

HEADQUARTERS  
PHILIPPINE ARMY  
PA-TWG FORWARD TREATMENT UNIT  
Fort Andres Bonifacio, Metro Manila

PA-FTU

TECHNICAL SPECIFICATIONS  
FORWARD TREATMENT UNIT

<b>A. MOBILE SURGICAL TRUCK WITH MEDICAL EQUIPMENT</b>	
<b>Application:</b>	
<ul style="list-style-type: none"> <li>Intended for the primary purpose as a mobile casualty aid station to immediately support the AFP/PA in fulfilling a full spectrum of military operations.</li> <li>It will be prepositioned at Infantry Divisions Headquarters Forward Support Medical Company (FSMC) for possible rapid deployment to Brigade Support Area (BSA) level.</li> </ul>	
<b>General Description:</b>	
<ul style="list-style-type: none"> <li>The Mobile Surgical Truck with medical equipment or Mobile Resuscitative Surgical Care Unit (MRSCU) shall be basically composed of the standard provisions such as engine, cab and chassis, containerized medical/surgical unit, medical personnel camper trailer, medical equipment, tools and accessories designed using primarily the recommendations of the cited NFPA reference standard and other internationally accepted industry standards adaptable to Philippine conditions.</li> <li>Its engine shall be of diesel fed type with an appropriate power rating and at least Euro IV compliant.</li> <li>Its overall design features shall conform to applicable Philippine Land Transportation standards and requirements. All dimensions, sizes, gauges, ratings and calibrations shall follow the International System of Units (SI) measurement.</li> </ul>	
<b>Main Elements</b>	<ol style="list-style-type: none"> <li>Off Road Vehicle (Truck) with dual cab</li> <li>Containerized medical/surgical care unit with Folding Tent attachable to the containerized medical/surgical care unit</li> <li>Containerized unit (based on 15 foot ISO standard) on a single axle trailer with basic amenities (comfort room, beds, wash area and kitchenette) as living quarters and command center for FMT/FST</li> </ol>

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**A.1. Off Road Vehicle (Truck) with dual cabin**

The proposed means of transport shall be a brand new, left hand drive, dual cab, off-road vehicle with a design meeting the operational requirements in casualty management in the field and the military standards. It provides the possibility of moving the whole resuscitative/surgical care set in the field, along off-roads, which is particularly important for the implementation of the purposes for which the said medical unit is expected to be used; it should be emphasized that no commercial vehicle (not meeting military standards) will ensure similar mobility parameters in the field; also the proposed chassis of a logistics caravan vehicle is a field solution meeting military requirements.

Technical Data	Requirements
<b>a) Motor Engine</b>	
Engine Type	Diesel fed, six (6) Cylinders, Direct Injection, Turbo Charger, intercooled
Displacement (cc)	7,500 - Minimum
Power Output	Shall be at least 160 kilowatt (kW) or 215 horsepower (HP) that can handle a fully loaded and equipped vehicle with complete crew or at standard vehicle's top speed of 80 kilometers per hour (kph) or 50 miles per hour (mph).
Engine Revolution Per Minute (RPM) Speed	Minimum of 2,400.
Engine Torque (Nm)	Shall be within the 10,000-12000 range
Minimum Emission Standard of the Diesel Engine	At least Euro IV Compliant
Engine Transmission	Shall be Manual Type, appropriate to its service function with at least six (6) speed forward and one (1) reverse gear
<b>b) Cab and Chassis</b>	
Truck gross dimensions within the following limits:	
Overall Length(mm)	At least 9,000
Overall Width(mm)	At least 2,490
Overall Height(mm)	At least 3,050
Gross Vehicle Weight Rating (GVWR)	Shall be at least 22,500 kg
Payload Capacity	Not less than 11,000 kg
Towed Load Capacity	Min of 6,000 kg
Steering	Shall be left hand drive and power assisted
<b>c) Brake System shall be provided and composed of the following independent system:</b>	
Service/Main Brake	As per Manufacturer's standard
Parking Brake	Parking brake shall control the rear wheels, or all wheels and shall be of the positive, mechanically actuated type
<b>d) Wheels, Axle and Suspension System</b>	
Wheel Configuration	Wheel configuration should be able to withstand the

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	load during the service of the vehicle and not exceeding its axle loading
Ground Clearance	Axle housing and any components other than the wheels and tires shall clear the road surface by at least 254mm (10 inches).
Suspension	Suspension shall be as per manufacturer's standard
<b>e) Rim and Tires</b>	
Rim and Tire Size	Shall be appropriate to fully loaded Resuscitative/Surgical Care truck and equipped with complete medical crew condition and speed.  Rim and Tire Size: 9.00 – 20.00 Lug type: minimum 14 PR/G ply
Spare Rim and Tire	Shall be provided as a reserve to replace flat tires. Its storage, as per applicable manufacturer's standard shall be provided and when located under the chassis, maintains a minimum road clearance of 254mm (10inches) to avoid any damage when maneuvering over humps and any inclined road surface on its upward or downward drive.
Flaps and Tubes	Shall be provided in all tire sets
Mud Guards	Shall be provided in all wheel placements
<b>f) Fuel Tank shall have the following features:</b>	
Tank Capacity	Shall be at a minimum of 300ltrs
Filler Cap	Shall be with lock and impressed with the words "diesel fuel"
<b>g) Power supply System</b>	
Alternator	Shall be 28V 80A or its equivalent appropriate rating as per manufacturer's design which is covered by manufacturer's certificate of serviceability.
Battery	24V (2 x 12) 6TN type with an ampere-hour rating within the range of 80A to 120A duly supported with its load calculation
<b>h) Bumper/Towing Eyes/ Hooks/ Lifting Hooks/ Brackets</b>	Shall be provided with heavy duty bumper, mounted and installed on the chassis frame to protect the front of the vehicle.  Shall be provided with heavy duty towing eyes or hooks installed to each chassis rail both at the front and rear of the vehicle.
<b>i) Freight Elevator</b>	Shall be provided with freight elevator (platform) installed in the rear part of the frame and under the container interframe, preventing damage to the main frame with the unit while transporting container in an off-road area.
<b>j) Driver's and Crew Cabin</b>	The cabin shall be a double compartment fully enclosed and air-conditioned for safety and comfort with two (2) rows seating capacity to accommodate at least seven (7) passengers which include the driver, two (2) front seat passengers, and four (4) crews at the rear (2 <sup>nd</sup> row) with sufficient headroom and

	legroom ergonomically designed for Asian built medical responder.
	The cabin shall have a total of four (4) service doors, composed of two (2) on each side serving each row
	In case of a bench seat for the crew, it shall be designed to allow it to be lifted up or of appropriate design for storing equipment under the bench and each crew shall be provided with individual seatbelt.
	The front row of cabin shall be provided with sun visors and console box.
	Heavy duty rubber matting shall be provided.
	AM/FM Radio suitable for Philippine Frequency range with external antenna shall be provided.
	Ultra-High Frequency (UHF) Digital Mobile Radio with 380 – 400 Mhz range shall be provided.
<b>k) Driver's Instrumentations</b> - Shall be as per manufacturer's designed with the following basic features as applicable, to wit:	
Switches/Control	a. Ignition Switch
	b. Hazard Signal Switch
	c. Directional Signal Switch
	d. Headlight dimmer Switch
	e. Windscreen Wiper Operation and Washer control Switch
	f. Air-conditioning Controls
Gages/Gauges	a. Fuel Gauge
	b. Engine Oil Pressure Gauge
Monitor Meters	a. Engine Speed Tachometer
	b. Speedometer and Odometer
Lights and Indicators	a. Dash Lights
	b. Cab Interior Lights
	c. Cab Console Light
	d. Low Oil Pressure Indicator Light
	e. Parking Brake Indicator Light
	f. Indicator for battery charging
	g. Reverse Audible Alarm

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**A.2. Built-Up Features for Containerized Resuscitative / Surgical Care Unit with an Attached Tent System**

A resuscitative and surgical unit housed in a 20-foot special containers (fold-out - increasing the working surface to approx. 20 square meters) corresponding in terms of functionality and design to the requirements of the military rapid response service; containers can be simply and quickly loaded onto means of transport using built-in, automatic hydraulic props; container resuscitative/surgical care unit can be used both in the loaded position on the truck or after being unloaded from the truck. Another extra space for medical care can be added when attached tent is deployed.

Technical Data	Requirements
<p><b>General Description</b></p>	<p>The Container structure shall be of Manufacturer's Standard</p>
	<p>Secured compartment/cabinets shall be provided and so designed to carry various kind of Medical equipment, medical supplies, tools and accessories as well as appropriately illuminated as per applicable manufacturer's standard. List of Equipment are listed in detail in <b>ANNEX A. MRSCU Equipment</b></p>
	<p>Equipment holder/racks shall be firmly attached and so designed that equipment will remain in place while the vehicle is in motion and permit quick usage. Necessary drawers and shelves shall be provided to accommodate the storage of equipment. Drawers and shelves shall be manufacturer's standard.</p>
	<p>The container shall have a mechanically expandable body on two sides increasing the working surface to a minimum of 15 square meters</p>
	<p>Container can be simply and quickly loaded onto means of transport using automatic telescopic hydraulic support with pads that will not require additional means of transport (cranes, forklifts etc) and manpower as well as in case of rapid evacuation in emergency situations</p>
	<p>Container operating rooms can be used both in the loaded and position on the truck and after removing from the truck</p>
	<p>The interior walls shall be impact resistant and waterproof. Likewise, the inner wall surface and flooring shall be mold resistant and can be disinfected with hospital grade cleaners/disinfectant.</p>
	<p>A non-slip vinyl flooring shall be installed</p>
	<p>Has transport pockets that can accommodate an extra air-condition single tent that can accommodate another minimum 8 persons in bed.</p>
	<p>Has stairs/steps for ingress/egress with led/pin light or per applicable manufacturer's standard.</p>
<p><b>Time to setup the container</b></p>	<p>Not more than 1 hour</p>

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<b>(using the complete crew):</b>	
<b>Time of unfolding and preparing for work the entire set - with the attached tent (using the complete crew):</b>	not more than 2 hours
<b>Container Dimensions</b>	Overall Length (mm): Maximum 6,096
	Overall Width (mm): At least 2,400
	Overall Height (mm): At least 2,500
<b>Height</b>	Must be able to clear the minimum height clearance on underpasses as stipulated in DPWH DO# 53 series of 2016 dtd 23 Feb 2016.
<b>The container shall have built-in operational equipment</b>	Power generator of at least 24 Kw 3x 400V, providing electrical supply to the entire set;
	Two (2) air conditioners with at least 6.0 kW cooling and condensers on the container front wall
	Air filtering unit (with HEPA filter or better) sustaining required purity of the air in the care room;
	Standard 220 V Socket panel (universal type) for connecting to the external electrical supply network 24 kW/3x380 V.
	Uninterruptible power supply (UPS) for emergency power supply;
	Dynamic drying system to secure the necessary humidity conditions for storing supplies;
	With an Eight (8) stage filtration system (See Annex E: Trailer Specification For The Generator And Water Dolly) for drinking water treatment with a capacity of up to 100 l / h or better
<b>Utility Installations</b>	Clean water tank with a capacity of minimum 400 liters, with a connection hose to supply water from the external network/source;
	Diesel tank minimum of 150 Liters (for use of the power 24 kW generator set);
	With provision of hose and medical waste tanks for discharging operating room biological waste water
<b>Attached tent system</b>	Shall have folding tents designed to be attached to the containerized unit.
	The tent can accommodate extra 8 persons (minimum) in bed.
	It shall be designed with foldable screen/net and with zipper or magnet to protect all personnel from any insects
	It has its own HVAC system and LED lighting
	Well ventilated when air-conditioning system is not in used
	Has provisions for a water system
	Made of aluminum frame (or better), free-span or no

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<b>Spare tools</b>	<b>Details indicated in Annex D: List of Spare Tools &amp; Kits</b>
<b>A.3. CAMPER TRAILER</b>	
<b>General Description</b>	A 15 footer containerized unit that is intended to provide adequate rest area as well as Command and Control area for the Medical Crew/personnel
	With Canopy on both sides to serve as shade with foldable screen/net and with zipper or magnet to protect all personnel from any insects
	Shall be designed with window for ventilation when AC unit is not used. Window shall be equipped with net to protect from insects.
	Secured compartment/cabinets shall be provided and so designed to carry various kind Equipment and accessories. List of Equipment are listed in detail in <b>ANNEX B .Camper Trailer Equipment</b>
	Equipment holder/racks shall be firmly attached and so designed that equipment will remain in place while the vehicle is in motion. Necessary drawers and shelves shall be provided to accommodate the storage of other equipment. Drawers and shelves shall be manufacturer's standard
	With reinforced insulation against the heat of the sun to ensure an acceptable room temperature even when air conditioner is not in used
	Transported on a towable single axle trailer
<b>Container size</b>	15 footer
<b>Gross Vehicle Weight Rating (GVWR)</b>	6,000 kgs maximum
<b>The Trailer shall have built-in operational equipment</b>	Power generator of 8.0 kW / 3x400V, securing 24-hour power supply to trailer equipment
	Air conditioner with 6.0 kW cooling capacity
	Air ventilation device, securing the required exchange and air purity in the inside of the trailer
	<b>Standard 220V</b> Socket panel ( <b>universal type</b> ) for connecting to the external electrical supply network 24 kW/3x380 V.
<b>Floor Installation</b>	With Transport Pockets
	Clean water tank with a capacity of minimum 100 liters, with a connection hose to supply water from the external network/source;
	Diesel tank minimum of 100 Liters (for use of the power 8 kW generator set);
	With installed hose for discharging wastewater.
<b>Metal Finishing, Painting, Identification and Markings:</b>	
<b>Technical Data</b>	<b>Requirements</b>
	All exposed ferrous metal surfaces shall be painted

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<p><b>1. Painting</b></p>	<p>with "Olive Drab ASCOM Green" code 9-650-G except those surfaces that are chrome plated or made of stainless steel and the rear portion of the vehicle shall be provided with the standard Emergency Red and White reflectorized sticker made of prismatic tape engineer grade in a chevron pattern sloping downward at an angle of 45 degrees.</p> <p>All bright fittings shall be hard plated with chromium and surfaces shall be "Dull Finished" conforming to the Philippine Land Transportation Office (LTO), Department of Transportation and Communication (DOTC) requirements.</p>
<p><b>2. Anti-rust Proofing/Undercoating</b></p>	<p>Anti-rust proofing/undercoating shall be applied.</p>
<p><b>3. Phil Army Logo Placement</b></p>	<p>For purpose of identification, Phil Army Logo (standard design to be provided by Phil Army) shall be made of prismatic tape engineer grade reflectorized sticker or equivalent international standards shall be conspicuously emplaced on each side of the driver's cabin door (front cab sections).</p>
<p><b>4. Agency Name Marking</b></p>	<p>The agency name of "HUKBONG KATIHAN NG PILIPINAS" Markings (design to be provided by Phil Army) made of prismatic tape engineer grade reflectorized sticker or equivalent international standards shall be conspicuous emplaced in rear and each side of the container body.</p>
<p><b>5. "RED CROSS" sign</b></p>	<p>The "RED CROSS" sign (design to be provided by Phil Army) made of prismatic tape engineer grade reflectorized sticker or equivalent international standards shall be conspicuously emplaced in top and both side portion of the container</p>
<p><b>Standard Accessories, Devices, Tools and Auxiliary Equipment</b></p>	
<p><b>1. Accessories and Devices</b></p>	
<p>a. Lighting and Warning Devices shall be composed of</p>	
<p>1) Emergency flashing/ warning LED light bar with an amplifier and microphone Public Address System with four (4) electronic tone siren</p>	<p>1 set</p>
<p>2) 150mm Standard Emergency Electric Motor Siren</p>	<p>1 set</p>
<p>3) Back – Up Alarm and Lights</p>	<p>1 set</p>
<p>4) Fog lights not less than 100 watts</p>	<p>1 set</p>
<p>5) Spotlight: Capacity not less than 100watts DC shall be installed in the rear of the vehicle/container connection</p>	<p>1 set</p>
<p>6) Head Light (bright and dim)</p>	<p>1 pair</p>
<p>7) Front Clearance Light</p>	<p>1 pair</p>
<p>8) Turn Signal Light – Front</p>	<p>1 pair</p>
<p>9) Turn Signal Light – Rear</p>	<p>1 pair</p>
<p>10) Hazard Flasher – Front</p>	<p>1 pair</p>
<p>11) Hazard Flasher – Rear</p>	<p>1 pair</p>
<p>12) Park Lights - Front</p>	<p>1 pair</p>
<p>13) Park Lights – Rear</p>	<p>1 pair</p>

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14) Tail Lights	1 pair
15) Control Panel Lights	2 sets
16) Overhead Reading Spotlights at the Driver's Compartment	1 set
b. Mirrors and Optical Reflectors shall be composed of:	
1) Side Mirrors (adjusted by the Driver and Cabin Passengers)	1 pair
2) Driver's Compartment Rear View Mirror	1 set
3) Front Bumper Mirror	1 Set
4) Side Optical Mirror	1 Set
5) Front Optical Reflectors	1 pair
6) Rear Optical Reflectors	1 pair
<b>2. General (Suppression) Tool</b>	
a. Fire Extinguisher, 4.5 kgs (10 lbs), ABC Type	1pc
<b>3. Auxiliary Equipment/Devices</b>	
a. UHF Digital Portable Radio with 380 - 400 MHz range and extra battery pack	3 pcs
b. Early Warning Device (LTO Standard)	1 set
c. Battery Series Cables with End Clamp, 24-volts rating	1 pair
d. Towing Chain/Cable with Lock Nut (appropriate tonnage)	1 set
e. Hydraulic Jack with handle (appropriate tonnage)	1 set
f. Tire Wrench	1 set
g. Road Safety Cones, orange in color, with at least 2-inch luminous rings	4 pcs
h. Wheel Blocks	2 pcs

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B. MEDICAL CARE EQUIPMENT (RESUSCITATIVE)	
Technical Data	Requirement
Special Medical Evacuation Equipment (SMEE)	List of Equipment are listed in detail below
<b>ITEM 1</b>	<b>Special Medical Emergency Evacuation Device +Wheeled Litter Carrier</b>
Descriptions:	Light and stable resuscitative device, equipped with two large non-pneumatic wheels designed for transporting injured person on rugged terrain The dimension and weight of the Medical Equipment attached to this device (listed below) will be as per manufacturer standard provided that the placement of the equipment on the designated places in SMEED will not be affected.
Feature(s):	Flat-free tires Metal hand wheel system for easy grasp and quick adjustment at least 500lbs weight limit With puncture free wheels
Certification	-North Atlantic Treaty Organization (NATO) certified
Weight	not more than 25 kgs
Quantity:	1 set
<b>ITEM 2</b>	<b>Cardiac Monitor/Defibrillator</b>
Description:	Military Grade Multi-Parameter Monitor/ Defibrillator
Feature(s):	External pacing, STEMI Procedure Rectilinear Biphasic Waveform NVG (Night Vision Goggle) Friendly, Standard, High-contrast With Integrated Wi-Fi, Bluetooth, and USB 1 to 10, 15, 20, 30, 50, 75, 100, 120, 150, 200 joules Charge time must be less than 7 secs CPR Dashboard with Real-time CPR help
Certification:	-Military Grade -Passed the Military Standard Drop Test and Vibration Test <b>- Air Worthiness Release (AWR) Certified</b>
Quantity:	1 set
<b>ITEM 3</b>	<b>Mechanical Ventilator</b>
Description:	-Military Grade Portable Critical Care Ventilator Operation Mode: AC, SIMV, CPAP
Feature(s):	Can Guide Operator through On-screen commands when responding to alarms Can operate With or Without an Oxygen Tank for supply Breath Target: Volume and Pressure Support
Certification:	- <b>Air Worthiness Release (AWR) Certified</b> : Approved for most U.S. Military aircraft - USFDA Pre-market Approved (PMA)
Quantity:	1 set

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<b>ITEM 4</b>	<b>Portable Electronic Infusion Pump</b>
Description:	medical device used to deliver fluids into a patient's body in a controlled manner
Feature(s):	Can deliver at least an automatic 250ml bolus at the push of a button Has a flow rate setting of 0.2, 1, 2, 4, and 6 liters/hour Operating time at least 8 hours Military personnel can place IV bag on or even below the patient to simplify extraction or transport Ruggedized, easy to use
Certification:	Vibration Test (US Mil standard) Electromagnetic Compatibility (EMC) (US Standard)
Quantity:	1 set
<b>ITEM 5</b>	<b>Multi-function aspirator and customizable suction device</b>
Description:	Multi-function aspirator and customizable suction
Feature(s):	-Multifunction -Can be portable and customizable suction -Operates on continuous 2 hours to 90% Capacity
Certification:	-Air Worthiness Release (AWR) Certified. -Approved for most U.S Military Aircraft
Quantity:	1 set
<b>ITEM 6</b>	<b>Automatic CPR Device</b>
Description:	Non-invasive Cardiac Support Pump
Feature(s):	- Rescuers can perform High-quality CPR while going through challenging spaces and angles -Easy to apply - Automatically calculates size, shape, resistance of each patient's chest -With data that can be captured and downloaded for debriefing of resuscitation events
Certification:	USFDA Pre-market Approved (PMA)
Quantity:	1 set
<b>ITEM 7</b>	<b>Litter, Tactical, Fourfold, Meshed</b>
Description:	Wheeled device used to carry a litter in transporting injured person quickly
Feature(s):	Fourfold aluminum pole, nylon mesh type Three-point restraint for casualty Can be folded for easy carriage and storage Compatible with wheeled litter carrier
Color:	Olive Drab or black
QUANTITY:	1 set
<b>ITEM 8</b>	<b>Combat Medic Aidman's Kit (CMAK)</b>
	(See ANNEX A: Attachment 4 for complete items)
Quantity	2 sets
<b>ITEM 9</b>	<b>Medic Trauma Bag (MTB)</b>
	(See ANNEX A: Attachment 2 for complete items)
<b>ITEM 10</b>	<b>Survival Bag</b>
	(See ANNEX A: Attachment 3 for complete items)
Quantity	2 set
<b>ITEM 11</b>	<b>Portable Oxygen Concentrator</b>
Description	Shall be capable to concentrate oxygen from ambient air to deliver therapeutic oxygen to patients.

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Feature	military grade, portable
	Produces 3,000 mL of oxygen
	Can Operate via wall outlet (AC) power or by rechargeable battery
	High operating altitude up to 18,000 feet
	Robust and reliable in extreme temperature and harsh conditions (sand and dust)
	CE or FDA approved
Quantity	1 set

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<b>C. OTHER EQUIPMENT (AMENITIES)</b>	
<b>C.1 ENHANCED FRAME TYPE TENT UNIT</b>	
<b>QUANTITY PER UNIT</b>	<b>Eight (8)</b>
<b>DESCRIPTION</b>	<b>SPECIFICATIONS</b>
	Modular, Durable, Easy to transport, erect, dismantle and maintain for use on Field Hospital and Mobile Medical Treatment Facilities of the Philippine Army.
<b>BASIC REQUIREMENTS</b>	Air-conditioned enhanced frame type tent capable of maintaining maximum 23 degrees Celsius internal temperature. Each tent should be capable of being set up to any types of terrain like asphalt, rocky soil, mud and turf.
<b>SPECIFIC REQUIREMENTS</b>	
<b>MATERIAL</b>	
<b>a. Medical Tent Cover</b>	The cover and end panels shall be made from waterproof material, rip-stop and tear resistant, UV and mildew resistant with the following specifications indicated below:
	The Fabric material shall be self-extinguishing when the source of a flame is taken away.
	The material shall not contain Penta-chloro-phenyl-laurate.
<b>b. Medical Tent Frame</b>	The frame system shall be made from a stainless steel, high quality aluminum or combination of both material, no poles at the center of the tent and with minimal tools to set up the whole unit.
<b>c. Tent Inclusion</b>	Each tent shall have non slip flooring
	The hard sub-floor shall be composed of fire-retardant material
	Tent shall include a lighting and electrical system with the following items: At least 10 watts led lights Four (4) pieces 4 gang universal outlet (220V) (1) Interior 32 Amp distribution box
	Each tent should be capable of being set up to any types of terrain like asphalt, rocky soil, mud and turf.
<b>Dimension</b>	The Eight Tents per unit design shall consist of one (1) Major Tent and seven (7) Minor Tents, with the Major tent having a floor area of 35-45 m <sup>2</sup> or large enough to accommodate 8-10 cot beds and the remaining minor tents having a floor area of 15-25 m <sup>2</sup> , should be

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	<p>modular and can be attached to the major tent.</p>
<p>Design</p>	<p>Uses a tent technology that can provide ambient temperature that can be desirable by any person even without air-conditioning system and in humid tropical climate To avoid very high temperature, tent system can be modified to increase shade, ventilation and thermal capacity.</p> <p>Modular type that can be linked to other tents in all possible orientation, either sides, front and back.</p> <p><b>Design of each tent</b></p> <p><b>1<sup>st</sup> tent</b>  <b>Triage tent</b> – 35-45 sq meter that can accommodate 8-10 cot beds. With (HVAC), water and lighting system. With decontamination shower area at the entrance of the triage room that can be activated/ assembled when needed. Equipped with at least two shower heads with independent handheld sprayer (at least 5 meters in length). The shower area can be configured to accommodate fully, semi and even non-ambulatory patients. It will have privacy enclosure</p> <p><b>2<sup>nd</sup>, 3<sup>rd</sup> &amp; 4<sup>th</sup> Tent</b>  <b>Casualty tents</b> - with an area of 15-25 m<sup>2</sup>, that can accommodate 6-8 cot beds each. With walls that can be opened wide to outside air. Equipped with HVAC, water and lighting system.</p> <p><b>5<sup>th</sup> Tent</b>  <b>Personnel billeting tent</b> - with an area of 15-25 m<sup>2</sup>, which can accommodate 6-8 cot beds. With walls that can be opened wide to outside air. Equipped with ventilation and lighting system.</p> <p><b>6<sup>th</sup> tent</b>  <b>Kitchen/dining area</b>- with an area of 15-25 m<sup>2</sup> and a canvas sleeve on the roof to place the chimney/exhaust. With portable work/dining tables and benches. With portable kitchen/dining equipment, ventilation, water supply and lighting. With walls that can be opened wide to outside air.</p>

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	<p><b>7<sup>th</sup> tent</b>  <b>Shower/toilet/washing area-</b> 15-25 m<sup>2</sup> area, equipped with automatic downpipes / sewage system. With at least two (2) shower cabins with handheld shower and side seat. With at least two (2) sinks and at least two (2) toilets that use the latest technology in wastewater management. The tent can be exposed to sunlight and air to prevent mildew and provide adequate ventilation. Equipped with water supply and lighting system.                  With a separated decontamination shower area, with a private enclosure/changing room and a side wall that can be opened outwards. Equipped with at least three shower heads with an independent sprayer (at least 5 meters long). A decontamination shower area configured to accommodate fully, partially, and even non-ambulatory patients.</p> <p><b>8<sup>th</sup> tent</b>  <b>Storage/morgue/miscellaneous area</b>                  15-25 m<sup>2</sup>, with portable / foldable cabinet system. Equipped with ventilation and lighting system</p>
Entrance/Exits	With heavy duty Velcro closures with meshed covers against mosquitos or small insects
Divisions	Can be divided into two areas with detachable flaps/partition wall, with meshed second layer to protect from mosquitoes or smaller insects
Windows	Strategically placed for better ventilation once air conditioning system is off, with meshed layer to protect against mosquitoes and smaller insects. Also, with roll down black out cover
Insulation	With liner that reflects heat and/ or insulations that maintain ambient room temperature even when air-conditioning system is not in used. It should be strongly secured to the main frame.
Lighting and Electric outlets	Shatterproof LED lights and electric outlets (distribution panels) to include ports for electronic gadgets
Waste Disposal system	With foldable tanks made of high resistance polyester fiber (or better), with both sides treated with PVC (or better). Designed to store at least 100 gallons of water drainage and human waste. Must be high resistance to tear, rot proof and mold resistant The corner of the tank (bladder) are finished

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	with screwed metallic corners that can be anchored to the ground
Provisions for air-conditioning system	With air distribution plenum
Provisions for water system	With water distribution system (See ANNEX F: Forward Treatment Unit Water System and Waste Water System Diagram)
Flooring	With non-slip heavy duty vinyl (or better) floors (MIL-spec). Each end is sealed with the edges of the tent to prevent intrusion of dust and insects, water. But in case of washing the floor it can be detached for proper water drainage
Medical Equipment	<b>See Annex A BTF equipment</b>
Assembly and Disassembly Time	Can be performed by not more than 6 persons for not more 30 minutes
Packed dimensions	Compact enough to be hauled with the water system, generator and air conditioning system on a trailer that can be towed by a pickup truck
Marking	Internationally accepted Medical logo
<b>ADDITIONAL REQUIREMENTS</b>	With provisions for shower for 3 persons at a time
	With provisions for latrine (preferable the latest technology for human waste disposal) for male and female
	With provisions for cooking and dining area (preferably with field kitchen equipment and utensils)
	With spare parts and field parts readily available and manual of instructions
Painting	All materials and exposed ferrous metal surfaces shall be painted with "Olive Drab ASCOM Green" code 9-650-G
	All bright fittings shall be hard plated with chromium and surfaces shall be "Dull Finished" conforming to the Philippine Land Transportation Office (LTO), Department of Transportation and Communication (DOTC) requirements.
Anti-rust Proofing/Undercoating	Anti-rust proofing/undercoating shall be applied.
Phil Army Logo Placement	For purpose of identification, Phil Army Logo (standard design to be provided by Phil Army) shall be made of prismatic tape engineer grade reflectorized sticker or equivalent international standards shall be conspicuously emplaced on entrance of the tent.
Agency Name Marking	The agency name of "HUKBONG KATIHAN NG PILIPINAS" Markings (design to be provided by Phil Army) made of prismatic

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	tape engineer grade reflectorized sticker or equivalent international standards shall be conspicuous emplaced in rear and each side of the side of the tent.
"RED CROSS" sign	The "RED CROSS" sign (design to be provided by Phil Army) made of prismatic tape engineer grade reflectorized sticker or equivalent international standards shall be conspicuously emplaced in top, entrance and exit, and both sides portion of the tent
<b>ACCESSORIES</b>	Details indicated in Annex D: List Of Spare Tools And Kits
<b>STANDARD CERTIFICATION REQUIREMENTS</b>	
Testing passed to meet	60 MPH sustained wind load (80 MPH gust)
	15 lbs/sq ft snow load (for foreign deployment)
	4"/hour rain with 60 MPH winds (75 MPH gusts)
Iso certification	Military standard
Shelf life:	15 years
Warranty	See Annex C: Warranty Service
<b>C.2 AIR CONDITIONING UNIT</b>	
QUANTITY PER UNIT	Four (4)
DESCRIPTION	SPECIFICATIONS
<b>BASIC REQUIREMENTS</b>	One (1) Air condition unit that is heavy duty, portable units, brand new. It is allowed to achieve required output parameters by sets of devices operating parallely. The central HVAC system should provide appropriate working conditions in a set of connected tents by distribution and circulation of heated / cooled air.
<b>SPECIFIC REQUIREMENTS</b>	
Power Source	220-240V Compatible with the accompaniment generator set
Noise Sound	Maximum 64 dB (A)
Features	Is compatible and with air distribution channels to provide adequate air condition system to at least to the accompaniment 8-tent system
<b>COOLING REQUIREMENTS</b>	
Cooling Capacity (Airflow)	Airflow min. 2000 m <sup>3</sup> /h (min 600 m <sup>3</sup> /h in ventilation only mode)
	5-16 kW ( 6.7 – 21.4 HP)
Heating capacity	6-17 kW (8 – 22 HP)
Cooling Power	Min 250 watts
Energy consumption efficiency	class min. A+
Cooling Coverage (Area)	Min 100 sq. m
<b>FEATURES</b>	Sturdy manual control

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	Can maintain an indoor temperature maximum 23 degree Celsius.
	Can withstand all-terrain transport and harsh weather conditions
<b>ADDITIONAL REQUIREMENT</b>	Two (2) Copies each of Operating Manual
	Three (3) portable air-condition unit with at least 3 HP
<b>STANDARD CERTIFICATION REQUIREMENTS</b>	
ISO CERTIFICATION	Compliant to ISO 9001: 2015 or latest ISO Standards for Evaporative Air cooler
WARRANTY	See Annex C: Warranty Services
<b>C.3 BRAND NEW 75KVA GENERATOR SET (SILENT TYPE), STAND BY with TRAILER</b>	
<b>Quantity (per unit):</b>	<b>One (1)</b>
<b>DESCRIPTION</b>	<b>SPECIFICATIONS</b>
<b>ENGINE</b>	
Rating	Min 75 KVA (60KW) Silent Type, 3-phase, Standby
Condition	Brand New
Fuel Type	Diesel
Number of Cylinders	Multi-Cylinders
Type of Cooling	Water cooled
Fuel Delivery Type	Direct Injection
Induction System	Turbo Charged
Type of Governor	Mechanical Type
Number of phases	3 phases, 4 wires
<b>ALTERNATOR TYPE</b>	
Voltage	Min 220V, 3 Phase
Exciter Type	Brushless
Insulation Class	Class H
Bearing Quantity	Single
Power Factor	80% pf to 1.0 pf
Control panel	Key ignition starts and off switch, Voltmeter and Phase Selector Switch
	Ammeter with selector switch, charging ammeter
	Suitable Scaled Frequency meter
	Coolant Temperature Gauge
	Lube Oil Pressure Gauge
	Auto Crank Engine Protection Module
	Water Temperature Gauge
Standard accessories	Indicating Alarm Light and Sound
	Starting Batteries (maintenance free batteries) with battery cable
	24V or 12V axial type starter motor, lead acid type battery charger
	Heavy duty Radiator with Fan and fan guard
	Engine Hour Meter
	Exhaust residential Silencer with complete bellow and flange
	Fuel tank with min capacity of four (4) hours
Automatic Voltage regulator	

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	Acoustic Enclosure (Sound level Shall have less than 75db (A) at 1 meter Skid base, Heavy duty
Certification requirement	Compliant to ISO 9001:2015 Standards IEC Certificate that the labels and fixtures are in compliant with International Standards
Spares	Fuel filter Air filter Automatic voltage regulator Automatic battery charger Fuses
Tools	Annex D: List Of Spare Tools And Kits
Manuals/drawings	Four (4) copies service and maintenance manuals Four (4) copies parts manual Four (4) copies operator's manual Four (4) copies genset wiring diagram
Personal protective equipment (PPE)	3 sets hard hats; Eyes Goggles, Reflectorized Vest, Working Gloves, and First Aid Kit conformed to International Standard
Training	A formal training for five (5) operators and technicians of not less than (5) days on the proper operation and maintenance of the equipment shall be conducted Training plan for the maintenance and operation of the equipment
Maintenance plan	3-year annual maintenance plan for the equipment shall be submitted
Other features	With durable cover for dust, rain, and storage Unit should be durable and rugged especially during transportation With trailer (see Annex E: Trailer Specification for Generator and Water Dolly) that can also carry atleast one packed tent

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<b>C.4 COT BED FOLDING</b>	
Quantity (per unit):	<b>32</b>
<b>DESCRIPTION</b>	<b>SPECIFICATIONS</b>
Scope	This specification covers medical cot bed for use on Field Hospitals and Mobile Medical Treatment Facilities of the Philippine Army
Grade	The finished beds shall conform to the quality and grade of product by this specification
Size	The dimensions of beds shall be shown in the attached illustrations
<b>BASIC REQUIREMENTS</b>	Cot bed, folding bed fabric, olive drab Should be adjustable on the head part.
	Shall have provision for intravenous (IV) pole as illustrated in Figure 1
	Shall include 2" mattress foam (minimum) with fitted cover as illustrated in Figure 1
<b>SPECIFIC REQUIREMENTS</b>	
Dimensions:	

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Outer Dimensions (unfolded)	Length: min 81" Width: min 30" Height: min 12" and max 16"
Folded	Length: max 37" Width: max 32" Height: max 7"
Material	Washable high strength fabric (nylon, polyamide, polyester or other, with hygienic attest); Insert made of thick polyurethane foam (T 25gr or better)
Tubular Frame, snaps and rivets heads, grommets	Aluminum or steel with rust-resistant finish
Leg and bars	Aluminum or steel with rust-resistant finish
IV stand	Stainless steel (or better), detachable
Pillow	a small pillow (not less than 9"x 6" and at least 2" thick) made of durable foam and covered in durable leatherette or better for easy cleaning. Color may be olive drab.
Folding	Minimum two-fold
Weight	Maximum 30 lbs
Load capacity	Not less than 350 lbs
Metal Finish	All metal components to include the IV rod shall be painted first with primer before final coating with enamel Olive Drab color paint and finally "baked"
Major Service marking	the major service marking (ARMY) shall be applied on the mid-center of the canvas cover by silk screen process using colorfast vinyl black paint, stencil Font, Size 400.
<b>ADDITIONAL REQUIREMENTS</b>	At least 30 cot beds will have its head part that can be elevated minimum 70 degrees angle.
<b>STANDARD CERTIFICATION REQUIREMENTS</b>	
Iso certification	Military standard
Warranty	See Annex C: Warranty Service
<b>C.5 WATER DOLLY, TRAILER TYPE</b>	
Quantity (per unit) :	Three (3) water dolly within one (1) water system with one (1) trailer
<b>DESCRIPTION</b>	<b>SPECIFICATIONS</b>
<b>BASIC REQUIREMENTS</b>	Water dollies to include collection, treatment, storage, distribution and waste water disposal will collectively be known as water system with trailer (See Annex E: Trailer Specification for Generator and Water Dolly; Annex F: Forward Treatment Unit Water System & Water System Diagram)
<b>SPECIFIC REQUIREMENTS</b>	
Power Source	Diesel Generator and/or solar off grid power sources
Water purification method	Reverse osmosis water purification system (or better)
Water storage tanks	Portable, collapsible fabric (or better) tanks Minimum capacity: one (1) major water dolly that can hold 500 -1500 Liters and the other two (2)

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	may be of minimum capacity as per manufacturer standard.
Water pumps	Can produce water from water source enough for 30-person water consumption in a day
Water generator	Can produce water from air enough for the water consumption of 5 persons in a day
	Has provisions for water distribution system to each tent
	With provision for water connection to the Mobile Surgical Mobile Truck, tent and Camper Trailer
	With provision for separate connections that is linked to the waste water tanks
<b>MAINTENANCE</b>	Does not create disruptive noise
	Water filtration system does not require frequent and expensive filter changes
	Machine does not inject chemicals into water to create purity unless chlorination is included
<b>FEATURES</b>	Eight (8) stage filtration system (Annex F: Forward Treatment Unit Water System & Water System Diagram)
	With foldable tanks (bladder) made of high resistance polyester fiber (or better), with both sides treated with PVC (or better). Designed to store at least 100 gallons of water. Must be high resistance to tear, rot proof and slimicide. Totally opaque. Resistant to ozone, ultraviolet rays and microorganisms.  The corner of the tank (bladder) are finished with screwed metallic corners that can be anchored to the ground
<b>ADDITIONAL REQUIREMENT</b>	Two (2) Copies each of Operating Manual
<b>STANDARD CERTIFICATION REQUIREMENTS</b>	
Iso certification	National Sanitation Foundation (NSF) /American National Standards Institute (ANSI) Standard 61 or equivalent national institute of public health certification from country of origin
Warranty	See Annex C: WARRANTY SERVICE

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**HEADQUARTERS  
PHILIPPINE ARMY  
PA-TWG FORWARD TREATMENT UNIT  
Fort Andres Bonifacio, Metro Manila**

**ANNEX A: MOBILE RESUSCITATIVE SURGICAL CARE UNIT (MRSCU) Equipment**

<b>MRSCU EQUIPMENT</b>	
<b>ITEM 1</b>	<b>Anesthesia Machine</b>
Description	<ul style="list-style-type: none"> <li>•Compact yet provide high quality anesthesia care in small space</li> <li>•Electrically driven e-vent ventilator without need for drive gas</li> <li>•With external compact breathing system that with very few parts and can be easily</li> <li>•Can allow manual ventilation even when the power is off</li> <li>•Data can be exported and integrated to patient management system</li> </ul>
Quantity	1 set
Dimension	Manufacturer's standard
Weight:	Manufacturer's standard
Power supply	220-240 V/50-60 Hz
Certification	CE or FDA approved
<b>ITEM 2</b>	<b>Portable Digital X-ray Machine</b>
Description	<ul style="list-style-type: none"> <li>For radiologic imaging of body parts</li> <li>At least 100mAs; at least 110kVp</li> <li>Lightest system and portable for easy mobility in the field but with powerful output</li> <li>DXR imaging software with ruggedized laptop</li> <li>Strong body against external shock and contamination</li> <li>User friendly functions with digital display</li> <li>With military grade transport case</li> <li>With wheeled platform with multi-angle use</li> </ul>
Accessories	<ul style="list-style-type: none"> <li>Lead curtain at least 6'x6'</li> <li>Vertical cassette holder</li> <li>Three (3) pcs Lead gowns knee length or its equivalent</li> <li>Three (3) pcs Lead goggles</li> <li>Three (3) pcs Lead thyroid shields</li> <li>Three (3) pairs lead gloves</li> <li>With Digital Radiography solution/system integrated into the unit for viewing of the Xray images</li> </ul>
Quantity	1 set
Power supply	220-240 V
Certification	CE or FDA
<b>ITEM 3</b>	<b>Surgical suction machine</b>
Description	Portable, universal suction device that can immediately evacuate blood, serous fluid and respiratory tract secretions
Quantity	1 set
Power supply	Power supply: 220-240 V
Certification	CE or FDA
<b>ITEM 4</b>	<b>Portable Electrosurgical unit</b>

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Description	Portable, heavy duty electrosurgical unit which makes possible cutting, cut coagulation, coagulation and micro-coagulation
Quantity	1 pc
Power supply	230 V, 50-60 Hz
Certification	CE or FDA
<b>ITEM 5</b>	<b>Field surgical table</b>
Description	Portable and quickly assembled that is used for surgical procedures in the field, must be Military grade Contains two (minimum 100 watts) halogen surgical lights Table is capable of accommodating all military style litters
Quantity	1 set
Certification	CE or FDA
<b>ITEM 6</b>	<b>Ultrasonic cleaner</b>
Description	User activated pulse mode to remove strongly adhering contaminants User activated degas mode to quickly degas fresh solutions With dual frequency of approx. 37 kHz and 80kHz
Quantity	1 pc
Power supply	220 V, 50-60 Hz
Certification	CE or FDA
<b>Item 7</b>	<b>Cardiac Monitor/Defibrillator</b>
Description	Rectilinear Biphasic, NIBP With Energy Selections of up to 200joules Suitable for Adult and Pediatric Patient Connection: 3 or 5-lead ECG cable, paddles, hands free electrodes
Quantity	1 pc
Power supply	100-220 V AC, 50-60 Hz With rechargeable lithium ion battery pack
Certification	CE or FDA
<b>ITEM 8</b>	<b>Portable transport Ventilator</b>
Description	Ventilation modes includes SIMV-VC-PS, CPAP, CPR, PEEP, (Invasive/Non-Invasive) Suitable for adult and pediatric patient
Power supply	With rechargeable battery AC-DC 90-270 VAC 50/60Hz
Quantity	1 pc
Weight	not more than 7kg
Certification	CE and FDA
<b>ITEM 9</b>	<b>Potable Operating Room lights</b>
Description	Featuring six intensity controlled LEDS with minimum 100,000 LUX Touchless controls Can be used in austere environment
Quantity	1 set
Power supply	240 V/50-60 Hz
LED life minimum	50,000 hours
Certification	CE or FDA
<b>ITEM 10</b>	<b>FAST Ultrasound</b>
Description	Portable ultrasound scanner with membrane keyboard High resolution imaging for deeper applications: abdominal

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	cavity (FAST, eFAST exam) lung imaging (Blue protocol) basic gynecological and obstetric investigation <ul style="list-style-type: none"> <li>• Backlit LCD LED screen, diagonal minimum of 6" (+ 1 inch)</li> <li>• Memory capacity is min. 200 images and 200 cine-loops with a date and description</li> </ul> Battery run time minimum 4 hours
Weight	Maximum 1.5kg (+ 0.5 kg)
Quantity	1 set
Certification	CE or FDA
<b>ITEM 11</b>	<b>Portable Sterilizer</b>
Description	Portable autoclave sterilizer with 10 to 20 L capacity Must be equipped with safety systems such as thermostat that alarms and/or stops sterilization cycle in the event of excessive temperature
Feature(s):	Table top Automatic checking and alarm for low water level LCD display for time, pressure, warning and faulted working Pressure ranges from 15 psi at 121° C to 30 psi at 134° C With pressure switch and steam pressure safety valve With indicator lights Auto drying function Pressure Door Auto-Lock With Pre & Dry Vacuum function
Power supply:	200 to 230V 50/60 Hz
Quantity	1 pc
Certification	CE or FDA
<b>ITEM 12</b>	<b>Surgical Instrument</b>
Description	Composed of 4 different sets: <ul style="list-style-type: none"> <li>- 1 Minor Surgical Set</li> <li>- 1 Major Surgical Set</li> <li>- 1 Amputation Surgical Set</li> <li>- 1 Orthopedic Surgical Set</li> </ul> German stainless steel OR grade
Quantity	4 sets
Certification	CE and FDA
<b>ITEM 13</b>	<b>Hand Disinfection Dispenser</b>
Description	Contain: most effective hand disinfectant solution. Can be Wall mounted Refillable, easy to clean and maintain, reusable, made of impact proof material
Quantity	4 sets
Certification	CE or FDA
<b>ITEM 14</b>	<b>Portable Oxygen Tank with Regulator and Carry Bag</b>
Description	Medical oxygen vessel which is held under pressure in gas Cylinders Compatible for use in high altitude Excellent corrosion resistance Aluminum Material or better With O2 regulator
Quantity	1 set
Certification	CE or FDA

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<b>ITEM 15</b>	<b>Portable Suction Unit</b>
Description	Heavy duty Portable, universal suction device Noise below 70dB Build in vacuum pressure gauge With Reusable jar (1L)
Quantity	1 set
Certification	CE or FDA
<b>ITEM 16</b>	<b>Ruggedized Transport Case</b>
Description:	Container for storing medical supplies and equipment
Feature(s):	Air droppable
	Military grade locks
	With molded stacking ribs
	Can provide protection for all weather, temperature and impact. Shell keeps supplies dry and dust-free
Dimension:	
Exterior:	32(±3)in x 20(±3)in x 40(±3)in
Bottom depth:	36(±3)in
Quantity	6 pcs
<b>ITEM 17</b>	<b>Emergency External Fixators</b>
Description	Composed of 2 pcs set per bone involvement: Femur -2 Tibia -2 Fibula -2 Radius -2 Ulna -2 Humerus -2 Built to fit affected extremities Minimally invasive Stainless steel Mono lateral or Bilateral use Scratch proof
Quantity	12 pcs
Certification	CE or FDA
<b>ITEM 18</b>	<b>Field Hospital bed</b>
Description	Easy deployment/assemble Compact and easy storage In two folds Could withstand minimum 700 lbs resting force With attachment for IV pole and removable table platform
Quantity	2
Certification	MIL STD (military standard)
<b>ITEM 19</b>	<b>Spine Board With Head Immobilizer</b>
Description	Straps are easily adjusted for a custom fit With quick release buckle at sides. With at least Eight (8) Spine Board Straps Will not absorb blood or bodily fluids. 100% radiolucent Load limit not less than 450lbs With light durable head immobilizer Waterproof Minimal interference with X-ray, MRI, or CT procedures

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Quantity	2
Certification	CE or FDA
<b>ITEM 20</b>	<b>Foldable Meshed Stretchers</b>
Description	Military grade Built-in patient restraints with buckle With secured slots for IV pole Retractable and lockable composite grip Made of durable, waterproof meshed nylon (or better) material May be Bifold or Quadro fold Water proof With removable short stand
Quantity	4 pcs
Certification	CE or FDA or MIL STD (military standard)
<b>ITEM 21</b>	<b>Handheld Blood Analyzer</b>
Description	With Liquid Crystal Dot Matrix display Wired connectivity Assays includes Glucose, Blood Gas, Chemistry, Electrolytes, Coagulation, Cardiac Markers, Hb, HCT, Beta Hcg, Urea and BUN
Quantity	1 pc
Certification	CE or FDA
<b>ITEM 22</b>	<b>Video laryngoscope</b>
Description	With clear LCD Video Viewer With anti-fog function With reusable optics Operating Time of 120 minutes With disposable blades, 2 sizes (regular and small) blades and eyecaps
Quantity	1 set
Certification	CE or FDA
<b>ITEM 23</b>	<b>Medical Refrigerator</b>
Description	Standard specialized refrigerating equipment for cold storage of pharmaceutical and biological products With wireless remote alarm systems CFC free Digital Thermometer with memory function Temperature range: 2-8°C With safety lock Alarm signals when door left open 3 cubic feet
Quantity	1 pc
Certification	CE and FDA
<b>ITEM 24</b>	<b>Blood warmer</b>
Description	Military grade, lightweight Battery powered or AC powered Heats not less than 3 liters fluid to 38°C on a single charge.
Quantity	1pc
Certification	CE or FDA
<b>ITEM 25</b>	<b>Patient monitor for vital signs</b>
Description	Portable, military grade It can measure pulse oximetry, non-invasive blood pressure (NIBP), temperature, EtCo2, respiration, heart activity.

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	With wireless EMR connectivity for electronic records Provides blood pressure in max 15 seconds Customizable workflow options for documenting patient's observations
Quantity	1 pc
Certification	CE or FDA
<b>ITEM 26</b>	<b>Multi-Casualty Panel (MCP) with medical supplies</b>
Description	With multiple, interchangeable packet See-through packet Could be folded, easy to carry <b>(See Attachment 1 for complete items)</b>
Quantity	2 set
<b>ITEM 27</b>	<b>Medic Trauma Bag</b> <b>(See Attachment 2 for complete items)</b>
Quantity	2 set
<b>ITEM 28</b>	<b>Survival Bag</b> <b>(See Attachment 3 for complete items)</b>
Quantity	2 set

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**HEADQUARTERS  
PHILIPPINE ARMY  
PA-TWG FORWARD TREATMENT UNIT  
Fort Andres Bonifacio, Metro Manila**

**ANNEX A : BTF Equipment**

<b>BTF EQUIPMENT</b>	
<b>ITEM 1</b>	<b>Field Hospital bed</b>
Description	Easy deployment/assemble Compact and easy storage In two folds Could withstand minimum 700 lbs resting force With attachment for IV pole and removable table platform
Quantity	2
Certification	MIL STD (military standard)
<b>ITEM 2</b>	<b>Spine Board with Head Immobilizer and restraints</b>
Description	Straps are easily adjusted for a custom fit With quick release buckle at sides. With at least Eight (8) Spine Board Straps Will not absorb blood or bodily fluids. 100% radiolucent Load limit not less than 450lbs With light durable head immobilizer Waterproof Minimal interference with X-ray, MRI, or CT procedures
Quantity	<b>2 pcs</b>
Certification	CE or FDA approved
<b>ITEM 3</b>	<b>Foldable Meshed Stretchers</b>
Description	Military grade Built-in patient restraints with buckle With secured slots for IV pole Retractable and lockable composite grip handle Made of durable, waterproof meshed nylon (or better) material May be Bifold or Quadro fold Waterproof With removable short stand
Quantity	4 pcs
Certification	CE or FDA approved or MIL STD (military standard)
<b>ITEM 4</b>	<b>Wheeled Litter Carrier</b>
Description	Wheeled device used to carry a litter in transporting injured person quickly
Feature(s):	Wheels should be non-pneumatic Light weight Foldable to a compact storage case Steel should be powdered-coated
Assembly time:	Not more than 30 seconds
Disassembly	Not more than 30 seconds

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time:	
Weight:	20 to 25 kilograms
Load capacity:	Not less than 230 kilograms
Quantity	1 pc
Certification	CE or FDA approved
<b>ITEM 5</b>	<b>Field medical examination lights</b>
Description	A lighting system used for medical examination in order to provide good visualization.
Feature(s):	Compact and ruggedized for use in field hospitals Uses LED lights Eliminates shadow interference Movable joints to make it fully adaptable and secure in any viewing position
Input voltage:	100-240 VAC, 50-60 Hz
Quantity	1 set
Certification:	Certified to IEC 60601-1-2, Group1, Class A Medical Equipment
<b>ITEM 6</b>	<b>Automated External Defibrillator</b>
Description	Is a lightweight, portable device that delivers an electric shock through the chest to the heart to stop an irregular heartbeat (arrhythmia) and allow a normal rhythm to resume following sudden cardiac arrest (SCA)
Feature(s):	Provides assistance to rescuers on CPR depth and rate Provides area for hand placement during compression Can be shifted to manual operation Audio and visual guide Defibrillator self-test Vibration tested military grade
Quantity	1 pc
Certification	CE and FDA
<b>ITEM 7</b>	<b>Portable Oxygen Concentrator</b>
Description	Device used to provide oxygen to battle casualties in the field hospitals or forward treatment units
Feature	military grade, portable Shall be capable to concentrate oxygen from ambient air to deliver therapeutic oxygen to patients. Produces 3,000 mL of oxygen and can operate via wall outlet (AC) power or by rechargeable battery High operating altitude up to 18,000 feet Robust and reliable in extreme temperature and harsh conditions (sand and dust)
Quantity	1 set
Certification	CE or FDA approved or MIL STD (military standard)
<b>ITEM 8</b>	<b>Dressing set</b>
Description	Set of medical devices used for cleaning wounds
<b>Sub Item 1:</b>	Mosquito Artery Forceps Qty: 5 pcs Size: 5 inches Features: - straight surgical stainless steel
<b>Sub Item 2:</b>	Mosquito Artery Forceps Qty: 5 pcs Size: 5 inches Features: curved surgical stainless steel

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<b>Sub Item 3:</b>	Artery Forceps
	Qty: 1 pc
	Size: 7 inches
	Features: curved, surgical stainless steel; with short serrated jaws
<b>Sub Item 4:</b>	Surgical Scissor tissue
	Qty: 2 pcs
	Size: 14 cm
	Features: curved surgical stainless steel
<b>Sub Item 5:</b>	Toothed Dissecting Forceps
	Qty: 2 pcs
	Size: 6 inches
	Features: surgical stainless steel
<b>Sub Item 6:</b>	Needle holder, medium
	Qty: 1 pc
	Size: 5.25 inches
	Features: surgical stainless steel
<b>Sub Item 7:</b>	Iris Scissor
	Qty: 2 pcs
	Size: 4.5 inches
	Features: curved surgical stainless steel
<b>Sub Item 8:</b>	Splinter Forceps
	Qty: 1 pc
	Size: 3.5 inches
	Features: curved, surgical stainless steel
<b>Sub Item 9:</b>	Mayo Scissor
	Qty: 1 pc
	Size: 6.5 inches
	Features: - straight surgical stainless steel
<b>Sub Item 10:</b>	Stitch Scissor
	Qty: 1 pc
	Size: 4.5 inches
	Features: straight surgical stainless steel
<b>Sub Item 11:</b>	Allis Tissue Forceps
	Qty: 2 pcs
	Size: 6 inches
	Features: surgical stainless steel
<b>Sub Item 12:</b>	Scalpel Handle
	Qty: 2 pcs
	Size: #3
	Features: can take blade #10 -#15 surgical stainless steel
Quantity	4 set
<b>ITEM 9</b>	<b>Minor Procedure instrument set with sterilizing tray</b>
Description:	Set of medical devices used for cleaning wounds
<b>Sub Item 1:</b>	Mosquito Artery Forceps
	Qty: 5 pcs
	Size: 5 inches
	Features: - straight surgical stainless steel
<b>Sub Item 2:</b>	Mosquito Artery Forceps
	Qty: 5 pcs
	Size: 5 inches

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	Features: curved surgical stainless steel
<b>Sub Item 3:</b>	Artery Forceps
	Qty: 1 pc
	Size: 7 inches
	Features: curved, surgical stainless steel; with short serrated jaws
<b>Sub Item 4:</b>	Surgical Scissor tissue
	Qty: 2 pcs
	Size: 14 cm
	Features: curved surgical stainless steel
<b>Sub Item 5:</b>	Toothed Dissecting Forceps
	Qty: 2 pcs
	Size: 6 inches
	Features: surgical stainless steel
<b>Sub Item 6:</b>	Needle holder, medium
	Qty: 1 pc
	Size: 5.25 inches
	Features: surgical stainless steel
<b>Sub Item 7:</b>	Iris Scissor
	Qty: 2 pcs
	Size: 4.5 inches
	Features: curved surgical stainless steel
<b>Sub Item 8:</b>	Splinter Forceps
	Qty: 1 pc
	Size: 3.5 inches
	Features: curved, surgical stainless steel
<b>Sub Item 9:</b>	Mayo Scissor
	Qty: 1 pc
	Size: 6.5 inches
	Features: - straight surgical stainless steel
<b>Sub Item 10:</b>	Stitch Scissor
	Qty: 1 pc
	Size: 4.5 inches
	Features: straight surgical stainless steel
<b>Sub Item 11:</b>	Allis Tissue Forceps
	Qty: 2 pcs
	Size: 6 inches
	Features: surgical stainless steel
<b>Sub Item 12:</b>	Scalpel Handle
	Qty: 2 pcs
	Size: #3
	Features: can take blade #10 -#15 surgical stainless steel
Quantity	2 set
<b>ITEM 10</b>	<b>Ruggedized Transport Case</b>
Description:	Container for storing medical supplies and equipment
Feature(s):	Air droppable
	Military grade locks
	With molded stacking ribs
	Can provide protection for all weather, temperature and impact. Shell keeps supplies dry and dust-free
Dimension	

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Exterior:	32(±3)in x 20(±3)in x 40(±3)in
Bottom depth:	36(±3)in
Quantity	9 pcs
Certification	CE or FDA approved or MIL STD (military standard)
<b>ITEM 11</b>	<b>Oxygen Tank with Regulator</b>
Description	Medical oxygen vessel which is held under pressure in gas Cylinders Compatible for use in high altitude Excellent corrosion resistance Aluminum Material or better With Carry bag Compatible with existing regulators in the Philippine market
Quantity	1 set
Certification	CE or FDA approved or MIL STD (military standard)
<b>ITEM 12</b>	<b>Portable, pressurized shower</b>
Description:	A pressurized shower system that can be used for decontaminating and cleaning casualties in the field
Feature(s):	Approximately can deliver 65 psi of water pressure
	Can use any water temperature
	Can be attached to available water plug
Quantity	2 set
<b>ITEM 13</b>	<b>White Board</b>
Description:	Any glossy, usually white surface for nonpermanent markings
Dimension:	(W x H) 40 in x 36 in
Quantity	1 pc
<b>ITEM 14</b>	<b>Combat Medical Aidman Kit (CMAK) (See ANNEX A : Attachment 4 for complete items)</b>
Quantity	2 set
<b>ITEM 15</b>	<b>Multi-Casualty Panel (MCaP) with medical supplies</b>
Description	With multiple, interchangeable packet See-through packet Could be folded, easy to carry (See ANNEX A : Attachment 1 for complete items)
Quantity	4 set

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**HEADQUARTERS  
PHILIPPINE ARMY  
PA-TWG FORWARD TREATMENT UNIT  
Fort Andres Bonifacio, Metro Manila**

**ANNEX B : CAMPER TRAILER EQUIPMENT TECHNICAL SPECIFICATIONS**

<b>ITEM 1</b>	<b>Shower and Shower Tray</b>
Feature	Made of durable and easy to clean material like stainless or better
Quantity	1 set
<b>ITEM 2</b>	<b>Toilet</b>
Feature	Material: Stainless steel or better Manufacturer's standard in waste disposal system Must be easy to clean and disinfect
Quantity	1 set
	<b>Water Tank</b>
Feature	Water tank with a capacity of 100 liters is built into the trailer floor and it is an integral part of its construction.
Quantity	1 set
<b>ITEM 3</b>	<b>Electric Cooker</b>
Feature	Power supply: 100-240V, 50/60Hz, Timer with a turn signal; Power, temperature and time display; Double burner
Quantity	1 pc
<b>ITEM 4</b>	<b>Microwave</b>
Feature	Capacity: approx. 20L Power Supply: 100-240V, 50/60Hz Mechanical Knob Timer:30 minutes End of cooking signal;
Quantity	1 pc
<b>ITEM 5</b>	<b>Wash basin with heater</b>
Feature	Tap -Cable length approx. 135 cm; -Weight: 772 g; -Power: 3kW / 3000W; -Voltage: 220V / 50Hz; -Water tightness: IPX4; -Material: Brushed stainless steel; Sink -Mounting method: Mortise in; -Outflow: plug-in 3.5 ";
Quantity	1 set
<b>ITEM 6</b>	<b>Water Treatment</b>
Feature	With Eight (8) stage filtration system (See Annex F: Forward Treatment Unit Water System And Waste Water System Diagram)
Quantity	1 set
<b>ITEM 7</b>	<b>Refrigerator</b>
Feature	Capacity: not less than 1.6 cu.ft

Inspected  
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	single door with manual temperature control Power Supply: 100-240V, 50/60Hz With separate freezer compartment
Quantity	1 set
<b>ITEM 8</b>	<b>LED TV</b>
Feature	-Screen size: 40"; -HD format: Full HD; -Resolution: 1920 x 1080; -HDR technology: Yes; -Number of HDMI connectors: 2; -Number of USB connectors: 2;
Quantity	1 pc
<b>ITEM 9</b>	<b>Bed</b>
Feature	- Sleeping bed for single person - Has privacy for each person - Made of durable and easy to clean material
Quantity	<b>5 pcs</b>

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**ANNEX C: WARRANTY SERVICES**

L/N	MEDICAL ITEMS/EQUIPMENT	SERVICE WARRANTY NR OF YEARS
<b>A</b>	<b>MOBILE SURGICAL TRUCK</b>	1
<b>B</b>	<b>CAMPER TRAILER</b>	1
<b>C</b>	<b>MEDICAL CARE EQUIPMENT</b>	1
1	Special Medical Emergency Evacuation Device +Wheeled Litter Carrier	1
2	Cardiac Monitor/Defibrillator	1
3	Mechanical Ventilator	1
4	Portable Electronic Infusion Pump	1
5	Multi-function aspirator and customizable suction device	1
6	Automatic CPR Device	1
7	Litter, Tactical, Fourfold, Meshed	1
8	Portable Oxygen Concentrator	1
<b>D</b>	<b>OTHER EQUIPMENT/AMENITIES</b>	
1	Enhanced frame type tent	1
2	Aircondition unit	1
3	Generator	1
4	Cot bed	1
5	Water dolly	1
<b>E</b>	<b>MRSCU EQUIPMENT</b>	
1	Anesthesia Machine	1
2	Portable Digital X-ray Machine	1
3	Surgical suction machine	1
4	Portable Electrosurgical unit	1
5	Field surgical table	1
6	Ultrasonic cleaner	1
7	Cardiac Monitor/Defibrillator	1
8	Portable transport Ventilator	1
9	Portable Operating Room lights	1
10	FAST Ultrasound	1
11	Portable Sterilizer	1
12	Surgical Instrument	1
13	Portable Oxygen Tank with Regulator and Carry Bag	1
14	Portable Suction Unit	1
15	Ruggedized Transport Case	1
16	Emergency External Fixators	1
17	Field Hospital bed	1
18	Cot bed with backrest	1
19	Spine Board With Head Immobilizer	1
20	Foldable Meshed Stretchers	1
21	Handheld Blood Analyzer	1
22	Video Laryngoscope	1
23	Medical Refrigerator	1
24	Blood warmer	1
25	Patient monitor for vital signs	1

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**ANNEX D: LIST OF SPARE TOOLS AND KITS**

TOOLS		QUANTITY FOR EIGHT (8) FTU
ADD'L TOOLS FOR THE TRUCK		
1.	Screwdriver set:	8 set
	Flat Screw Driver 1/8"	
	Flat Screw Driver 1/4"	
	Flat Screw Driver 3/8"	
	Philips Screw Driver Nos. 1	
	Philips Screw Driver Nos. 2	
	Philips Screw Driver Nos. 3	
	Philips Screw Driver Nos. 4	
2.	Pliers (200mm)	8 set
	Slip Joint Utility Pliers	
	Lineman's Pliers	
	Wire-Cutting/Stripping Pliers	
	Diagonal Wire-Cutting Pliers	
	Long-Nose Pliers	
	Locking Pliers	
3	Grease Gun, Heavy Duty	8 set
4	Bench Vise, (8" jaw)	8 set
5	Clutch Aligning Tools	8 set
6	Adjustable Wrench 16"	8 set
7	Box Wrenches	8 set
8	Open End Wrenches, Heavy Duty	8 set
9	Socket Wrenches, Heavy Duty	8 set
10	Multi-Tester	8 set
11	Pressure Gauge	8 set
12	Oil Filter Wrench	8 set
13	Snap Ring Pliers	8 set
14	Air Compressors (2HP)	8 set
15	Deep Socket 1/2 Drive	8 set
16	Torque Wrench 1/2 Drive	8 set
17	Battery Jumper Cables (from vehicle to vehicle)	8 set
18	Oil Can Spout	8 set
19	Long-Stem Transmission Funnel	8 set
20	Tie-Rod End/ Ball Joint Remover	8 set
21	Oil Drain Pan	8 set
22	Tool bag	8 set
23	Battery Charger	8 set
24	Spare wheel	8 pcs
25	Wheel Wrench	8 pcs
26	Jack	8 pcs

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27	Front Towing hooks	8 pcs
28	Wheel Lever	8 pcs
29	Tire inflating hose	8 pcs
30	Tire pressure gauge	8 pcs
31	Wheel chock	16 pcs
32	First Aid Kit	8 set
33	Fire Extinguisher	8 pcs
34	Warning Triangle	8 pcs
35	Air Filter	8 pcs
36	Oil Filter	8 pcs
37	Fuel Filter	8 pcs
38	Cabin Filter	8 pcs
39	Gasket Filter	8 pcs
40	V-belt	8 pcs
41	Set of bulbs	8 set
<b>TOOLS FOR THE CONTAINERIZED RESUSCITATIVE/SURGICAL CARE UNIT</b>		
1	Earthing pole	16 pcs
2	Shovel	8 pcs
3	Ax 1,7 kg	8 pcs
4	Crowbar	8 pcs
5	Hydraulic cylinder support plate	32 pcs
6	Portable ladder	8 pcs
7	Powder Extinguisher	16 pcs
8	Fire blanket	8 pcs
9	First Aid Kit	8 kit
10	Electric Extension cable 3x400V-32A	8 pcs
11	Corner leveling support set	32 set
12	Funnel with replaceable tip	8 pcs
13	Canvas Blanket	8 pcs
14	Protection apron	8 pcs
15	Work gloves(pair)	32 pair
16	Rubber gloves (pair)	32 pair
17	External dielectric mat	8 pcs
18	Dielectric gloves (pair)	8 pair
19	Electric Extension cable 230V-16A	8 pcs
20	Grounding Cable	16 pcs
21	Set of Cables for charging batteries	8 pcs
22	Set of cables for external power supply	8 pcs
23	Portable lamp 24V	8 pcs
24	Portable lamp 230V-	8 pcs
25	Work gloves (pair)	8 pair
26	Wrench set (flat x ring, 8,9,10,11,13,14,17,19)	8 set
27	Hex key set (1,5,2,2,5,3,4;5,6,8;10)	8 set
28	Screwdriver set	8 set
Flat:3,2x75; 5x100; 6x150		

	Philips: 1x75; 2x100	
29	Universal flat nose pliers 160mm	8 pcs
30	Hammer 300g	8 pcs
31	Voltage tester 125-250V (160mm)	8 pcs
32	Entry Doors key set	16 set
33	Door handle for technical compartment covers	16 pcs
34	Digital Multimeter	8 pcs
<b>TOOLS FOR THE TENTS</b>		
1	Earthing pole	8 pcs
2	Shovel	8 pcs
3	Axe 1,7 kg	16 pcs
4	Crowbar	8 pcs
5	Hammer	8 pcs
6	Portable ladder (4m)	8 pcs
7	Lashing Rope	32 pcs
<b>TOOLS FOR THE WATER DOLLY</b>		
1	Adjustable Wrench 15 inch	8 pcs
2	Adjustable Wrench 36 inche	8 pcs
3	Pipe repair clamp	16 pcs
4	Hex key set (1,5;2;2,5;3;4;5;6;8;10)	8 pcs
5	Universal Flat nose pliers 160mm	8 pcs
6	Screwdriver set	8 set
	Flat: 3,2x75; 5x100;6x150	
	Philips: 1x75; 2x100	
7	Wrench Set (flat x ring, 8;9;10;11;13;14;17;19)	8 set
<b>SPARE TOOLS SERVICE SET</b>		
1	Starter	8 pcs
2	Injection pump	8 pcs
3	Alternator	8 pcs
4	Turbocharger	8 pcs
5	Power Steering Pump	8 pcs
6	Central wheel inflation valve	8 pcs
7	Set of Steering rod ends	8 pcs
8	Right and left rear lamp	8 pcs
9	Right and left indicator	8 pcs

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**ANNEX E: TRAILER SPECIFICATION FOR THE GENERATOR AND WATER DOLLY**

<b>TRAILER SPECIFICATION FOR THE GENERATOR AND WATER DOLLY</b>	
<b>Description</b>	Trailer 1: intended to carry the 75kVa Generator and its accessories
	Trailer 2: intended to carry the water dolly and its accessories.
<b>Dimensions of Cover/Container</b>	
<b>Type:</b>	Manufacturer's Standard
<b>Length</b>	2 meters (minimum)
<b>Width</b>	2.4 meters (minimum) to 2.5 meters (maximum)
<b>Height</b>	1.8 meters (minimum) to 3 meters (maximum)
<b>Overall Dimensions</b>	
<b>Overall Length</b>	4 meters (minimum)
<b>Overall Width</b>	2.4 meters (minimum) to 2.5 meters (maximum)
<b>Overall Height</b>	2.7 meters (minimum) to 4 meters (maximum)
<b>Chassis, Rim and Tire Dimension</b>	
<b>Rim Size</b>	20 inches
<b>Tire Size</b>	9.00 tubeless, Lug Type, with mud guard
<b>Chassis</b>	Heavy duty galvanized steel chassis. Suspension on leaf spring
<b>Doors and light</b>	
<b>Doors with hinges, lockset and aluminum rain deflector:</b>	Manufacturer's Standard With Internal Light, Tail Signal Lights, Body sides and Clearance Lights
<b>Finish</b>	
<b>Color</b>	"Olive Drab ASCOM Green" code 9-650-G
<b>Design</b>	See figure.2 below With Anti-Corrosion for exterior panels With telescopic Stands: Manufacturer's Standard

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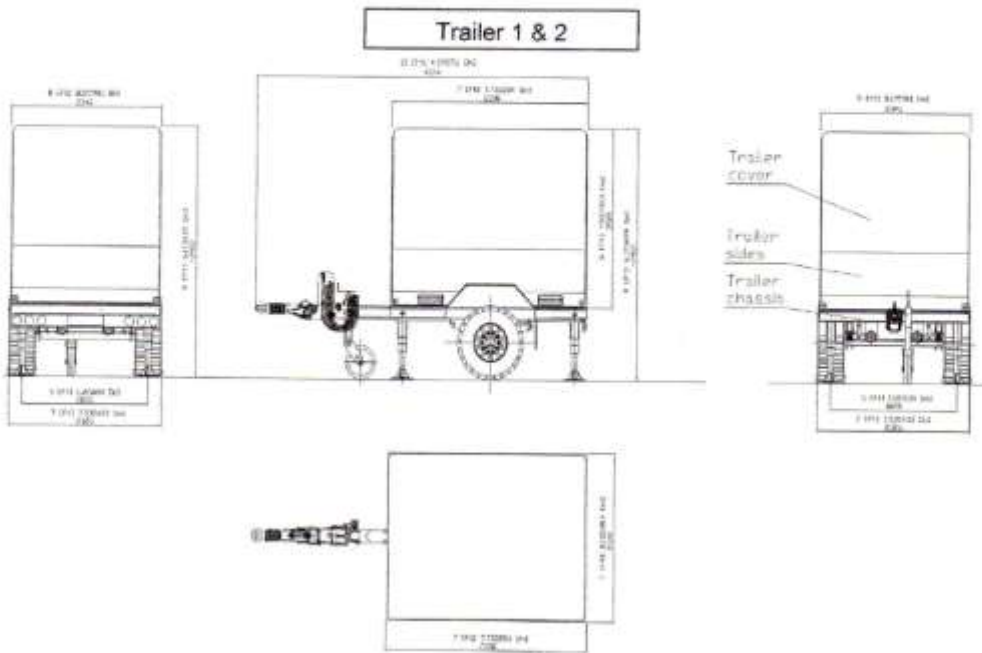


Figure 2: Layout design for trailers 1 & 2.

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**ANNEX F: FORWARD TREATMENT UNIT WATER SYSTEM AND WASTE WATER SYSTEM DIAGRAM**

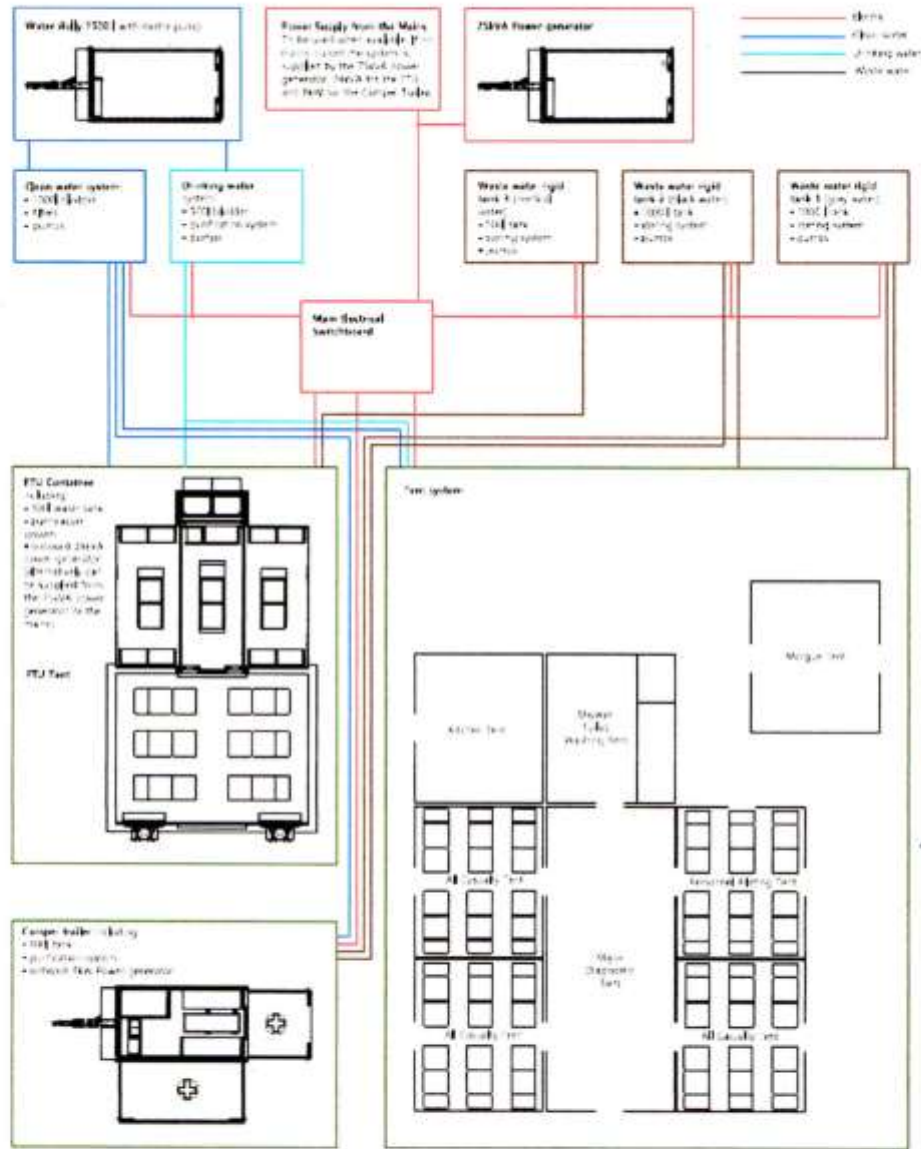


Diagram 1: The water system includes the Eight (8) stage water filtration system which consist of 1. Sediment cartridge made of polypropylene foam ;2. Activated carbon cartridge; 3. Sedimentation insert made of polypropylene foam ;4. Osmotic membrane ;5. UV lamp – linear, 6. Linear carbon filter, 7. Dolomite mineralizer, 8. Bio-ceramic FIR filter.

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ANNEX G: ELECTRIC BLOCK DIAGRAM

FTU Tent System's Electric Block Diagram

NO22 + Main Electrical System  
101 + Medical Ventilation

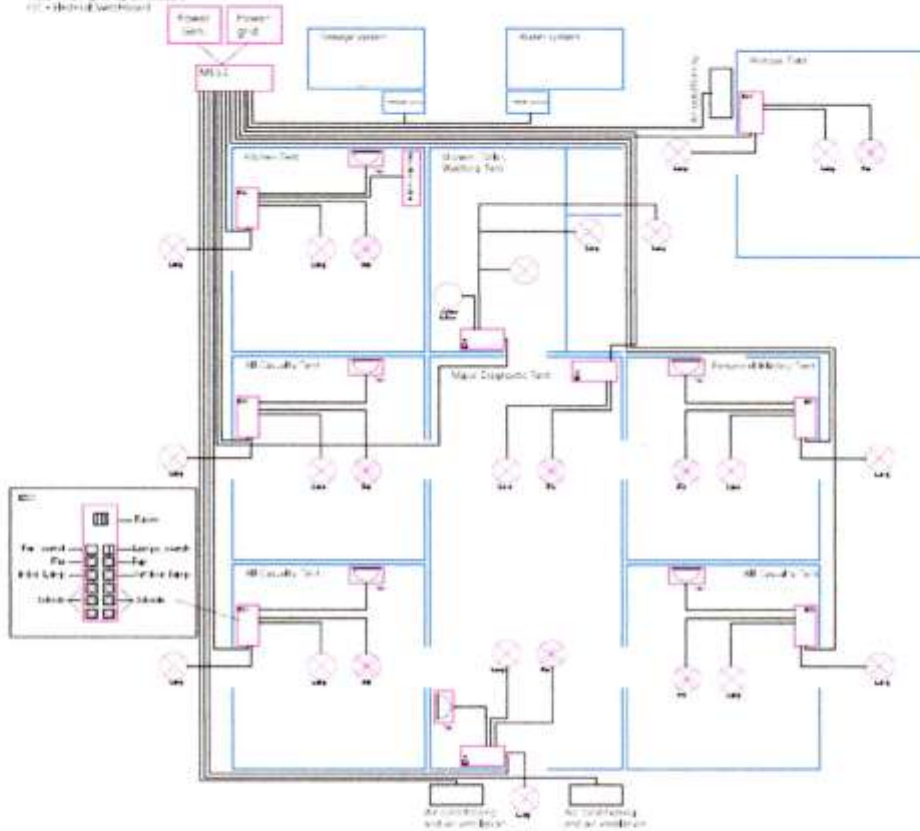


Diagram 2: Electrical system

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