 393.29, 393.32 and 393.33. All lights and reflectors shall not be mounted on rub rails (unless recessed and fully protected). Yellow fog lights that activate when the brake is depressed shall be provided, wired in parallel with the brake lights. Turn signal lamps shall be in accordance with SAE J588.

3.4.7.1.3 Receptacle: 12-volt. The semitrailer shall be equipped with a receptacle mounted in a recessed location at the front of the vehicle. Receptacle shall be in accordance with SAE J560, with spring loaded cover assembly. The 7-contact socket shall be wired in accordance with SAE J560 to supply 12 volts directly to the semitrailer circuits.

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3.4.7.1.4 Battery charger. A battery charger shall be installed in the battery compartment(s). The battery charger shall be rated at 10 amp, 14 to 15 volts DC output. An overcurrent protected circuit shall be provided in the battery compartment(s). The outlet shall be a branch of the EMI shielded circuit. The charger shall charge the batteries simultaneously or independently and shall incorporate a circuit that terminates charging when the batteries are fully charged.

3.4.7.2 Interior electrical system. The semitrailer interior electrical system shall be wired to provide 120 volts, 50 or 60 Hertz, single phase, 3 wire for the air conditioning and heating system, duplex receptacles for mission equipment and accessories, and the interior lighting system. Voltage shall be fed from the main power panel. All wiring methods and material used shall be rated and sized be in accordance with the latest edition of the National Electrical Code. Wiring shall not be exposed to the semitrailer interior or the exterior. Wiring shall be accessible for replacement without removing any component of the vehicle. Wiring shall be in aluminum conduit or in thermoplastic insulated conduit and be EMI shielded. Aluminum wiring, receptacles, ground bus, or switch gear contacts are not acceptable. See appendix for schematic.

3.4.7.2.1 Power distribution panel. The power distribution panel shall be a Hoffman-type NEMA 12 enclosure. It shall contain all the circuit breakers, switches, and filters necessary for all interior electrical circuits. Components shall be sized according to NEMA standards. The panel shall be wired to accept inputs from the external power receptacle (3.4.7.2.3) or the generators (3.4.7.2.4). All components shall be clearly labeled. The power distribution and related circuitry shall be arranged as specified in figure 1 in the appendix. All circuit breakers shall be the magnetic bolt-in type and rated for the electrical loads imposed. The panel and its contents shall be grounded to a heavy member of the trailer frame. The voltage, frequency, and amp meters for the power sources shall be mounted on the distribution panel door. Voltage range shall be 0-250 volts AC. Frequency range shall be 0-100 Hertz. Current range shall be 0-150 amperes. Scales shall be large enough to be read clearly at a distance of 8 feet. There shall be two main circuits, one RFI filtered and one unfiltered (see appendix). The RFI filter shall have a capacity of at least 60 amperes, 120 volt ac, 1-60 Hertz. Attenuation at all frequencies in the range of 14 kHz to 10 GHz shall be at least 100 dB when measured in accordance with MIL-STD-220A, full load. The RFI filter shall have a rectangular shape and weigh approximately 18 lbs. The RFI filter shall be All-Tronics part number A3518 or equal.

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3.4.7.2.1.1 Grounding. All electrical equipment, housings, frames, casings, etc., shall be grounded with continuity to the equipment ground at the power source and also to the ground terminal for connection to a driven ground rod. The grounding rod kit shall include a 50 foot length of flexible grounding, cable, size AWG #4, one 5 foot long x 5/8-inch copper clad steel ground rod, a sledge hammer and a folding shovel. The rod shall disassemble into three sections and the kit shall be kept in the gooseneck area.

3.4.7.2.2 Cable and reel.

3.4.7.2.2.1 Cable. One 100 foot length of four conductor, shielded, heavy duty, flexible, oil resistant, type "SO" cable shall be furnished. One end shall terminate in a twist lock male plug which will mate with external power receptacle (3.4.7.2.3). The other end shall terminate in bolt-on lug connectors for attachment to the external power source. Connectors and cable shall be rated for 240 Vac at 100 amperes. Cable shall be constructed of four wires sized in accordance with the NEC at open air condition which when derated to 70% has a capacity of 100 amperes. Cable jacket and connector connections shall be watertight and resistant to cracking and deteriorating when exposed for long periods of time to the environment. Cables shall be provided with one protective cover for each connector. Protective covers shall be watertight and securely attached to the cable.

3.4.7.2.2.2 Reel. The semitrailer shall be equipped with a cable reel of sufficient capacity to store 100 feet of cable specified in 3.4.7.2.2.1. The reel shall be located near the curbside wheelwell. The reel shall be equipped with an automatic rewind mechanism with an adjustable tensioning control. When the cable is being extended and the tension is released, the reel shall automatically keep the cable from rewinding until manually released. The cable reel shall be located in a compartment accessible only from the outside with the same wall construction as the generators (3.4.7.2.4.1) except that no acoustic insulation nor metal floor is required. Enough space shall be provided for removal and servicing of the reel. A lockable, watertight door with gaskets (see 3.4.3.2) shall be provided for exterior access. All exterior hardware for the door shall be corrosion resistant stainless steel. The door shall be provided with a mechanism to hold it open. The cable reel assembly shall be bolted and easily removable from the floor.

3.4.7.2.3 External power receptacle. A female power entrance connector receptacle shall be recessed into the rear curbside of the semitrailer body near the cable reel compartment. No part of the receptacle shall extend outside of the semitrailer body line when not

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connected to the power cable. A steel housing shall be constructed around the connector receptacle to isolate the exterior receptacle from the interior of the semitrailer. The connector receptacle shall be heavy cast or forged aluminum and shall be securely bolted to the semitrailer. The connector shall be securely bolted or screwed into the shell. A screw-on cover with chain attached to the shell shall be provided. The entire assembly shall be rated weatherproof in accordance with the National Electrical Manufacturers Association (NEMA). Connector receptacle shall have a twist lock or other type locking in-place feature to hold the power cable connector. The connector receptacle shall be NEMA rated for 208/120 v, 3 phase, 50/60 Hertz, 100 ampere, 4 wire connection. The receptacle shall be connected to the source selection switch in the power distribution panel.

3.4.7.2.4 Generators. Two (2) 6.5 kw gasoline powered generators shall be furnished. The generators shall be mounted on slide out trays in lockable compartments with pick-proof deadbolt locks located in the rear of the trailer, one curbside and one roadside, and only accessible from the outside. They shall have louvered doors to allow for the entry of air in sufficient volume for combustion and cooling. The enclosures shall be constructed so as to provide a maximum sound level of 62 dB(A) when measured inside the vehicle at the rear and to minimize radiated EMI. The generators shall operate on regular (leaded) gasoline. Each generator shall be equipped with 5 ampere charging circuit and bottom exhaust provision. Passages through partitions for wiring or piping shall be grommetted. Generator output shall be dedicated as follows but shall be switchably interchangeable:

- (1) Heating/cooling equipment located in the gooseneck.
- (2) Mission equipment and interior lighting. The output of this generator shall be RFI filtered.

The generators shall be startable from a remote location or by a recoil (pull chord) starter on the unit. Engine speed shall be no greater than 1800 rpm. The units shall weight no more than 350 lbs. each and no dimension shall be larger than 30 inches (+ 1 inch). The generators shall be Onan or equal.

3.4.7.2.4.1 Generator enclosure. The generator enclosure shall be constructed to support the weight of the generator under all operating and transport conditions. The entire compartment shall be framed in channel, box, or angle iron with at least one side fastened to the frame. The compartment floor shall be metal or metal covered plywood. The compartment area shall be separated from the trailer interior and the fuel supply by a vapor tight wall. The compartment shall be lined with 22 gauge minimum thickness steel or other noncombustible material

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of equivalent quality and strength. Clearance between compartment walls or ceiling shall be as specified in the generator installation manual. An oil drain hole and fluid drainage holes shall be provided in the base. Rubber, through bolt type vibration isolators, shall be provided at the generator mounting points. The compartment shall be lined with noncombustible acoustical material to meet the sound level requirements of 3.4.7.7. Ventilation and air circulation requirements shall meet the generator manufacturer's recommendations. The exhaust system shall meet all applicable federal and state regulations. The exhaust shall have an integral muffler/spark arrester and the exhaust pipe shall extend at least 1 inch from the vehicle perimeter. While in the compartment, it shall be possible to easily service the air cleaners, oil dipstick and filler, and pull the starter cord. The louvered access doors shall have a restraining device to hold them open. All exterior hardware for the doors shall be corrosion resistant stainless steel or chrome plated steel. A manually operated dc light for each compartment, protected from breakage, shall be provided.

3.4.7.2.5 Interior lighting. The interior lighting shall be incandescent and recessed into the false ceiling in plastic features with facets to diffuse the light. There shall be at least four light sources in the ceiling plus one over the workbench. Light output shall be at least 100 foot-candles at a distance of 30 inches above the floor throughout the semitrailer. Power shall be fed from the filtered supply in the distribution panel. The lights shall be operated by an off-on wall switch located near the door. The interior lighting shall be located along a side of the central distribution duct, and located such that any wiring will not interfere with the ductwork.

3.4.7.2.6 Emergency lighting system. In addition to a manual switch located next to the A/C lighting switch, a time delay switch and associated circuits shall be installed in such a manner that emergency DC lighting located within each A/C lighting fixture shall be energized for a period of two minutes after the AC electrical power has been removed from the semitrailer and then automatically turn off lights. The time delay switch shall reset automatically each time AC electrical power is restored to the semitrailer. The time delay switch shall be such that with AC electrical power "on" in the semitrailer, the time delay switch shall be in the "off" position.

3.4.7.2.7 Receptacles. The receptacles shall be 125 Vac, 15 amp, 3 wire duplex with an aluminum or stainless steel cover plate. A receptacle shall be provided in the following locations:

- (a) One receptacle dedicated to each rack, accessible to both mounted cases.

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- (b) One receptacle on the wall just above the workbench surface.
- (c) One wall-mounted gooseneck receptacle (non-filtered).
- (d) One for each battery compartment (with spring loaded waterproof covers).

3.5 Interior surfaces.

3.5.1 Walls. The interior walls shall be covered with 1/4-inch plyboard siding over the insulation (3.4.1.13). Exposed areas of walls shall be covered with carpeting.

3.5.2 Ceiling. The ceiling shall be insulated to the same degree as the floor and walls. The ceiling shall be covered with hardboard paneling meeting PS60-73 or smooth aluminum sheet (.04 in. min.) and painted the manufacturer's standard semigloss white.

3.5.3 Space reserved.

3.5.4 Carpeting. The floor and exposed walls shall be covered with industrial grade carpet (with padding for the floor) with anti-static properties, with grounding to the floor, except those areas where switches, receptacles, hardware, etc. must be accessible. The carpet shall be a dark tone such as dark blue, dark brown, maroon, or dark green (no black or charcoal) solid of short or medium pile. A grounded metallic grid may be installed between the floor and carpet, if necessary.

3.6 Heating and ventilation.

3.6.1 Cooling and heating unit. The environmental control system shall be furnished as specified in 3.3.4. Power shall be fed from a dedicated circuit in the main control panel (3.4.7.2.1). The unit(s) shall be located inside over the gooseneck at the front, rearward of the gooseneck door aligned behind the grilles, and be shock mounted to reduce noise and vibration to the work area. The unit(s) shall operate on 120 vac, single phase, 50 or 60 Hertz, continuous duty, without damage. Controls for function selection shall be in a remote location. In addition to providing thermostatic control, the control shall be capable of manual selection of "Heat," "Cool," "Vent," "Recirculating," and "Off." These functions are as follows:

- Heat - Energize the heating coils with the evaporator fan, and gasoline fueled heater.
- Cool - Energize the air conditioning apparatus.
- Vent - Energize the evaporator fan only with outside air intake.

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Off - De-energize the unit entirely with time delay to allow the compressor to pump down.

3.6.1.1 Control circuit. The control thermostat shall be a remotely located temperature control device powered from the distribution panel, and if necessary with the proper step-down transformer. The thermostat shall be capable of maintaining the set-point temperature $\pm 2^{\circ}\text{F}$ measured at the controller and $\pm 3.6^{\circ}\text{F}$ measured at a level 2 feet above the floor throughout the trailer. The thermostat shall have an "OFF" setting to de-energize the entire system, a "HEAT" setting to energize the heating coils and gasoline fueled heater, a "COOL" setting to energize the compressor and evaporator fan, and a "VENT" setting to energize the evaporator fan only.

3.6.2 Air distribution system. The air discharged by the main unit shall be directed into a plenum and then directed into a duct recessed in the false ceiling and located along the center longitudinal axis of the trailer. The duct shall be sized and constructed to prevent noise and vibration. Exhaust vents shall have directional vanes and be sized to prevent noise and vibration. They shall be sized and located according to good design practice. Discharge air velocity, measured at each vent, shall not be less than 3.0 feet per second, nor greater than 5.0 fps. Total discharge air volume shall be not less than 580 cubic feet per minute. Return vents shall be located along both sides of the central distribution vent and shall be sized and constructed according to good design practice with at least the same cross sectional area as the supply duct. NOTE: Incandescent lighting will be located between supply and return air ducts. They shall not interfere with one another.

3.6.3 Sheet metal ductwork. Ductwork shall be constructed of galvanized steel or aluminum sheets. Ducts shall conform accurately to dimensions specified and shall be straight and smooth on the inside with joints neatly finished. Ducts shall be anchored securely in place and free from vibration. Joints shall be made substantially air-tight with no dust marks from air leaks showing at duct joints or outlet connections. Laps shall be made in direction of air flow. All edges and slips shall be hammered down for a smooth exterior finish. Ducts shall have cross break of sufficient center height to assure dust rigidity. Minimum sheet metal gages are tabulated in table II.

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TABLE II. Sheet metal thicknesses for rectangular-duct construction.

Aluminum thickness (inch) and (B&S gage)	Galv. sheet gage	Maximum side (inches)
0.0201 (24)	26	Up thru 12
0.0253 (22)	24	13 thru 24 25 thru 30

For normal pressures and velocities used in typical air-conditioning systems and where special rigidity or stiffness is required, ducts shall be constructed of metal two gages heavier.

3.6.4 Auxiliary heater. A 30,000 minimum Btuh gasoline fueled space heater shall be furnished. The unit shall be mounted in the gooseneck and ducted into the central duct. It shall be fueled from a generator fuel tank (3.4.6.7). Provisions shall be made for installation according to the manufacturer's instructions, including venting for combustion air and exhaust fumes. The unit shall be approximately 18" x 17" x 15" in size and weigh not more than 40 pounds. The unit shall operate on 28 Vdc electrical power, with the required step down transformer integral to the unit.

3.7 Prime mover. The prime mover shall be a 10,000 lb. GVW minimum, 18,500 lb. GCW minimum crew cab pickup with power steering and power brakes, in accordance with table 5, item 54, type V, class F of the current edition of Fed. Std. 307. The crew cab pickup shall be equipped by the original equipment manufacturer with all the equipment and accessories listed in 3.7.2 - 3.7.7 in addition to the standard requirements of Fed. Std. 307. Equipment or accessories not available from the original equipment manufacturer shall be installed ready for use by the contractor. In addition, a Special Equipment Option (SEO) shall be provided from the OEM for the vehicle's maximum available GVWR and trailer pulling ability such that the prime mover is not overloaded by the semitrailer gross weight.

3.7.1 Weights.

3.7.1.1 Curb weight. The curb weight shall consist of the weight of the fully equipped prime mover including the fifth wheel and mounting assembly.

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3.7.1.2 Payload. The payload shall consist of the trailer kingpin weight, 4 personnel at 175 lbs. each, and 175 lbs. of personal items.

3.7.1.3 Gross weight. The gross weight of the prime mover shall consist of the curb weight plus the payload.

3.7.1.4 Gross combination weight (GCW). The gross combination weight shall include the semitrailer at gross weight minus personnel plus the prime mover gross weight.

3.7.2 Drivetrain. The engine shall have eight cylinders with a 4bbl carburetor, and provide a minimum of 210 SAE net h.p. at 3800 rpm and 340 lb-ft of torque at 2800 rpm. A four speed manual transmission and a minimum axle ratio of 4.56 shall be provided. The engine shall operate on leaded gasoline. The heaviest duty engine cooling system available shall be provided. An engine oil cooler shall be provided. All vehicles shall comply with the state of California Air Resources Board Regulations in effect on the date of manufacture. The vehicle shall have a minimum 30 gallon fuel capacity.

3.7.3 Suspension. The heaviest duty available springs and shocks shall be provided, with a minimum rear GAWR of 7500 lbs and minimum front GAWR of 3800 lbs. The heaviest duty available front and rear stabilizers shall be provided. The highest capacity available, 16 inch steel belted radial tires shall be provided with all rims and tires provided with the vehicle being the same size. Dual rear wheels shall be provided. A fully inflated spare tire shall be provided and mounted behind the cab in the pickup bed.

3.7.4 Vehicle exterior. The exterior color shall be the original equipment manufacturer's medium to light blue. The following requirements shall be provided:

- a. 8' pickup body length
- b. MIL-STD-1223 tropical rustproofing
- c. Roof marker lights
- d. Sliding rear window
- e. Mirrors, exterior, LH and RH camper type, with convex inserts.
- f. Fifth wheel bracing and mounting assembly.
- g. Front foglights - halogen.

3.7.5 Electrical. The heaviest duty available alternator and battery shall be provided. A heavy duty, 12v, 7 wire trailer wiring harness with a round plug SAE J560 receptacle shall be provided. The receptacle shall be located for use in conjunction with the semitrailer

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lighting cable. The electric brake control unit shall insure activation of the trailer brakes, brakelights and fog lights when the truck brakes are applied.

3.7.6 Interior. The following interior requirements shall be provided:

- a. Air conditioning
- b. Radio, AM
- c. Cigar lighter
- d. Gages (voltmeter, oil pressure and temperature)
- e. Dome light, interior
- f. Seats, heavy duty vinyl
- g. Floor mats, 4.
- h. Map light.

3.7.7 Fifth wheel assembly. An adjustable height fifth wheel rated at a minimum 12,000 lbs. vertical load and 32,000 lbs. GVW pull load with 360° kingpin contact to be compatible with design requirements contained herein. The fifth wheel shall be mounted directly to the prime mover frame in accordance with FMVSS 393.70(b). The fifth wheel shall be compatible for mating with the kingpin on the semitrailer front and be capable of tolerating the loads imposed plus the stresses of coupling and uncoupling. Location of the fifth wheel shall not cause the semitrailer to overload the prime mover and shall maintain tracking requirements of 3.3.1.

3.8 Interior configuration. The working area of the semitrailer (space rearward of the gooseneck) shall be configured to provide a comfortable and practical working environment for four (4) personnel. Aisles and exit shall be clear and unobstructed, and unless otherwise specified, shall be a minimum of 30 inches wide for the full semitrailer interior height. All doors shall open a minimum of 90 degrees from the closed position. The contractor shall determine the layout based on his trailer configuration as supplied to the specification requirement. Approval of proposed layouts shall be conducted as specified in 3.13 and the procurement documents. The interior semitrailer layout shall consist of an arrangement of the following components: equipment racks, personal storage, antennae storage, workbench, power cable and reel, power distribution cabinet, and generator compartments. All components shall be mounted directly to frame members, and shall be installed to remain secure, without vibrating or shifting under all operating and transport conditions.

3.8.1 Equipment racks, cases and associated cabinetry. All cases shall be mounted on one of two levels in the equipment racks: operator's level (36 ± 0.5 inches from floor to case bottom) and lower

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level (2 ± 0.5 inches from floor to case bottom). During an MTTTS operation, one operator works primarily with case 1 and secondarily with cases 2 and 3. The other operator works primarily with case 4 and secondarily with cases 2 and 3. Cases 5 and 7 are used by both operators. Cases 6 and 8 are used for storage and a spare for future expansion space respectively. The cases shall be mounted interchangeably alone or in pairs in at least five (5) sets of shock mounted racks. Space left over in racks with only one case shall be converted into a storage area (see 3.8.1.1). The minimum operator space in front of each rack shall extend at least eight (8) inches greater than the rack depth.

3.8.1.1 Rack construction. The equipment rack frames and mounting rails shall be constructed of structural aluminum or steel channels/angles mounted directly to the trailer frame. Each rack shall mount a maximum of two (2) cases. Racks adjacent to each other shall be constructed as a single unit, multiple rack, bay assembly. Each rack/bay shall be shock mounted at the base and along the upper rear rails (see 3.8.1.1.1). In racks where only one case has been mounted, the remaining space underneath shall be made into a storage area, and if space permits (no wheel wells), all necessary provisions to mount another case in the lower space shall be provided for use in future expansion. Each rack shall be rated to support a maximum load of 600 lbs. under all operating and transport conditions. Trim panels shall be installed on the face of the racks for the full height to cover all rack rails and spaces between the equipment cases and racks. The trim panels shall be constructed of 6061-T6 aluminum sheet at a minimum of .12 inches or steel of equivalent mechanical properties (tensile strength, yield strength, corrosion resistance, etc.). The trim panels shall be painted the same color as the equipment cases and finished to eliminate sharp edges and surface irregularities. The trim panels shall be attached to the rack by chrome plated or stainless steel hex head fasteners. All trim panels shall be interchangeable. Exposed sides of the racks shall be covered with 5052-H32 aluminum sheet at a minimum .06 inches or steel of equivalent mechanical properties. The sheets shall be louvered to aid in ventilating the equipment. The top and rear of the racks shall be open.

3.8.1.1.1 Shock and vibration isolators. Helical or elastomer base and stabilizer shock and vibration isolators shall be installed on all equipment racks to attenuate high frequency road shock and transient vibrations. Isolators shall be bolted between the rack frame and trailer structural members along the rack base and upper frame rail. Sufficient clearance between the racks and surrounding components and trailer structure shall be provided in accordance with the isolator manufacturer's instructions to prevent contact during all operating and

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transport conditions. Under the conditions specified in 3.3.1, the isolators shall attenuate road shock to 50%-70% of the peak amplitude and reduce vibration 75%-90% above 30 Hz. Operating temperature range of the isolators shall be from -65°F to 200°F. The location and number of isolators shall be determined based on individual isolator ratings and the isolator manufacturer's recommended installation specifications.

3.8.1.2 Equipment cases. The equipment cases to be mounted in the racks shall be Zero Corporation portable cases, part number FB191106R30. Approximate case dimensions are 30"H x 30"D x 21.5"W. Eight (8) cases shall be mounted per vehicle and will be provided to the contractor prior to the first article inspection. The equipment cases will hold the mission equipment which shall be operated from within the case with the covers removed while mounted in the racks. Total weight of cases and equipment are specified in 3.2.3. The case color shall be blue gloss enamel (check with Zero Corporation for the exact shade). Each empty case weighs approximately 66 lbs.

3.8.1.2.1 Cases 1 and 4. Cases 1 and 4 shall each be located at the operator's level with a sliding writing surface located directly under each case (see 3.8.6). Cases 1 and 4 shall be located immediately adjacent to or across from cases 2 and 3 at a walking distance between the case centers of 2 and 3 to 1 and 2 and 3 to 4 of no greater than 6 feet.

3.8.1.2.2 Cases 2 and 3. Cases 2 and 3 shall be located at the operator and lower levels respectively.

3.8.1.2.3 Cases 5 and 7. Cases 5 and 7 shall be each located at the operator's level at a distance between case centers of 5 to 2 and 3, 5 to 1, 5 to 4, 5 to 7, 7 to 2 and 3, 7 to 1, and 7 to 4 of no greater than 8 feet.

3.8.1.2.4 Cases 6 and 8. Cases 6 and 8 shall be located within the work area at convenient locations.

3.8.1.2.5 Case mounting. One or two operators shall be able to slide an equipment case in and out of the rack mounting rails. When in place, and with the cover removed, the equipment case shall be capable of being secured/latched by hand and without the use of tools. The latching devices shall not interfere with the operation of the mission equipment and shall firmly restrain the equipment cases, without vibration or shifting, under all operating and transport conditions. Storage areas shall be provided for the equipment case covers.

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3.8.2 Personal storage. A minimum closet space of 48 inches wide x 24 inches deep for the height of the semitrailer interior shall be provided for storage of suitcases, clothing, and associated personal items. The closet shall be constructed as a frame assembly covered with a minimum 20 gage cold rolled steel or aluminum of equivalent mechanical properties. A latching, full height double door with handles shall be provided. The door and closet opening shall be fully flanged. Five (5) double coat hooks shall be provided; three (3) equally spaced at the rear and one on each side. The coat hooks shall be stainless steel, aluminum or brass and shall project no greater than 1/2 inch from the inside wall. If the closet is located over a wheel well, then a false floor shall be constructed at wheel well height, with the space below the floor converted into a storage area with access through the false floor. Adjustable nylon straps shall be provided to secure up to 24 inch high suitcases under all operating and transport conditions. The closet shall be rated to hold at least 250 lbs. of storage.

3.8.3 Antennae storage. Space to store antennae contained in at least five (5) suitcases, each with the minimum dimensions of 30"L x 20"H x 10"W shall be provided. The area need not be completely enclosed, but adjustable restraining devices shall be provided to securely hold the suitcases under all operating and transport conditions. All shelves and mountings shall be rated to support the load imposed under all operating and transport conditions. Each suitcase weighs approximately 50 lbs.

3.8.4 Workbench. The workbench shall be constructed of 3/4-inch melamine component panel (MCP). The melamine component panel shall be black and all sharp corners rounded. The workbench structure shall be capable of supporting 300 lbs. Dimensional requirements are: minimum depth 30", minimum length 32", minimum height from floor 30" + 1". Minimum knee room dimensions are: height 25", width 20", depth 18". Three drawers with handles under the right hand side of the workbench shall be provided. Dimensional requirements are: length 12", depth 30", and height (upper) 6", (each lower) 12". Latches shall be provided to restrain drawers under all operating and transport conditions. The drawers shall be on slides with a safety stop and shall be fully flanged.

3.8.5 Interior hardware. All hardware on the cabinets, racks, doors, etc. shall be stainless steel, chrome plated steel, aluminum, or another corrosion resistant metal. Handles on drawers and doors shall be recessed whenever practicable, to eliminate projections on the surface. If handles cannot be recessed, they shall be designed such that they shall neither injure personnel nor entangle clothing. All hinges shall be continuous rod or hem type with stainless steel, bronze,

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or nylon insert sockets with a .125-inch minimum pin diameter. Latches on doors/drawers shall hold under all operating and transport conditions.

3.8.6 Writing surface. The sliding writing surfaces shall be covered in permanently bonded phenolic. A handle shall be provided and when retracted, the surface shall be flush with the rack doors. The surface shall extend at least 14" from the rack and shall be equipped with a stop.

3.8.7 RF panel. The RF connector panel shall consist of heavy gauge aluminum with jacks for 16 input plugs. The jacks shall all be type "N." The panel shall be located on the roadside of the trailer near the rear. The panel shall be accessible from the outside only and be covered with a hinged, lockable (pick-proof deadbolt lock), weatherproof cover (see 3.4.3.2). All exterior door hardware shall be stainless steel or chrome plated steel.

3.8.8 Wiring duct. Panduit, panduct, type E, or an equivalent snap in slot, PVC, wiring duct with cover shall be provided forming an interconnecting network with the faces of all equipment modules and the RF panel. The ducts shall be a minimum of 2" x 2" square. The ducts shall be installed along the upper; forward; horizontal rack frame members, down the forward; vertical; rack frame members, and connecting the RF panel to the wiring duct network. Wiring ducts shall be concealed from view within the rack assemblies and within the ceiling or wall structure. Installation shall allow for removal of the wiring duct covers in the racks, and access for wires between the face of the equipment modules to the rack wiring ducts. Pull wires shall be provided for all sections of wiring duct within the wall or ceiling structure.

3.9 Weight distribution. No less than 20% and no more than 30% of the semitrailer gross weight minus personnel shall be concentrated on the kingpin. In addition, the weight on the kingpin shall not overload the fully equipped prime mover with four passengers. Distribution of weight along either side of the semitrailer's longitudinal centerline shall be as equal as possible while meeting the tracking requirements of 3.3.1 and insuring that the semitrailer is level while being towed and parked. Use of ballast to achieve this distribution shall only be used upon permission of the procuring contracting officer.

3.10 Servicing and adjusting. Prior to acceptance of the semitrailer by the Government inspector, the contractor shall service and adjust the MTTs platform for immediate operational use. The servicing and adjusting shall include at least the following: proper

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adjustment of the brake system, proper functioning of all lighting, inflation of tires, cycling of the suspension system, air conditioning and heating system and all accessories, lubrication with grades of lubricants recommended for the ambient temperature at the delivery point. The semitrailer shall be conspicuously tagged to identify the lubricants and their temperature range.

3.11. Safety. All equipment or exposed portions of the equipment which are subject to extreme temperatures and inclement weather, and all rotating or reciprocating parts which are of such nature or located as to become a hazard to operating personnel, shall be insulated, fully inclosed, shielded or properly guarded.

3.12. Lubrication. Lubrication means shall be provided for all parts of the equipment normally requiring lubrication. Where the use of high lubrication pressure will damage grease seals or other parts, fittings with pressure release shall be used.

3.11 Workmanship. The quality and workmanship of all component parts, including fabricated parts, machined parts and castings shall be commensurate with sound manufacturing standards for similar equipment. The semitrailer shall be free from all burrs, sharp edges, die, tool and metal handling marks, rust, scale, leaks over torque drive screws, stripped threads and cracks. Improper manufacturing or assembling practices, defective components or parts and assemblies, which have been modified to overcome deficiencies shall not be furnished. Welded, bolted, and riveted construction utilized shall be in accordance with the highest standards of the industry.

3.12 Welding. The surface of parts to be welded shall be free from rust, scale, paint (except when welding rod is compatible to be used on painted surfaces), grease, or other foreign matter. Weld penetration shall be such as to provide transference of maximum design stress through the base metal juncture. Fillet welds shall be provided when necessary to reduce stress concentration. Welding rods shall be compatible to the metal being used. All critical arc welds shall be dye penetrant inspected. Adequate preparation of metal prior to welding of the semitrailer chassis and components shall be provided. Burned through areas shall not be accepted. All welds shall be chipped to remove scale. The following defects shall not be acceptable:

- (a) Welds which are ground flush with metal.
- (b) Slug or plug welding.
- (c) Undersize of fillet welds, overlaps, inadequate fusion and penetration, undercutting of weldments and vertical down welding.

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- (d) Unremoved slag and spatter.
- (e) Cracks.
- (f) Spot, tack or intermittent welds for strength.

Weld penetration shall be such as to provide transference of maximum design stress through the base metal juncture. Intermittent welding shall be permissible when in accordance with 3.12.1 through 3.12.3.

3.12.1 Workmanship specimens. Workmanship specimens shall be prepared by the manufacturer for the components to simulate all welding conditions. The specimens shall represent the minimum acceptable weld quality and cleaning procedure to be used in production. Upon submittal of these specimens by the contractor, the quality level and identification shall be subject to approval by the Government. The specimens shall be prepared using the welding procedures to be employed in production. Specimens prepared to represent multiple pass welds shall be made in such a manner as to leave at least two inches of each layer of weld metal exposed. Approval specimens shall be retained at the contractor's plant.

3.12.2 Welding procedures. The welding procedure shall be recorded prior to production of any weldment, but no procedure qualification other than workmanship specimens shall be required.

3.12.3 Factors. The factors listed below which are applicable shall be included in the recorded welding procedures:

- (a) Joint sketch.
- (b) Joint type and preparation.
- (c) Base metal type.
- (d) Filler metal; size and type.
- (e) Position of welding.
- (f) Arc-voltage, current range and polarity.
- (g) Manual or machine.
- (h) Travel speed, machine only.
- (i) Pre-heat and post heat.

3.13 Drawings. As directed in the procurement documents, the contractor shall provide a preliminary set of dimensioned general layout, transportability, and schematics of the proposed MTTs platform for approval. After approval or modification, any subsequent contractor modifications shall be submitted for customer approval. Upon completion of the MTTs platform, a level II drawing package for portions of the MTTs platform shall be provided as directed in the procuring documents.

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4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Government verification. Quality assurance operations performed by the contractor will be subject to Government verification at unscheduled intervals. Verification will consist of observation of the operations to determine that practices, methods, and procedure of the contractor's inspection are being properly applied. Failure of the contractor to promptly correct product deficiencies discovered shall be cause for suspension of acceptance until correction has been made or until conformance of product to specification criteria has been demonstrated.

4.3 Contractor first production vehicle inspection. The first MTTs platform produced under the contract shall be inspected by the contractor at his plant under the direction and in the presence of Government representatives. The purpose of the inspection shall be to determine conformity with the requirements of the contract. Acceptance of the first production semitrailer shall not constitute a waiver by the Government of its rights under the provisions of the contract. Upon acceptance of the first production MTTs platform, it shall remain at the manufacturing facility with the prime mover as a production sample and be the last vehicle shipped on the contract. The contractor shall maintain the MTTs platform in a serviceable condition for the duration of the contract.

4.3.1 Preliminary inspection. The first MTTs platform produced shall have a preliminary inspection prior to the installation of the interior panels less finish paint treatment, to verify that the following are furnished:

- (a) Rustproofing
- (b) Exterior electrical system
- (c) Power distribution panel and interior electrical systems
- (d) Landing gear assemblies
- (e) Axle alignment.

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4.3.2 Weight and payload capacity. The first production semitrailer coupled to the prime mover shall be weighed to determine curb weight and distribution of empty weight on the axle and kingpin. The weight distribution shall be computed using the empty weight and payload as specified in 3.2.2 and 3.2.3. Calculated imposed loads on the axle shall be utilized to ascertain that the tires, suspension, and axles are of adequate capacity to meet contract requirements.

4.3.3 Road test. To determine conformance to 3.3 through 3.3.3, the MTTs platform with simulated payload to gross combination weight, and at empty weight shall be road tested. The trailer, properly connected to its towing vehicle, for each payload condition, shall be driven not less than 50 miles over dry, level, improved roads at a sustained speed of 55 mph and not less than 20 miles over unimproved gravel roads at a speed of up to 15 mph. The semitrailer together with the prime mover shall be subjected to not less than 3 sudden stops at a speed not less than 20 mph on a substantially level, dry, smooth surface free of loose material. The MTTs platform shall be observed for conformance to the specified stopping distance and for observing the tracking requirement. The semitrailer will also be observed for its turning ability, tracking ability, and ability to maintain a 90° angle with the prime mover according to 3.3.2 without cramping or damage to either the trailer or towing vehicle. Upon completion of the road test, all equipment, components and accessories shall be examined for damage.

4.3.4 Water spray test. The first production semitrailer shall be water spray tested after the road test. The spray shall be delivered as specified in 3.3.5. During test, doors shall be closed as in normal travel position. The water drain holes shall not display more water than that specified in 3.3.5.

4.3.5 Electrical system. Electrical system shall be checked for conformance to the requirements using both shore power and generators. The electrical system shall be demonstrated with the air conditioner operating and then all lighting turned on. The lighting shall be observed for fade during the phase-in period of the air conditioning compressor. The power and electrical circuits shall be inspected to ascertain that the power load is in accordance with the specification requirements and the loads imposed.

4.3.6 EMI suppression verification. The manufacturer shall furnish a description of all interference suppression devices used to suppress the semitrailer EMI in accordance with SAE J551. Data shall be sufficient for visual determination that all required suppression devices are installed on the vehicle.

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4.3.7 Heating, ventilating, and air conditioning system. The heating, ventilating, and air conditioning system shall be operated to determine that the controls and system are functioning. Demonstration under specified exterior ambient conditions is not required. The contractor must supply calculations to show that the supplied system(s) can reach the conditions in 3.3.4.

4.3.8 Operational check. All MTTs platform items shall be examined for conformance to the specification. As a minimum, the operation of the following items shall be demonstrated:

- (a) Fifth wheel coupling/uncoupling with prime mover
- (b) Leveling of semitrailer
- (c) Running lights
- (d) Emergency brakes
- (e) Generator slide out trays
- (f) Fit of equipment case (case provided by Government for test)
- (g) Battery slide out tray.

4.3.9 Air test loading. At the discretion of the contracting officer, based on the results of the transportability analysis, the MTTs platform shall undergo an air test loading. The test shall be a static loading including loading, tiedown and unloading of the MTTs platform in the designated aircraft at the designated airport or base. All material handling equipment, accessories, and instructions to load the vehicle on the aircraft shall be supplied by the contractor.

4.3.10 Failure. Failure of the first production MTTs platform to meet requirements of the contract shall be cause for the Government to refuse acceptance of the vehicle until corrective action has been taken. In addition, subsequent MTTs platforms that do not conform to the accepted production sample vehicle shall be rejected until corrected. When corrective action has been taken, the MTTs platforms shall be inspected as specified herein.

4.4 Production vehicle inspection. Each production MTTs platform (less payload) shall be examined and hauled on approximately level road surfaces by the specified prime mover, by the contractor to assure that the vehicle will operate in accordance with the contract requirements. The contractor's inspection system shall as a minimum assure that the MTTs platform conforms to the physical, functional, and dimensional requirements and is capable of meeting performance requirements contained herein. The Government reserves the right to verify these procedures.

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4.5 Prime mover inspection. Each prime mover procured under the contract shall be inspected to determine conformance to 3.7 and Fed. Std. 307 requirements.

4.6 Inspection of the preparation for delivery. MTTs platform preparation for delivery shall be inspected to verify conformance to requirements specified in 5.1.

5. PREPARATION FOR DELIVERY

5.1 Vehicle processing. MTTs platforms shall be processed for shipment, from manufacturer's plant to initial receiving activity, in accordance with manufacturer's standard commercial practice.

6. NOTES

6.1 Intended use. The MTTs platform van covered by this specification is intended for non tactical use as a Mobile Tempest Test Set. Operation shall be worldwide.

6.2 Ordering data. Procurement documents should specify the following:

(a) Title, number, and date of this specification.

6.3 Definitions.

6.3.1 Improved road. An improved road is a smooth, hard surfaced road, such as a concrete or asphalt paved highway.

6.3.2 MTTs platform. The semitrailer and prime mover as one unit.

6.3.3 Unimproved road. An unimproved road is an unpaved, unstabilized road with an undulating surface having occasional chuckholes and exposed rocks.

Custodians:
Army - AT

Review activity:
Army - AT

Preparing activity:
Army - AT

Project No. 2330-A798

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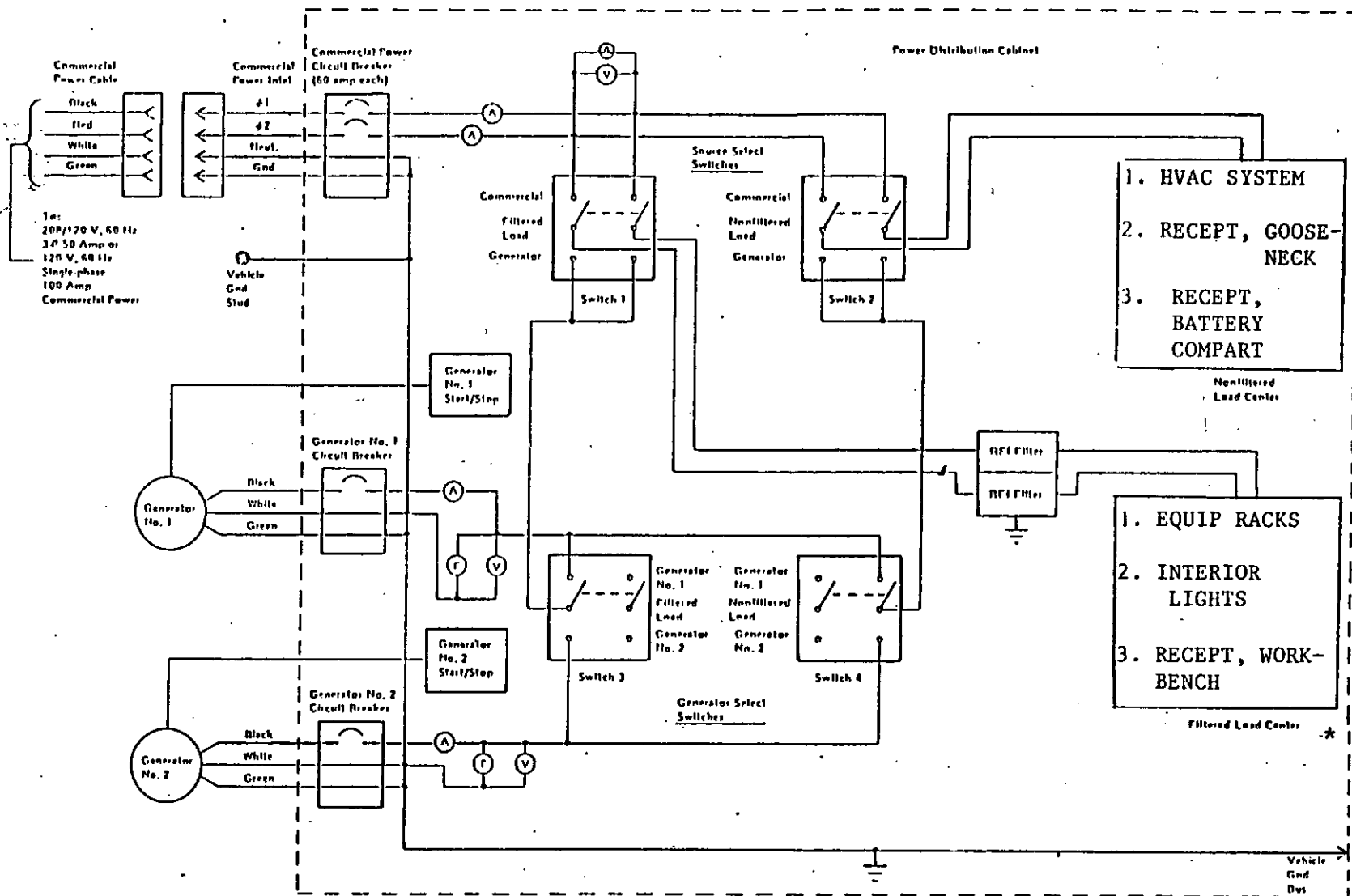
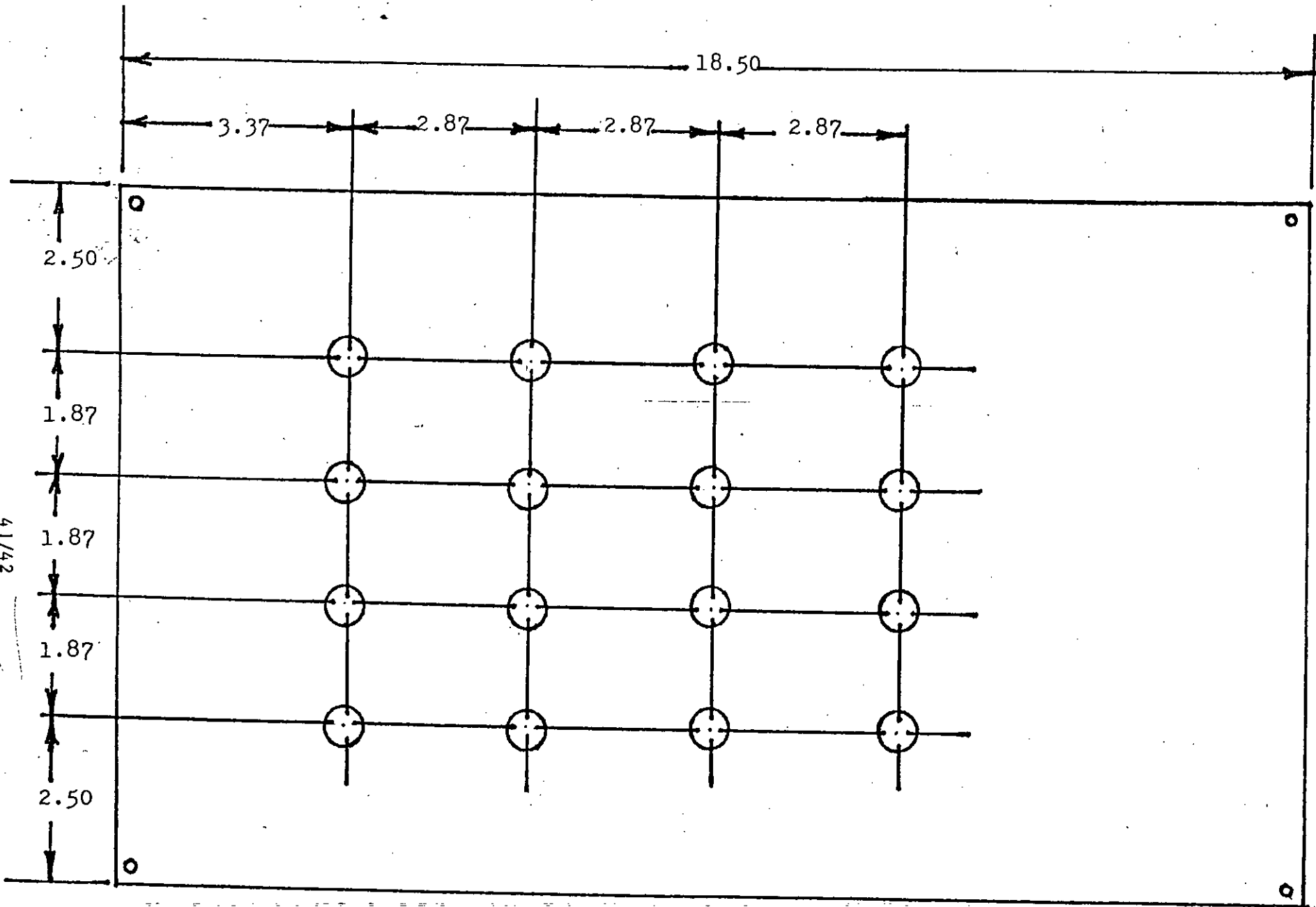


FIG. 1 - AC ELECTRICAL SYSTEM

*Note - Each item is on a separate circuit with each circuit having its own overcurrent protection.

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FIGURE 2 - RF CONNECTOR PANEL

- a. All holes type N
- b. All connectors UG-30 E/U
- c. All dimensions in inches

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER

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2. DOCUMENT TITLE

SEMITRAILER, VAN: MOBILE TEMPEST TEST SET (MTTS)

3a. NAME OF SUBMITTING ORGANIZATION

4. TYPE OF ORGANIZATION (Mark one)

 VENDOR USER MANUFACTURER OTHER (Specify): _____

b. ADDRESS (Street, City, State, ZIP Code)

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER (Last, First, MI) - Optional

b. WORK TELEPHONE NUMBER (Include Area Code) - Optional

c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional

8. DATE OF SUBMISSION (YYMMDD)

DD FORM 82 MAR 1426

PREVIOUS EDITION IS OBSOLETE.

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)