Robertson County Tennessee
Jody Stewart, Finance Director
Finance Department
523 South Brown Street, Springfield, TN 37172
(615) 384-0202 Fax (615) 384-0237

POST DATE: **1/24/2018**

(1) 2018 Type I Ambulance

Sealed bids must be received by: **2/13/2018 at 10:00 AM**

Robertson County Finance Office
523 South Brown Street
Springfield, TN 37172

THE OUTSIDE OF THE ENVELOPE MUST BE MARKED WITH THE BIDDER'S COMPANY NAME, ITEM BID, TIME OF BID OPENING, DATE OF BID OPENING, BID NO. 1380 AND MUST BE MARKED "SEALED BID, DO NOT OPEN."

Bids are opened and read aloud to the public at the Robertson County Finance Office, 523 S. Brown Street, Springfield, TN 37172 immediately after the bid receipt deadline. Each vendor may submit more than one bid provided each bid meets the stated specifications. Each bid must be submitted in a separate sealed envelope with the appropriate notation on the outside. All bids must be signed by an authorized agent and submitted on the prescribed forms. Submission of bids by telegraph, telephone, or other electronic means is strictly prohibited. Any brand name called for the bid specifications is provided as a reference only. Alternate brand name items offered for bid must be equivalent as to function, basic design, type and quality of material, method of construction, and any required dimensions. Bidder must attach a letter of exception to specifications.

For assistance with technical / product information contact Russell Gupton, Assistant Director, Emergency Medical Services at (615)384-1414. For assistance with bid procedures contact Cheryl Moon, Robertson County Finance Office at (615) 384-0202 or by email: cmoon@robcotn.org.

Note: Robertson County reserves the right to reject any or all bids, to waive any technicalities or informalities, and to accept any bid deemed in the best interest of the County. All bids will be considered in accordance with Title VI and without regard to age, sex, color, race, creed, national origin, religious persuasion, marital status, political belief, or disability that does not prohibit the performance of duty.

Bid Checklist (Please include the following documents with your proposal

- ☐ QVM Compliance
- ☐ Warranty Policy
- ☐ Customer Service Policy
- ☐ Proposal Line Item Detail
- ☐ Cad Drawings depicting all views
- ☐ 10 Million Product Liability
- ☐ Certificate of Compliance for the Federal KKK-1822-F Version with the Change Notice 10 update
- ☐ Exceptions/Clarifications
- ☐ Non-Collusion Affidavit

In compliance with the invitation to bid and subject to all terms and conditions imposed therein, the undersigned offers and agrees to furnish the items contained herein at the price stated following the terms and conditions as indicated. I certify that I am authorized to sign this bid for the manufacturer.

Robertson County Government, or herein known as "the County" is hereby requesting a proposal for Ambulance for Robertson County Emergency Medical Services (EMS) personnel. The term is for one year with two (2) one (1) year option renewals after original contract period, upon agreement by vendor and Robertson County, subject to availability of appropriation funding. Price should remain the same except for increase cost of the chassis and materials from the manufacturer not to exceed 15% increase of overall bid price.

Total Lump Sum Price with Stryker Performance Load System and Liquid Spring Rear Suspension

$_____ FOB Delivered to Robertson County EMS

Total Lump Sum Price with Stryker Powerload System and No Liquid Spring Rear Suspension

$_____ FOB Delivered to Robertson County EMS

Delivery Timeframe from Date of Purchase Order: _____ days

Company Name: _____

Address: _____

Name: _____

Title: _____

Signature: _____ Date: _____

Phone: _____

E-Mail: _____

Specification Requirements:

2018 4x4 Diesel, Dual Rear Wheel, 96” x 154” Module

Approved Equal and/or Equivalents may be freely bid, however all units and components must meet the minimum standards, tolerances and weight capacity limits as established/stated/specified by Ford Motor Company 2018 Model F-350 or other brand(s) as referenced herein.

Intent

The following specification describes the needs of this department relevant to the chassis requirements and the ambulance modular body design. This department requires a state of the art vehicle with sophisticated electronics and a mechanical and structural design that offers premium quality and durability. Manufacturers who utilize prototype equipment or manufacturing processes that do not meet manufacturing criteria will not be considered.

This specification requires an all-aluminum modular exterior and interior. The compartment and cabinet sizes are critical. While it is not the intent of this specification to preclude any qualified bidder, it must be clear that any bidder deviating in any substantial way from these specifications will be rejected as non-compliant.

It is the intent of these specifications that the manufacturer of this vehicle has the ability to manufacture a completed ambulance with the exception of the chassis, within their own manufacturing facility. The basic modular body shall not be the product of a subcontractor or any company other than the manufacturer. Accessories such as light bars, sirens and other add on components are not considered as basic components of the modular body. The ambulance manufacturer must have significant experience in the construction of modular ambulance bodies and shall have manufactured a minimum of 8000 comparable units.

Requirements

This specification requires the manufacturer to provide a new, commercially produced, medical care vehicle, hereinafter referred to as an "ambulance". This vehicle shall be manufactured in accordance with the ambulance design criteria of the National Highway Traffic Administration, U.S. Department of Transportation in Washington DC and the GSA -Federal Ambulance Specification KKK-A-1822-F.

The ambulance described herein shall be type and model tested to and in compliance with the National Truck Equipment Association's Ambulance Manufacturing Division, Standards 001-025. Certifications must be current to manufacturer's most recent manufacturing/engineering design criteria. Must be certified to a formed non-extruded module body. (No Exception)

Performance

This is an engineer, design, construct and delivery type specification and it is not the intention of this agency to write out vendors or manufacturers of similar or equal equipment of the types specified. It should be noted, however, that this specification is written around specific needs of this agency. With the intent to standardize certain components, therefore, in numerous places we have named specific brands of components. This has been done to establish a certain standard of quality. Other brands will be accepted providing the vendor provides documentation in the bid that the particular brand offered meets or exceeds the quality of the actual brand called for in the specification.

The ambulance and the allied equipment required by this specification shall be the manufacturer's current commercial ambulance model of the type and class specified. The ambulance shall be complete with the required options and accessories as specified herein. Items will be furnished with such modifications as may be necessary and specified to enable the ambulance to function reliably and efficiently in a strenuous, sustained operation. The design of the vehicle and the specified options shall permit accessibility for servicing, replacement and adjustment of components and accessories with minimum disturbance to other components and systems. The term "heavy-duty" as used, shall describe equipment or items that are in excess of the usual quality or capacity that is normally supplied with standard production vehicles or components.

Pricing

All bid prices shall be complete and include warranty and delivery of the completed vehicle to the purchaser. Payment shall be made in accordance with the terms, and conditions of these specifications. Payment will be made upon delivery and acceptance of the vehicle(s) and equipment specified herein.

All bid prices and conditions must be specified on the Bid Proposal Form. Bid prices shall be valid for 60 days from the date of the bid opening, or as otherwise specified in the bid proposal. Payment in full will be made as each unit is received, inspected and found to comply with these specifications. The vehicles(s) shall be free of damage and properly invoiced.

By submission of this signed bid response, the bidder certifies under penalty of perjury, that to the best of his/her knowledge that the pricing in this bid response has been prepared independently without collusion, consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such pricing with any other bidder or competitor. The bidder also acknowledges that the pricing quoted has not been discussed with or disclosed by the bidder prior to the opening of the bid, either directly or indirectly.

Liability

The bidder's proposal packet shall include a copy of the ambulance manufacturer's current insurance certificate. The manufacturer shall provide proof of $10 Million dollars of product liability insurance coverage.

Delivery

The bidder shall be obligated to provide an estimated delivery time. Estimated delivery will be based on receipt of chassis. **Vehicle delivery required before June 30, 2018.**

Manufacturing

Manufacturer shall manufacture the module at their facility. Accountability and quality of the design suffer greatly when the module construction are done off site. Safety begins with a well-designed and constructed module and, next to the chassis, considered the most critical element in overall safety and long-term durability.

Repeatability

It is critical that the manufacturer design 100 % of the vehicle on a CAD (Computer Aided Design) system. All components must be electronically retained so that in the event that a manufactured part has to be remade the original engineered drawing can be utilized. It is expected that 90% of the machining be done on CAM (Computer Aided Machining) capable equipment in order to maintain tight tolerances in the event of reordered parts or a new vehicle order.

Engineering Support

Manufacturer shall maintain a full time engineering staff with degreed engineers. Due to the complexity of the design of the vehicle, proposals will be accepted only from manufacturers that utilize well-defined engineering techniques. Computer Aided Design (CAD) drawings of both the interior of the patient area and the overall layout of the module body will be mandatory. At a minimum, these drawings shall include all exterior elevations, all interior views, and a plan view of the roof/ceiling. All options and elements required within these specifications shall be depicted on the prints. The purpose of this requirement is to assure this purchaser that vehicle proposals indeed meets the stated requirements as set forth in these specifications. Generic CAD drawings are not acceptable. The drawings, as submitted, shall accurately depict the exact vehicle that is being proposed. Bidders not including the required drawings will be considered non-responsive and therefore, will be rejected.

Module Design

It is critical that the basic module design have a proven track record and meet the following criteria for consideration of this bid. A). Have a design that maximizes the greatest possible payload without compromise to the overall structural integrity and vehicle safety. B). Have a design that has been aerodynamically tested and engineered for reduced fuel consumption and ride stability. C). Have a design that can easily be retrofitted to a new chassis.

Safety - Design

The ambulance shall be designed and constructed to maximize the safety and security of the occupants. To the greatest extent possible, the interior walls and ceiling of the ambulance shall present a simple plane surface. This requirement applies in particular to the surfaces (cabinet fronts, doors, windows, cushion, etc.) that make up the front wall of the patient compartment. The interior of the patient and driver compartments shall be free of all sharp projections. All hangers or supports for equipment, lighting, controls and other devices shall be

mounted as flush as possible with the surrounding surface. Padding (bolsters) shall be placed at all head areas and obstructions that may prove dangerous to persons moving about in the ambulance. The interior of the patient compartment shall be designed and constructed to minimize containment areas for the incubation of viruses either air borne or transmitted in fluids. All stepping surfaces (i.e. front cab and patient compartment step wells) shall be covered with anti-skid material for skid protection. All securing straps, cargo nets and other restraints shall be capable of retaining 10 times the total weight of the equipment or material they are designed to contain. Doors, hatches and covers shall be designed to contain 10 times the weight of the items stored loose behind the door, hatch or cover. Equipment installed in the cab shall be located and mounted in such a way that it shall not interfere with the operation of the driver side and/or passenger side air bag(s) if the vehicle is so equipped. In order to stop carbon monoxide emissions from entering into the interior of the ambulance, no equipment or fixtures are to be mounted on the engine cowling, unless fasteners and method of securing are specifically designed to prevent this problem. Any mounting on cowl shall be done without damaging the integrity of the cowl insulation or heat shield.

Material Definitions

All equipment, material and articles required under this specification must be new or fabricated from new materials produced from recovered materials. The term "recovered materials" means materials that have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above will be interpreted to mean that the use of used or rebuilt products is allowed. The term "heavy duty", when used to describe an item, means in excess of the usual quality or capacity that is normally supplied as standard production material and represents the most durable item that is commercially available.

Materials Weight

In order to maintain the maximum payload without sacrificing structural integrity it is required that a minimum of 90% of the exterior body be made of formed sheet aluminum. Extrusions utilized for body corners and doorframes tend to be heavier then formed parts as well as being more susceptible to welding cracks due to the type of joining methods used. The formed parts are lighter and more able to absorb long-term flexing of the body. (**No Exception**)

Section 1 Mandatory Requirements

Bidder will only be considered where the proponent has demonstrated that a proposed unit has specifications that fully meet or exceed those requested by the purchaser.

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
1.2	The Type I module shall be a non-walkthrough conversion for a 2018 Ford F350 4x4 Diesel Cab and Chassis. An acceptable equivalent to the Ford chassis may be considered as long as the payload capacity meets the requirements of this specification. The unit, along with equipment, to be operational and ready for service upon delivery.	Yes	No	
1.3	Module dimensions (minimum required – the intent of this requirement is to maximize ergonomic workspace for the attendants and the safe accommodation of patients. These dimensions will also account for the safe storage of personal protective equipment (PPE) and clothing for firefighting duties) Module dimensions: Outside length – 154” Outside width – 96” Head Room - 72" Interior headroom in the patient module	Yes	No	State module dimensions here: _____in. _____in. _____in.

Section 2 General Requirements

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
2.1	**Compliance** An ambulance shall comply with the following, listed in order of precedence: **(I)** Federal Motor Vehicle Safety Standards (FMVSS); **(II)** Ford Quality Vehicle Modifier program (QVM) or equivalent for other automakers	Yes	No	
2.2	**Versioning** The documents referenced in 2.1 shall be the version of those documents that was in effect no earlier than when the motor vehicle chassis was manufactured and no later than when the vehicle was completed as an ambulance.	Yes	No	
2.3	Unit must have an established performance record in an application as described in KKK-1822-F which includes the severest climatic conditions.	Yes	No	
2.4	Remote keyless entry and panic alarm with two copies of all keys for each unit.	Yes	No	
2.5	All controls clearly and permanently labeled.	Yes	No	
2.6	All function controls shall be easily accessible to the operator when in the “driver seat” position.	Yes	No	
2.7	Conversion body to be painted using a powder coating method and be warranted for the life of the conversion.**(No Exceptions)**	Yes	No	

Section 3 Construction and Design Details

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
3.1	**Interior Safety** **A).**All equipment and accessories installed must be designed and affixed in a manner to maximize the safety, security and ergonomics of the attendants, patients and passengers.	Yes	No	
	B). All exposed edges and corners without padding shall be rounded with the largest possible radius or chamfer.	Yes	No	
3.2	**Bolsters** All bolsters are to be approximately two inches thick, minimum of 2.4 lbs. per 0.028 cubic yard density foam on an approved backing with a covering (acceptance standard is Morben Dauphine vacuform vinyl P/N 2567-XEK), that is of a color-coordinated, heavy duty, fire retardant, washable, seamless, thermo-formed, non-absorbent material.	Yes	No	
3.3	**Equipment Retention** The ALS cabinet must be secured with doors that allow easy access to all EMS response kits from within the patient module or from curbside exterior. Doors must remain secure when the ambulance is moving.	Yes	No	
3.4	**Cabinet Construction** **All interior cabinetry must conform and be certified to the Change Notice 10 testing per KKK-1822-F Version (No Exception)**			
	A) All interior cabinets shall be constructed of powder-coated aluminum. **No Wood Products are allowed within the construction of any portion of this ambulance (No Exceptions)**	Yes	No	

	B) Adjustable powder coated aluminum shelving shall be securely bolted to Unistrut rails. **No Wood Products are allowed within the construction of any portion of this ambulance (No Exceptions)**	Yes	No	
3.5	**Interior Finishes** To the greatest extent possible, the interior walls and ceiling of the ambulance are expected to present a simple plain surface. This requirement applies in particular to the surfaces (cabinet fronts, doors, windows, cushions, etc.). The interior of the patient and driver compartments must be free of all sharp projections. All hangers or supports for equipment, lighting, controls and other devices must be mounted as flush as possible with the surrounding surface. Padding is expected to be placed at all head areas and obstructions that may prove dangerous to persons moving about in the ambulance. All exposed edges will either be padded or rounded to have a 1 inch mm radius. The interior of the ambulance must be designed and constructed to minimize containment areas for the incubation of pathogens — either air borne or transmitted in body fluids	Yes	No	
3.7	**Vehicle Weight**			
	A) GVWR 14,000lbs, and to include all components and requirements included in a **Ford F350 4x4 Diesel "**Ambulance Prep. Pkg." An acceptable equivalent to the Ford chassis may be considered as long as the payload capacity and engine requirements meet the requirements of this specification.	Yes	No	
	B) Wheelbase = 169 in	Yes	No	
	C) Axles: - Front 6,000 lbs. min. capacity - Rear, 9,750 lbs. min. capacity with limited slip rear differential.	Yes	No	

	D) Springs – combined capacity at ground - 14,000 lbs. GVWR **E) Liquid Spring**—Install a Liquid Spring rear Suspension. Kneeling position is to activate off of the rear module doors opening and or the front Liquid Spring control panel. Unit shall raise back to ride height when rear doors close and or off of front Liquid Spring Control Panel	Yes	No	
3.8	**Weight Distribution**			
	A). The weight distribution of the completed EMS vehicle, when measured at curb weight, shall comply with the chassis manufacturer's requirements and the AMD 013 standard. The manufacturer will attach a signed certification tag that states the system has successfully met the test requirements.	Yes	No	
	B). In the absence of specific OEM values, the weight distribution for the completed EMS vehicle, when calculated on a level service or device, shall be such that not less than 30% or more than 50% of the vehicles weight is on the front suspension.	Yes	No	
3.9	**Payload Requirements**			
3.9.1	A minimum of 1,750 lbs. payload allowance shall be provided over and above the vehicle curb weight which is to include all items in these specifications. Payload consists of four persons (calculated at 175 lbs. per occupant) and appropriately distributed support supplies and devices.	Yes	No	
3.9.2	**The vehicle payload shall meet or exceed that called for in the current KKK-A-1822 specification.** The vehicle manufacturer shall, upon notice by this purchaser, provide a written statement from an independent engineer that the model being offered has met this set of criteria. Before delivery of the completed unit the manufacturer shall weigh the vehicle. A written statement of those weights shall be affixed to the inside of the street side mid body compartment door. This purchaser reserves the right to have the finished vehicle weighed independently upon delivery. If	Yes	No	

	it is found that the written statement of weight provided by the manufacturer is inaccurate beyond what may be reasonably explained as a slight difference in the calibration of the scales, then the vehicle will be rejected**. It should be noted that this purchaser, while interested in attaining the greatest possible payload, is unwilling to compromise on the structural requirements of a strong, durable, and safe body.** All bidders must understand these factors supersede concern over payload, and that the lightest body (greatest payload) will not necessarily be deemed sufficient to meet the stringent quality and safety requirements set forth herein.			
3.9.3	Upon delivery, each ambulance is to include a weight distribution report showing front, rear, left, right analysis and total weight of the vehicle.	Yes	No	
3.9.4	Weight distribution for the completed vehicle shall be such that the weight between the right and left wheel, of a given axle, shall be within 5% of each other.	Yes	No	
3.9.5	This tolerance is calculated as follows: 1. Obtain the curb weight of each wheel on a given axle: **i**) Divide the weight of each wheel by the total curb weight of the axle. Times(X) 100 = the % of weight on each side; **ii**) Subtract the smaller percentage from the larger result; **iii**) If the difference is 5% or less then the vehicle has complied with the required weight distribution.	Yes	No	
3.9.6	**Center of Gravity –** the manufacturer shall determine the center of gravity of the fully converted EMS vehicle and confirm in this bid that it complies with the "CG" parameters as set out by the original producer of the chassis.	Yes	No	
3.11	**Bumper and Steps**			
	Mounted on the rear of the vehicle shall be an all-aluminum step bumper. The bumper shall be impact absorbing and the center section to be a flip-up step. Step surface shall be slip resistant. Bumper shall be fully welded and constructed to with stand the	Yes	No	.

	following forces. The bumper shall be designed in such a way that in case of minor impact the bumper will slide underneath the module and reduce the chances of damage to the module itself. The bumper shall also be designed to be completely bolted to the chassis frame and not welded, so that for maintenance repairs the bumper can be easily removed and replaced. Bumper shall be constructed of all aluminum materials to maintain weight savings. It shall be fully welded utilizing 2 X 2 inch and 2 X 3 inch tubes, 2 X 3 inch association channel. Also included for added strength will be formed 1/4 inch gusset plates. The outside corners shall be 2 X 2 inch tubes formed with an 8 inch radius for added strength. The outside corners shall be covered in aluminum diamond plate. The center section will be made of 10 inch nonskid aluminum step material. This center section shall have pivot hinges that allow the step to flip up for patient loading, The bumper shall be bolted directly to the chassis frame. Welding additional steel to the chassis frame rails will not be acceptable as it adds additional weight and welding tends to weaken the steel frame rail. In addition an isolation material must be supplied between the aluminum bumper and steel frame for electrolysis prevention. The distance between the top of the step and the ground shall not be less than 16".			
3.12	**Rear Bumper Guard** Bolted to the bumper shall be two (2) hard rubber dock bumper guards. They shall measure approximately 2 X 4 inches	Yes	No	
3.13	**Tow Hooks** Welded to the bumper frame shall be two (2) Tow Hooks.	Yes	No	
3.14	**Side Entry Step**			
	Entry through curbside patient door. There shall be a recessed step well located at the curbside module entrance door. The step well shall include Dual 9 inch deep, polished aluminum diamond plate steps. A continuous three sided kick plate consisting of	Yes	No	

	polished aluminum diamond plate shall be installed on the sides and rise to the height of the interior floor. The step shall include an LED light.			
3.15	**Running Boards**			
	A combination running board and splash guard shall be constructed for the front of the module. It shall be made of 10 inch wide high traction grip strut and .100 diamond plate. It shall be welded as a complete assembly then bolted to the chassis. Running Boards must have a minimum of 11.0" clearance between the bottom edge of the running board and the ground.	Yes	No	
3.16	**Fuel Filler** Mounted to the side of module shall be an all-aluminum gas filler housing. Housing shall be attached using plastic grommets. A decal indicating "Diesel Fuel Only" will be affixed to the module above the filler housing.	Yes	No	
3.17	**Fuel Filler Protection** The area below the chassis fuel fill shall be covered with a stainless steel splash shield. This shield shall be completely sealed.	Yes	No	
3.18	**Fender Flares** Module shall be supplied with polished aluminum fender flares over the rear wheels. They shall be bolted in place with nutserts.	Yes	No	
3.19	**Stone Guards - Front** The front of the module shall be supplied with polished aluminum diamond plate stone guards. They shall be formed to match the vehicle radius and be 10" high. They shall be attached to the module with isolating grommets.	Yes	No	
3.20	**Stone Guards/Identification - Rear** The rear of the module shall be supplied with 10 inch high polished aluminum diamond plate stone guard. It shall be one	Yes	No	

	continuous piece and shall be formed to match the vehicle radius. It shall be attached to the module using nutserts**. Cut into the center section shall be the name of our service: "ROBERTSON CO EMS"**. Prior to mounting the visible area behind the cutout shall be covered with high reflective Blue Reflexite. Wheel well liners shall be fully welded aluminum and lined with Astro Turf like material to reduce road noise. Chassis manufacturer's wheel and jounce clearance must not be violated.			
3.21	**Crash Rail** Heavy Duty Pan Formed Diamond Plate Crash Rails shall be installed on each side of the body. Crash Rails shall be installed with spacers between the rail and the body to allow for impact. Securing of the rails to the body shall take into consideration for electrolysis.	Yes	No	

Section 4 Chassis Requirements

Modifications or additions to the OEM chassis must be completed using approved OEM practices and all modified equipment must meet or exceed OEM performance characteristics. Modifications or additions to the OEM chassis should be OEM approved. Any modifications or additions to the OEM chassis should not decrease the value of the OEM chassis warranty.

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
4.1	**Chassis Requirements**			
	A) 2018 Ford F350, Dual Rear Wheel 4x4, 84" Cab to Axle, 169" Wheel Base, Chassis Cab. Chassis is to be ordered with the 47l option package. Ambulance Prep PKG with Special Emissions (LPO). An acceptable equivalent will be considered if meeting necessary payload and performance standards.	Yes	No	
	B) Diesel Engine: Ford – 6.7 liter Powerstroke V8 Turbocharged Diesel. 330@ 2,600 RPM SAE net HP, 750 foot pounds SAE net Torque. Or acceptable equivalent.	Yes	No	
	C) Transmission: Heavy-duty 6 speed automatic Select Shift transmission with Tow/Haul Mode.	Yes	No	
	D) Oil Cooler-Additional transmission oil cooler/OEM	Yes	No	
	E) **Gear Ratio**-4.10 Limited Slip Differential	Yes	No	
	F) Power Door Locks, Keyless Entry, Power windows and cruise control.	Yes	No	
	G) Shock absorbers – Heavy Duty front for Type I ambulance stability, control and handling.	Yes	No	
	H) Stabilizer Bar – will have heavy-duty stabilizer bars providing increased load stabilization as per manufacturer's heavy duty suspension package	Yes	No	
	I) Steering – Power steering system c/w tilt steering wheel.	Yes	No	

	J) Wheels – (6) 17”x6.5” – 10 hole, stamped disc suitable for tubeless radial 10 ply (E rated) tires.	Yes	No	
	K) Wheel Covers, (4) stainless steel	Yes	No	
	L) Tires – (6) required LT245/75R x 17E high-performance tubeless steel belted radials with all-weather tread.	Yes	No	
	P) Valve Extension kit, stainless steel braided lines for inside dual wheels.	Yes	No	
	Q) Battery – Dual 12V – no less than 84 Amp Hours each per OEM spec. CCA combined rating 1540 amps. @ 0°F (-18° C) Reserve capacity per SAE J537, 180 min.	Yes	No	
	R) Alternators – Dual Combined 377 Amp capable of handling the total vehicle amperage draw.	Yes	No	
	S) Headlights – will be dual composite halogen with daytime running and “Headlights On” alerting.	Yes	No	
	T) Lights – Lighting to meet requirements of Ambulance Vehicle Standards Code, including daytime running lights and courtesy light switches at all doors.	Yes	No	
	U) **Mirrors** – Powered dual external rear view, remote heated mirror; size 6.25 x 9.5 in below eye level “swing out”. Split glass mirror head, upper flat glass (62sq. in minimum) and lower full width glass (30 sq. in min) c/w outboard signal lights.	Yes	No	
	V) Heater/Defroster/Air Conditioner.	Yes	No	
	W) Gauges – will have all gauges: oil, fuel, temperature, ammeter and engine hours as supplied by OEM.	Yes	No	
	Y) Front tow hooks.	Yes	No	
	Z) Fuel Tank -The Chassis shall have a single corrosion-resistant fuel tank with a minimum 40 gallon capacity.	Yes	No	

	AA) DEF System should have convenient access for filling. DEF Tank fill site should be identified with decal placed on the module above the fill site.	Yes	No	
4.2	**Automatic Engine High-Idle Speed Control** The chassis OEM throttle control must be pre-programmed to meet OEM program requirements. This device must be "normally on", i.e., it must be in operating mode whenever the engine is running, vehicle is in park and the Emergency brake is set. The device must be preset so that, when activated, it will operate the engine at the appropriate RPM based on voltage sensing. The device must be activated automatically whenever the voltage of the OEM or the conversion battery falls below 12.5 volts.	Yes	No	
4.3	**Backup Alarm**			
	There shall be a back-up alarm with a minimum db. rating of 97 to be activated when the transmission is placed in reverse. To warn bystanders when the vehicle is backing up, a heavy duty reverse warning signal must be installed to operate when the gear selector is in "REVERSE". Provide a momentary backup alarm defeat switch on the driver's console.	Yes	No	
4.4	**Backup Camera** A. 7" Color Monitor shall be installed between the cab visors to monitor for backing up. The camera when going into Reverse switches to the exterior rearview of vehicle.	Yes	No	

Section 5 Driver's Cab

Any modifications or additions to the driver's cab must be completed using approved OEM practices and all modifications and equipment must meet or exceed OEM performance characteristics.

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
5.1	**Driver's Cab General**			
	A) The driver and passenger seat – high back **cloth or vinyl** bucket seats, lumbar support, inboard arm-rest, 3-point harness.	Yes	No	
	B) Supplemental Restraint System (SRS) – The driver's side and passenger side should each be equipped with an air bag.	Yes	No	
	C) Floor covering in the cab interior shall be rubber supplied by the OEM, or equivalent for ease of cleaning, non-porous and microbe resistant**. (No exceptions)**	Yes	No	
	D) Vehicle clearance plaque showing height dimension measurements to be located easily visible to the driver. State the overall height.	Yes	No	_____ **In.**
	E) The driver's side and passenger side should each have access to a safely placed coat hook.	Yes	No	
	F) Audio System – OEM/AM/FM/CD – MP3 Stereo with front door speakers and a rear speaker in patient module.	Yes	No	
	G) Map Light – LED Map Light, Red/White over passenger seat with switch on console.	Yes	No	
	H) 200,000 CP Spotlight, hand held with coiled cord on right front of driver's console.	Yes	No	
	I) A rechargeable Streamlight Fire Vulcan LED Flashlight will be provided to the manufacturer by Robertson County to be mounted in an easily accessible location in the cab.	Yes	No	

5.2	**Driver's Console**			
5.2.1	**Control Panel and Console** A console shall be installed in the cab. The console shall be constructed of aluminum and powder coated Black. It shall house the recessed emergency control panel and integral digital display. Under no circumstances shall the console interfere with the OEM vehicle controls or gauges. This console includes RAM Mounts and shall allow for siren and radio head installation for 2 Kenwood Radios. The front console shall include LED flashing warning indicators designed to warn the driver of open access doors (red flashing) or open exterior compartment doors (amber flashing). All switches shall be Carling style LED rocker switches of the same design as the attendant's control panel. The driver's control panel meters and switch legends shall have backlighting. The switch function legends shall be screen printed from the back for durability and shall be white on black to prevent bleed out. The standard front switch panel shall include, at a minimum, one spare switch Switches used shall be electro mechanical rocker type that fits into a standard switch footprint (Carling style). They shall be rated for a minimum 50,000 cycles and have LED indicator lights. For fast identification the switches shall be grouped by function: A. Emergency Functions B. Non-Emergency Lights C. Vehicle and Non-Emergency Functions D. Battery Functions The face plate, when removed for servicing, must have sufficient wire lengths to allow the plate to be turned over and have all connections remain attached. The edges of the face plate must present a smooth rounded surface such that the edge will not cause injury to anyone accessing items on the face plate.	Yes	No	

5.2.2	The driver's switch panel shall include the following switches: a) Ambulance Connect (Master) b) Primary/Secondary Emergency lighting activation c) Wig Wag warning light activation d) Horn/siren and steering wheel activation e) Air Horn f) Left Scene lights g) Rear Scene lights h) Right Scene lights i) 3- Way Cot lights j) Map light k) Reverse Alarm l) Antitheft m) Sure Start (Battery Boost) n) Battery Boost o) Door/Compartment ajar visible warning	Yes	No	
5.3	**Cab Map Bin** There shall be an aluminum map bin installed between the rear wall and the floor console and seats in the cab. This box shall be approx. 5" x 12" and shall be powder paint coated Black. There shall also be (2) cup holders located at the rear of the console.	Yes	No	
5.4	**Door Open Warning**			
	Door ajar warning light on driver's console for all entry/exit doors including: the cab doors, patient module doors and for exterior compartment doors. No audible alarm will be connected to the door ajar warning for the ambulance module.	Yes	No	
5.5	**Bulkhead Partition**			

Section 6 Modular Body

Type I-AD (Additional duty) Ambulance (14,000 GVWR), Class I, Floor Plan A for Advanced Life Support Services in accordance with USA Federal Specifications for Ambulance KKK-A-1822F as well as the following minimum requirements:

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
6.1	**Modular Body Design** The ambulance must be designed and constructed so as to maximize the safety and security of the attendants, patients and passengers while also maximizing the utilization of space. The construction will also promote fuel efficiency and handling stability with aerodynamic design principles. Contractor(s) must identify any innovations, research or development that has been done regarding the aerodynamic efficiency of the proposed vehicle. The main structure of the modular body must be of fully-welded construction. Individual tubing members must be welded using continuous welds around the full circumference of the member. If the modular body consists of wall or roof sub-assemblies, these sub-assemblies must be joined with continuous welds on all exposed surfaces. Tack welds are NOT acceptable for joining sub-assemblies The modular body's front, rear and side walls, should be comprised of a one-piece seamless sheet of aluminum. There should be NO butt welded or putty-filled seams on the exterior walls. The roof must be sheeted with no more than two (2) pieces of aluminum which are joined by a continuous weld. All panels and sheeting must be welded and sealed with adhesive sealant (acceptance standard is Silaprene). The roof panels must also integrate rain gutters into the sheeting itself. Mechanically attached rain gutters are not permitted due to their corrosion potential.			

	The wall sheeting must be attached and sealed with an adhesive sealant to give a clean, smooth appearance. **No Wood Products are allowed within the construction of any portion of this ambulance (No Exceptions)**			
6.2	**Modular Body Construction** The general dimensions of the body are to be 154" long by 96" wide with 72" Headroom. The modular body must be designed to eliminate exterior extrusions to increase the strength of the body as well as reduce the potential of corrosion, not only in the general construction of the body frame but also the framing of each entry door and exterior compartment door. The body is to be designed using a 4 inch radius, 2"x2" roll cage all-aluminum frame covered by seamless .125" aluminum sheeting. The aluminum sheeting is to be CNC cut and bent to form integrated exterior door jambs thus eliminating seams and welding that could potentially cause body corrosion. **No Wood Products are allowed within the construction of any portion of this ambulance (No Exceptions)**	Yes	No	
6.3	**Exterior Module** In order to maintain consistency and long-term durability it is required that all aluminum used in the construction of the exterior module skin be of the identical alloy and hardness. Module Exterior: Wall Thickness = .093", Alloy = 5052-H32 Roof Skin: = .093", Alloy = 5052-H32 Exterior Compartment Bottoms: = .093", Alloy = 5052-H32 Exterior Compartment Walls: Wall Thickness = .093", Alloy = 5052-H32 Module and Exterior Compartment Doors: Door Skin Thickness = .093", Alloy = 5052-H32 Internal Bracing Thickness = .093", Alloy = 5052-H32 Structural Tubing Sizes Wall and Roof Tube Size: = 2" X 2" X .125", Alloy = 6061-T6	Yes	No	

6.4	**Module Sub Floor** Sub Floor Tubes and Channels: 3 X 2 X .125 inches, Alloy 60601-T6 2 X 2 X .125 inches Alloy 60601-T6 1 X 2 X .125 inches Alloy 60601-T6 **No Wood Products are allowed within the construction of any portion of this ambulance (No Exceptions)**	Yes	No	
6.5	**Sub Floor Mounting Plates** Cot Mount Plate: .250 Minimum Sheet Thickness Aluminum Alloy = 5052-H32 Attendant Seat Mounts: .250 Minimum Sheet Thickness Aluminum Alloy = 5052-H32 Body Mount Plates: .5 X 3 inch Minimum Thickness Aluminum Alloy 60601-T6 Seat Belt Mounts: .250 X 4 inch Minimum Thickness Aluminum Alloy 60601-T6 Heat Shield: .040 Continuous	Yes	No	
6.6	**Interior Cabinets:** Minimum Sheet Thickness = .091 inches Aluminum Alloy = 5052-H32 Wall Panels: Minimum Sheet Thickness **No Wood Products are allowed within the construction of any portion of this ambulance (No Exceptions)**	Yes	No	
6.7	**Structural Tubes** Tubes shall be structural type In order to have more strength and to create a more consistent gap for weld filling. All ceiling and wall tubes shall have a .375 inch radius. Tubes that have square corners (architectural) are not as strong and do not allow enough weld gap thus reducing weld penetration.	Yes	No	
6.8	**Module - Construction** In order to reduce corrosion potential, aid in decal and stripe adhesion and create a more consistence appearance, all panels comprising the exterior module shall be constructed in such a way that the completed module shall	Yes	No	

	be seamless. This can be achieved through forming techniques, precision welding and/or strategic seam placement. The end result shall be a modular with no visible seams.			
6.9	**Structural Framing -Roll Cage** Independent of the module skin shall be a structural roll cage. This structure shall consist of 2 X 2 X .125 inch tubes 6061-T6, which are welded together creating a continuous structure from floor to ceiling. The ceiling tubes shall be one continuous formed tube that traverse the entire module from side to side and is welded to a horizontal longitudinal tube that traverse the full perimeter of the module body. For added strength the outside radius shall be formed into all the ceiling tubes. At the vertical corners in the top and at floor level shall also be a 2 X 2 X .125 inch tubes 6061-T6, which is formed to the body radius. . The lateral spacing of framing members shall be a maximum average of 16" on center for superior strength throughout.	Yes	No	
6.10	**Structural Framing - Tube Welding** The tubing shall be welded at every intersection and on three sides creating a minimum of 4 inches of weld length.	Yes	No	
6.11	**Body Panels** The entire exterior module shall be constructed of .125" x 5052-H32, corrosion resistant sheet aluminum. The module side wall, front and rear wall panels shall each be CNC cut and machine formed to provide a seamless sidewall. All body panels shall be box pan formed construction. Entrance doors and exterior compartments shall be formed into the body panels. Extruded frames; due to the fact that they cause seams and are of a different alloy will not be accepted. Body panels shall be welded to the body structure in non-exposed areas. The body panels shall be adhered to the structural tubes utilizing structural adhesives and when completed shall have a smooth flat appearance. Flat sheet style construction that slides into or under an extrusion shall not be acceptable due to the	Yes	No	

	difficulty in preventing oxidation and/or electrolysis where visible, exposed joints are present and to eliminate the inferior structural properties that can develop during dynamic stress situations. To eliminate the potential for seam seal cracks or the appearance of any sidewall body cracks, the manufacturer shall provide full length welds along seams at any door opening. The welds shall be ground smooth and the body work will provide a seamless unbroken appearance when painted. The module side wall, front and rear wall panels shall each be CNC cut and machine formed to create the side and rear entrance door jamb openings. Door openings shall be free of any overlapping frames or plastic filler material. The return flange of the door jambs shall accept the weather-stripping that is applied to the door.			
6.12	**Body Panels - Panel Attachment** Each sidewall shall be manufactured in an environment designed to prevent the waviness that can occur during the assembly process. The body panels shall be welded to the tube structure at all door and compartment openings. They shall also be welded to the tube structure at both the upper and lower horizontal perimeter tubes. In areas that will be covered the body panels shall be attached to the tubes by either welding or mechanical fasteners. Note: It is critical to achieve as many attachment points as possible between the body panel and the tube structure However the seamless body is paramount importance. Therefore exposed fasteners, weld distortions or extraneous body trim will not be allowed.	Yes	No	
6.13	**Welding Equipment** Repeatability is of utmost importance. Consequently we require that the manufacture demonstrate their ability to provide highly consistent welds. Welds are critical to the durability and safety of the product. The manufacturer must supply appropriate documentation of their ability to	Yes	No	

	achieve highly consistent welds. We will accept two types of methodologies: 1. All welding is performed with digital welding equipment that is programmed to the specific type of weld, direction, and metal thickness. 2. They produce documentation that all welders are tested every six months and quality weld samples are tested every month.			
6.14	**Body Panels - Panel Adhesion** Body panels shall also be adhered to the module tubes utilizing two types of adhesives. The first adhesive shall be used for structural attachment. It shall be an industrial panel bonding adhesive that meets FMVSS 301 and Ford's Stress Durability test BV-101-07. It shall be used intermittently throughout the module at all high stress points. The second adhesive shall be a Silaprene brand urethane adhesive (or equivalent) and shall be applied throughout the module on both sides of each tube and in all the area's where the body meets the subfloor.	Yes	No	
6.15	**Body Panels - Drip Rail** Because it is required to have the entire module constructed of the same alloy and to eliminate as many seams as possible the drip rails shall be formed into the body panels. It shall run the full length of the module (less the radius) and shall extend a minimum of .75 inches from the module. Drip rail shall be on both sides and rear of the module.	Yes	No	
6.16	**Isolators** It is absolutely critical that every component attached to the exterior module have a specifically designed isolation process, methodology or component. Because of this it is	Yes	No	

	required that 100 percent of all body holes be cut prior to paint/coating of the exterior module. Isolators and inserts have very tight tolerances and consequently all holes must be machine cut on a strippet or milling machine, laser or water jet cutter, or CNC high speed router. Holes that are hand drilled or cut will not be acceptable. (**No Exceptions)**			
6.17	**Sub Floor System - Construction** Sub floor shall be constructed of aluminum tubes and channels that have a minimum of 4 inches of weld at every intersection. Extrusions shall be 6061-T6, the dimensional requirements are: 3 X 2 X .125 Tube 2 X 2 X .125 Tube 1 X 1 X .125 Tube 3 X 2 X .250 Channel. It is required that the entire floor be sequentially welded so as not to introduce metal fatigue or structural deformation due to excessive heat. There shall be a minimum of eight (8) lateral structural members that run the full width of the module less the perimeter tube. It is critical that these lateral members are continuous full width sections in order to maintain long term side to side stability and structural integrity. Tying theses structural members together shall be four (4) .5 X 3 inch aluminum longitudinal bars. These longitudinal bars shall run parallel to the chassis frame rails and shall act as the chassis to module mounting support plates.	Yes	No	
6.18	**Sub Floor System - Pre-stressing** In order to provide minimum weight and maximum strength the sub floor structure shall be designed and built in a mechanical pre-stressed manner. This can be accomplished with a jigged welding fixture or preformed sub floor components. The subfloor shall be assembled with a small degree of arch in the overall shape. After the entire floor is welded together it is expected that the floor shall be flat and level.	Yes	No	

6.19	**Mounting Hardware** Areas of the subfloor where cot mount hardware and attendant seat pedestal are bolted shall be supplied with .250 inch aluminum plate. These plates shall be securely welded to the aluminum substructure.	Yes	No	
6.20	**Sub Floor System - Perimeter Crash Protection** Surrounding the entire perimeter of the sub floor shall be aluminum tubes and or channels to act as energy absorbing structures in the event of a collision. It is especially critical that this crash protection barrier form around all four corners of the module. These tubes shall be formed with the same radius as the body corners	Yes	No	
6.21	**Sub Floor System - Skirt Supports** Areas where there is not a compartment, wheel well, or step well shall have a formed tube that extends to the bottom of the body panel for additional structural support.	Yes	No	
6.22	**Sub Floor System - Covering** Covering the entire aluminum sub floor shall be a single sheet of .040 aluminum. Due to moisture and carbon monoxide concerns smaller sheets with seams will not be acceptable. It shall be attached to the subfloor frame with a Silaprene adhesive.	Yes	No	
6.23	**Sub Floor System – Panel** The subfloor, above the aluminum sheet shall be specially constructed to provide both acoustic and thermal protection for the patient interior. The composite floor panel shall be installed flush with the top of the longitudinal channel structure. The composite insert shall be secured in place with a two part self-etching, high-strength epoxy. All other open areas of the exposed sub floor not being filled by compartments or wheel wells shall have the same composite floor panel material installed	Yes	No	

	to fill the openings. All seams and the entire perimeter of the sub floor shall be completely sealed with Sikaflex sealant adhesive or a spray-in-place foam material to create a watertight, dust free environment.			
6.24	**Insulation - Materials** It is critical that the entire module be completely insulated and sealed. This includes the ceiling, all four side walls, the floor and doors. It is required that the various types of insulation be carefully chosen based upon the specific location and the performance required. A one size fits all approach will not be acceptable. Below is a list of the insulation materials and their individual R ratings. These R ratings should be considered a minimum requirement. If an equivalent substitute is being proposed you must submit samples and R value documentation from the supplier. Ceiling: 2 inch Fiberglass Foil backed Knuff Insulation Board with Ecose – 1.6 lbs./cu ft. -R 8.3 Walls: 2 inch Fiberglass Foil backed Knuff Insulation Board with Ecose – 1.6 lbs./cu ft. -R 8.3 Floor: 5/8 inch Atlas Energy Shield Polyiso Sheeting – R-4.1 Doors: 3/4 inch Armaflex Sheet – R 3.1 Tubes to Wall and Ceiling panels : 1/8 inch Armaflex Sheet – R .51 Tubes to Wall panels : 1/8 inch Armaflex Sheet	Yes	No	
6.25	**Insulation - Sealers** In an effort to make the module as thermally efficient as possible it must be completely sealed on the interior. This includes using a urethane sealer on the entire interior including the full perimeter where the floor and walls meet. There shall be a designated area where the underbody harnesses come up from the floor. It shall have a flanged trim ring to prevent harness chaffing an enable more complete ceiling. Harnesses running up corner radius that are then stuffed with material will not be acceptable.	Yes	No	

6.26	**Undercoating** All surfaces, edges, corners and joints that can be exposed to any fluid must be sealed by an approved waterproof bonding material. The vehicle must be undercoated for sound deadening, corrosion and stone damage protection. An undercoating material must be applied to the under body, under chassis and sheet metal surfaces; except to the drive shaft, drain holes, lubrication points, engine crankcase, heavy castings, suspension components, heat shields, heat diffusing devices, catalytic converters, brake cables, backup alarm, auxiliary air conditioning and heater line and areas 10" from the exhaust system(s). Copies of the specifications and warranties for the proposed undercoating products must be included with the Vehicle Manual. The Contractor(s) must adhere to any instructions/guidelines issued by the OEM concerning application of undercoating. Application instructions given by the manufacturer of the undercoating products must be followed. Two (2) applications of undercoating must be provided: 1)-After welding the reinforcing steel bar, step well, body structural components, etc., all interior areas subject to rust and/or corrosion must be undercoated; and 2)- On completion of the total conversion package, an undercoating material must be applied to the under body, under chassis and sheet metal surfaces; except to the drive shaft, drain holes, lubrication points, engine crankcase, heavy castings, suspension components, heat shields, heat diffusing devices, catalytic converters, brake cables, backup alarm, auxiliary air conditioning and heater lines and areas two hundred fifty (250) mm or less from the exhaust system(s). Caution must be exercised regarding over-spray of undercoating. **The Contractor(s) is responsible for final cleaning of all areas.**	Yes	No	

6.27	**Module Coating – Electrolysis Prevention** All external materials and fasteners shall be chosen to prevent electrolysis and corrosion due to dissimilar materials, exposure to the elements and moisture entrapment. Rubber, plastic or Mylar insulating material shall be installed under all lighting, all exterior compartment and entrance door handles, exterior door hinges, rear door hold opens, fuel filler, crash rails, windows and between the cab and module. To prevent long term electrolytic paint corrosion all components to be mounted on the module exterior shall be cut out prior to painting. All exterior fasteners used to mount emergency lighting to the outside of the module shall be completely isolated from the painted module by using a nonferrous collapsible blind insert that is reusable. Crash rails and fender rings shall be secured to the module body utilizing an attachment method that does not use dissimilar metals. **No Exceptions**	Yes	No	
6.28	**Module to Chassis Mounting System - Body Mounts** The module shall be mounted to the chassis frame with minimum of ten (10) tie down locations, five (5) down each side symmetrically located. Each mounting location shall consist of a rubber doughnut type system that is securely bolted to the OEM manufacturers frame and the 1/2 inch thick X 3 inch wide aluminum plate that is a welded component of the module sub floor. The bolts utilized shall be 1/2 inch Grade 8 (or equivalent). In order to make the vehicle easier to remount the mounts shall be bolted in such a way as to allow the bolt to be easily removed from the underside of the vehicle without having to cut or modify the bolt, mount or substructure. On top of these transverse connecting plates shall be a 1/8 inch anti-friction pad to prevent electrolysis and vibration transmission from the frame to the module. The module sub floor 'C' channels shall rest only on these anti-friction	Yes	No	

	pads, and be securely fastened to the transverse connecting plates with high strength grade 5; 5/8 inch zinc plated steel bolts.			
6.29	**Entrance Door Design** Hinges must be full length, stainless steel piano hinges with a stainless steel pin. The hinge must be designed to provide ease in servicing and adjustments. Door latches must be automotive style with a two-stage catch mechanism. When doors are opened, the hinges, latches and door-checks must not protrude into the access area. The following must be installed on the inside of each door; a handle to facilitate closing; door stops to prevent damage to body sides; and an inside door release handle on each door. On the exterior of each rear patient compartment door, door stops must be installed to prevent body damage and be of a suitable strength. All patient compartment entry doors must have an emergency release mechanism in each door. These releases must be attached to the door lock mechanism. The door release mechanism must be easy to access and operate **No Exceptions**	Yes	No	
6.30	**Patient Entrance Doors** Door openings to the patient compartment must be provided at the rear of the body and on the curb side ahead of the right rear wheel. Each door must have effective neoprene seal compression or overlapping seals to prevent water leakage, dust penetration and reduce siren and road noises. There must be dual rear doors complete with vertical hinges that must provide a minimum clear opening of 46” wide by the maximum height obtainable with consideration for the rear emergency lighting. Consideration should be given in designing the doors for the removal of the primary	Yes	No	

	cot. The loading height will be 34 inches at maximum. The curb side rear door opening must be of sufficient size to accommodate the emergency removal of patients on the main cot. The window in the curb side door must be vented to provide air circulation, should mechanical systems be non-operational. The window must be equipped with a screen and be lockable. The rear door windows must be fixed and non-vented.			
6.31	**Entrance Doors - Rear Doors** Rear Entrance doors shall be designed to allow for medic ease of access when not loading a patient. Therefore the curbside rear door shall be approximately 20% larger than the street side rear door. The rear doors opening height clearance shall be 65 inches. The rear doors opening width clearance shall be 46 inches. **No Exceptions**	Yes	No	
6.32	**Entrance Doors - Side Door** The side door opening height clearance shall be 67 inches. The side door opening width clearance shall be 30 inches.	Yes	No	
6.33	**Entrance Doors - Construction** Doors shall be double box pan formed of a single sheet .090 inch 5052-H32 aluminum and shall be a maximum of 2.25 inches thick. They shall be fully welded and ground smooth to provide a seamless door. For added strength the doors shall also have box pan formed braces that are welded to the door in such a manner that they do not show weld distortion marks on the exterior door surface. A full perimeter air core weather seal to be securely fastened to the exterior door pan so that the paddle handles, rotary latches and all connecting hardware are protected from the elements and the seal is protected from damage.	Yes	No	

6.34	**All Doors - Handles** The doors shall be fitted with Eberhard E-Grabber door handles. The handle shall be designed with a floating cam so when the doors are locked, no stress will be placed on the door rod linkage when the paddle handle is operated. The surface finish of the handles and the handle housing shall provide polished chrome, bright finish. The paddle handles and housings shall be tested for adhesion, chemical resistance, salt spray abrasion and accelerated weathering. The interior side of each module entrance doors shall include a flush mount paddle handles. The interior door assembly shall include a locking lever for the side entrance door and the curbside rear locking door. Non stainless parts shall have a yellow zinc chromate finish. The door rods shall have formed ends that fit over the pull mechanism in a manner that even if the locking pin were to fail the rod will remain attached to the door pin. Door rods shall be threaded for fine tune adjustments. Cables, fixed length rods, or rods with bends will not be acceptable.	Yes	No	
6.35	**Entrance Doors - Hardware** The module entrance doors shall be equipped with two stage rotary latches constructed of high strength, heat treated, steel latch components. This latch must be certified to FMVSS 206 Standards for Personnel restraint Applications. Components shall be zinc electroplated and coated with Everlube or equivalent. Latches shall be bolted in place with 5/16 inch grade 8 bolts. All of the internal door hardware, paddle handles and latches, shall be sprayed with a petroleum based lubricant material. The locking pawl shall be secured to the paddle handle with removable LockTite. The Paddle handle shall be secured with machined bolts utilizing anti-seize. **NO EXCEPTIONS.**	Yes	No	

	There lower portion of the interior door panel shall be removable to gain access to the rotary latches for routine maintenance. All compartment and module entry door paddle handles shall be keyed alike. The paddle latches mounted in each locking door shall include a double cut, non-directional tumbler assembly designed to accept a key that does not require a specific orientation for actuation. Single cut tumbler assemblies that require a specific orientation for operation are not acceptable. All rotary door latches shall engage Nader pin striker posts made of high strength steel, plated with clear chromate and inserted through a synthetic isolation washer designed to prevent corrosion around Nader pins. The Nader pins shall have a shoulder to prevent the latch mechanism from being pulled over the top of the pin in a dynamic crash situation. The Nader pins shall be fastened with a securing nut designed to function like a blind fastener, allowing the Nader pin to be adjusted and re-tightened without having to access the nut. The interior side of each module entrance doors shall include a flush mount paddle handles. The interior door assembly shall include a locking lever for the side entrance door and the curbside rear locking door.			
6.36	**Entrance Doors - Hinges** The doors shall be fitted with stainless steel hinges with a minimum pin diameter of .250 inches and a minimum leaf size of 1 inch. Hinge knuckles shall be peened to keep pin from coming out. The doors shall be fitted with 1/4-20 nutserts for bolting of hinges. These nutserts shall be applied to both the doors and the door frames. The doors shall be bolted to the body structure with 1/4" x 20 stainless steel truss head machine screws. Bidders must submit, with their bids, test documentation demonstrating compliance with FMVSS #206. There shall be an insulating material installed along the	Yes	No	

	length of the hinge where the hinge meets the door frame to separate the stainless hinge from the aluminum body. This material shall be transparent so as not to be visible at any point while the door is being used.			
6.37	**Entrance Doors - Insulation** Doors shall be lined with a 3/4 inch thick high density closed cell foam that has both insulation and sound attenuation qualities. It is noted that the entrance doors are constantly being exposed to moisture. Therefore door insulation shall also have an anti-microbial treatment (Microban or equivalent).	Yes	No	
6.39	**Entrance Doors - Hold Opens** The rear doors shall use Cast Products (or equivalent) aluminum hold opens with high-density replaceable rubber inserts. They shall hold the doors open at a 130 degree angle. Because the high cycle time of the doors the components shall be bolted to both the door and the module with 1/4 20 nutserts. To eliminate long term failure the receiver shall be bolted into a body structure tube. The curbside entrance door shall incorporate a spring driven device capable of holding the door open at 90 degrees. The rod assembly shall be ½" diameter minimum. Due to the extreme stresses exerted on the door at the hold open attachment point, the attachment bolts must be anchored to the door using 1/4" x 20 stainless steel bolts through nut inserts that are secured into a support gusset welded into the upper corner of the door structure. Screw type attachments will not be acceptable. **NO EXCEPTIONS** The curbside and rear entrance door headers shall have removable, vinyl covered foam cushions to provide protection for emergency personnel when entering or exiting the vehicle. Vinyl color shall be Yellow for additional safety.	Yes	No	

6.40	**Entrance Doors - Door Panels** The entrance door interior panels shall be .090 aluminum 5052-H32. The door itself shall be fitted with nutserts approximately every 12 inches. The door panel shall be bolted in place with White coated bolts and isolation washers. There lower portion of the interior door panel shall be removable to gain access to the rotary latches for routine maintenance.	Yes	No	
6.41	**Entrance Doors - Seals** It is critical to keep moisture out of the interior of the module. Each entrance door shall be equipped a door seal. A full perimeter air core weather seal shall be securely fastened to the exterior door pan so that the paddle handles, rotary latches and all connecting hardware are protected from the elements and the seal is protected from damage. This flange shall also include small plates at the nader pins to ensure that the seal completely surrounds the nader pin opening. Since this seal is more susceptible to long term wear and tear it shall be mechanically fastened and be easily replaced.	Yes	No	
6.42	**Entrance Doors - Maintenance** Entrance doors shall be equipped with reflectors. These reflectors shall be removable and placed in a location that allows for maintenance to the door rods.	Yes	No	
6.43	**Entrance Doors - Wire Routing** All doors that require wire routing shall be equipped with stainless steel spring conduits. They shall be equipped with a receptacle that allows the spring to easily slide into the door cavity when closed. All wire routing through doors must be done in this manner. **No Exceptions**.	Yes	No	

6.44	**Entrance Doors - Safety Exit** In the event of an accident and the door linkage is damaged to the extent the occupant can no longer open the door, the manufacture shall install a safety release at the top and bottom of all entrance doors. **No Exceptions**.	Yes	No	
6.45	**Door Windows** The windows combined shall have a minimum of 650 square inches of glass. They shall be approximately 30 inches tall and have the same width proportion as the doors themselves. The glass shall be dual pane insulated (single pane glass will not be acceptable). Surrounding the glass shall be an aluminum extrusion. The side entrance door shall include a sliding window with a positive latch and screen. The rear entry doors shall have fixed glass windows to prevent the possibility of carbon monoxide from entering the patient compartment. The Street side door shall be approximately 13"W x 30"H and the Curbside door shall be 17”W x 30”H All windows shall be from the same window manufacturer, and shall be darkly tinted safety glass with black aluminum extruded frames inside and out. Windows shall meet and incorporate the required stamp and serial number per F.M.V.S.S. regulation #571.205. **No Exceptions**	Yes	No	
6.46	**Assist Handles** The module entry doors shall be equipped with 1" diameter “L" shaped assist handles. The handles shall be Yellow Powder Coat with Anti-Microbial coating. Each side and rear entry door handle shall be mounted so that the horizontal portion of the handle extends along the lower edge of the window and the vertical portion of the handle extends up and along the outer edge of the window on each door.	Yes	No	

6.47	**Exterior Compartment Construction -** All compartment sidewalls and ceilings shall be constructed of .090" x 5052-H32 aluminum. Compartment floors shall be constructed of .090" x 5052H32 aluminum that is raised to provide a smooth sweep out floor. The complete formed and welded compartment assemblies shall be securely welded to the sub-floor structure and sidewall structural framing of the module. All compartment construction joints that are not sealed by weld shall be sealed with an automotive grade seam sealer before final finishing of the compartments.	Yes	No	
6.48	**Exterior Compartment Doors** The exterior compartment door panel shall be single sheet, double box pan formed .090 inch aluminum and precision welded to provide a seamless door. The door pans to have the corners fully welded and ground smooth. There shall be reflectors strategically placed on the door for door rod maintenance. All rotary door latches shall engage Nader pin striker posts made of high strength steel, plated with clear chromate and inserted through a synthetic isolation washer designed to prevent corrosion around Nader pins. The Nader pins shall have a shoulder to prevent the latch mechanism from being pulled over the top of the pin in a dynamic crash situation. The Nader pins shall be fastened with a securing nut designed to function like a blind fastener, allowing the Nader pin to be adjusted and re-tightened without having to access the nut. All of the internal door hardware, paddle handles and latches, shall be sprayed with a petroleum based lubricant material. The exterior compartment doors over 36 inches shall be equipped with two stage rotary latches constructed of high strength, heat treated, steel latch components. Components shall be zinc electroplated and coated with Everlube. Latches shall be bolted in place with 5/16 inch grade 8 bolts.	Yes	No	

6.49	**Exterior Compartment Doors – Handles** The doors shall be fitted with all stainless steel polished Eberhard E-Grabber door handles. The handle shall be designed with a floating cam so when the doors are locked, no stress will be placed on the door rod linkage when the paddle handle is operated. The handle housings shall have a die cut rubber gasket separating the paddle handle from the door. The surface finish of the handles and the handle housing shall provide polished chrome, bright finish. The paddle handles and housings shall be tested for adhesion, chemical resistance, salt spray, abrasion and accelerated weathering. All compartment and module entry door paddle handles shall be keyed alike. The paddle latches mounted in each locking door shall include a double cut, non-directional tumbler assembly designed to accept a key that does not require a specific orientation for actuation. Single cut tumbler assemblies that require a specific orientation for operation are not acceptable.	Yes	No	
6.50	**Exterior Compartment Doors - Hinges** The doors shall be fitted with stainless steel hinges with a minimum pin diameter of .250 inches and a minimum leaf size of 1 inch. Hinge knuckles shall be peened to keep pin from coming out. The door hinges shall be fitted with 1/4" x 20 stainless steel truss head machine screws. Bidders must submit, with their bids, test documentation demonstrating compliance with FMVSS #206.	Yes	No	
6.51	**Exterior Compartment Doors - Insulation** Doors shall be lined with a 3/4 inch thick high density closed cell foam that has both insulation and sound attenuation qualities. It is noted that the doors are constantly being exposed to moisture. Therefore door insulation shall also have an anti – microbial treatment (Microban or equivalent).	Yes	No	

6.52	**Exterior Compartment Doors - Hold Opens** The exterior compartment doors shall incorporate Suspa 45# gas filled spring hold open device capable of holding the door open at 90 degrees. Due to the extreme stresses exerted on the door at the hold open attachment point, the attachment bolts must be anchored to the door using 1/4" x 20 stainless steel bolts through nut inserts that are secured into a support gusset welded into the upper corner of the door structure. **No Exceptions**	Yes	No	
6.53	**Exterior Compartment Doors - Panels** The entrance door interior panels shall be .090 aluminum 5052-H32. They shall be fully powder coated White to match the interior. The door itself shall be fitted with nutserts approximately every 12 inches. The door panel shall be bolted in place with White coated bolts and isolation washers.	Yes	No	
6.54	**Exterior Compartment Doors - Seals** A full perimeter air core weather seal to be securely fastened to the exterior door pan so that the paddle handles, rotary latches and all connecting hardware are protected from the elements and the seal is protected from damage. **No Exceptions**	Yes	No	
6.55	**Exterior Compartment Doors - Maintenance** All exterior compartment doors shall have two red reflectors mechanically attached to the inside of the door panels. These reflectors shall be removable and placed in a location that allows for maintenance access to the door rods. **No Exceptions**	Yes	No	
6.56	**Exterior Compartment Doors – Switching** Each exterior compartment shall be independently switched and will energize one compartment only. The door switch shall activate a common flashing Amber light located in the front switch panel to notify the driver when any door is open.	Yes	No	

	The exterior compartments shall be illuminated by LED strip lighting with dedicated ground wires The switch utilized shall be a Ford 9 (OAE) door switch that requires no maintenance yet is still easily accessible for replacing.			
6.57	**Exterior Compartment - Coating Finish** The exterior compartment interiors, doors and door backs shall be powder coated with the identical material and process used for the exterior module.	Yes	No	
6.59	**Exterior Compartment Lights** Exterior compartment lights shall be LED strip lights and shall be rated for 50,000 hours	Yes	No	
6.60	**Exterior Compartment Layout**			
	A) Street-side Forward Compartment 1: Main outside Oxygen cylinder storage and access. This shall be the forward most compartment on the street side of the module and will be full height. This compartment shall be for main oxygen tank and an additional set of 4 'D' oxygen cylinders. It shall be externally vented with a marine grade Chrome Cowl Vent.	Yes	No	
	B) This compartment shall contain: either a ramp system or a two wheel cart to facilitate loading the oxygen tank without lifting, or a hydraulic/electronic lifting system that will facilitate the safe and easy loading of an oxygen cylinder.	Yes	No	
	C) Street-side Mid-Body Compartment 2: Electrical Component Compartment for vehicle electronics. This compartment shall be just forward of the curbside wheel well and will be full height. This compartment shall be for all power distribution and all electrical components for ease of maintenance. The upper portion shall be for	Yes	No	

	power distribution, relays, circuit breakers, etc. There shall be a shelf below the upper area to accommodate an Inverter and larger components. The lower portion of this compartment shall be for miscellaneous equipment storage. A five lb. ABC fire extinguisher mounted inside the left-hand door.			
	C) Street-side Rearmost Compartment 3: Storage for spare tire and miscellaneous equipment. This compartment shall be the rearward most compartment on the street side of the vehicle. The center storage area of this compartment shall have inside/outside access and shall have a fixed shelf above and below the opening. Below the inside/outside area shall be an adjustable shelf.	Yes	No	
	D) Curb-side Rearmost Compartment 5: Storage for Backboards, Stair Chair, This compartment shall be located at the curbside rear of the module. The compartment shall be configured for the vertical storage of 2 backboards and a Stryker 6252 stair chair and shall include one full height fixed divider. Above the stair chair storage shall be a fixed shelf for miscellaneous storage.	Yes	No	
	E) Curb-side Forward Compartment 8: Storage for Jump kits. **1)** This compartment shall be the forward most compartment on the curbside of the module allowing interior / exterior access to the interior ALS cabinet. Interior ALS cabinet shall have hinged Lexan doors, non-locking flush mount slam latches and (3) adjustable shelves. **2)** A rechargeable Streamlight Fire Vulcan LED flashlight will be supplied by Robertson County and shall be mounted in an easily accessible location within this compartment.	Yes	No	

	F) Curb-side Compartment 9: Ventilated multi-battery slide-out tray. This compartment shall be located below the upper inside/outside ALS cabinet. It shall be an isolated storage compartment for the vehicle batteries. This compartment shall include a slide out drawer to accommodate up to (4) batteries. (3) Batteries standard.	Yes	No	
6.61	**Exterior Compartment Shelving** Where specified, exterior adjustable shelves shall be box pan formed of a minimum .125 inch aluminum. The exterior compartment shelves shall be powder coated with the identical material and process used for the exterior module. The shelves shall be securely bolted to Unistrut.	Yes	No	
6.62	**Door Sill Protection** There shall be stainless steel door sill protection on the lower edge of all compartment and patient entrance door frames.	Yes	No	
6.63	**Dri-Deck** Dri Deck shall be installed on all exterior shelves and compartment bottoms.	Yes	No	

Section 7 Patient Compartment

7.1	General Characteristics	Yes	No	Deviation/Explanation (attach necessary documentation)
	Storage cabinets must be easily opened, but will not come open in transit or as the result of a vehicle collision. Tie-downs are required to anchor the interior compartments/cabinets to the side of the vehicle. These must be welded to the top of the vehicle's uprights and must be of sufficient size to retain cabinetry during a vehicle collision. The compartments must be secured to the tie-downs with nuts and bolts. Each section of cabinetry must be sealed at floor, side and ceiling. For rapid identification of contents, medical supply cabinets at the level of the patient(s) and above must have shatterproof, lightly tinted, transparent sliding doors. All sliding Lexan door frames to be extruded aluminum with full length extruded aluminum handles. Lexan sliding doors must be 3/8" thick and must bear a permanent identifying mark certifying compliance with current Transport Regulations for motor vehicle glazing. Open shelves or compartments must be provided with easily opened or removable belts or cargo nets designed to contain ten (10) times the weight of the items stored loose on the shelf or in the compartment. (Belts provided shall be seat belt style with metal bayonet style connectors or demonstrated equivalent. Velcro fastening for restraining belts is not acceptable). To maximize the utility of storage space, the design must include positive features, such as reasonably wide and tall openings, rectangular spaces and interior dimensions that are suitable for accepting stacking containers. Shelves must be adjustable, removable and capable of	Yes	No	

	loads of 48 pounds. Tops of shelves must be bordered or surrounded by a lip of not less than ¾" in height. Cabinet shelves must be secured to Unistrut using bolts and lock washer.			
7.2	**Cabinet Construction - Materials** Cabinets shall be constructed of sheet aluminum 5050-H32. In order to maintain maximum payload and still meet structural requirements sheet thickness will vary in size dependent upon the specific function of each cabinet. Cabinets shall be constructed as independent modular units completely assembled outside the vehicle then secured to the module structure, thereby enhancing the overall structural integrity of the module. Cabinets created or assembled in the vehicle as a dependent part of the module structure shall not be acceptable due to their inability to enhance the overall structural integrity of the module.	Yes	No	
7.3	**Cabinet Windows - Track** The sliding window track shall be an aluminum extrusion and shall be designed to minimize fluid contamination. For this reason the track opening width shall be a maximum of 30 % larger than the thickness of the window itself. For example if the window is .250 inches thick the track opening cannot be larger than .325 inches. The track extrusion shall surround all four sides of the cabinet opening and be lined to prevent rattles and to assist in keeping the windows in the closed position during transport	Yes	No	
7.4	**Cabinet Windows - Safety** Windows shall be made of .1875 Lexan high strength polycarbonate. Windows shall have full length extruded aluminum handles for additional strength and ease of opening.	Yes	No	

7.5	**Cabinet Doors – Hinged** All interior hinged aluminum doors shall be boxed pan formed. They shall be made of .090 inch Aluminum 5052-H32. They shall be welded and ground smooth and shall be coated with acrylic urethane utilizing the powder coating process as described. All interior hinged Lexan doors shall be .250 or .5 high strength polycarbonate. All hinged doors shall have chrome hinges and Southco, 2" round stainless steel slam latches with pull ring.	Yes	No	
7.6	**Cabinet Shelves -Construction** Interior cabinet shelves shall be constructed of boxed pan formed .091 aluminum and shall be adjustable. They shall be coated with acrylic urethane utilizing the powder coating process as described. To keep the shelves from rattling the manufacture shall securely bolt the shelves to unistrut. **No Exceptions**	Yes	No	
7.7	**Cabinet Lights** Interior cabinets shall have LED strip lighting mounted vertically on inside the cabinet just behind the window. They shall be rated for 50,000 hours. There shall be a switch at the Action Wall to control the lights.	Yes	No	
7.8	**Ceiling - Construction** The interior ceiling shall be constructed of .090 inch aluminum 5052-H32. It shall be the full length and width of the module and shall fit under all cabinets, trim pieces and safety cushions. All light holes, IV holders, hardware and mounting holes shall be cut out prior to coating. It shall be coated with acrylic urethane utilized the powder coating process as described. Installed as standard shall be (2) cast aluminum IV Hangers, (1) oxygen outlet (10) LED lights, (1) full length grab rail (2) grab handles and (3) antenna access plates.	Yes	No	

7.9	**Ceiling - Attachment** Ceiling panel shall be attached to the roof structural tubes utilizing White head truss self-tapping fasteners. Prior to mounting the ceiling tubes shall be covered with 1/8 inch foam insulation barrier to prevent heat transfer and noise, due to vibration and rattling.	Yes	No	
7.10	**Flooring Installation** Flooring shall be cut from one continuous piece of vinyl flooring. It shall be 100 percent cut prior to installation to prevent small scale cracks and over cuts. These tend to show up over time as the flooring shrinks and can become an area for fluid accumulation and absorption. It shall be secured to the subfloor with structural adhesive that has zero (O) VOC's	Yes	No	
7.11	**Flooring Roll Up Walls** The flooring shall roll up three inches on the main street side cabinet wall and the curbside squad bench. The flooring running up the side shall be trimmed off with an aluminum trim with no exposed fasteners and sealed to prevent fluids from accumulating behind the flooring.	Yes	No	
7.12	**Flooring - Material** The patient compartment standard flooring shall be commercial grade, anti-skid, anti-bacterial flooring material, Lon Plate II Gunmetal #424. Flooring shall be sanitary and seamless and shall meet FMVSS 302. It shall be installed per the technical specifications and recommendations of the floor manufacture.	Yes	No	
7.13	**Rear Threshold** The rear door threshold shall be 18 gauge stainless steel. The threshold will be permanently installed with a sealant/adhesive. The sealant/adhesive material will both secure the threshold and provide a full perimeter seal to	Yes	No	

	prevent fluid borne contamination. There shall be no holes drilled in the stainless and no screw type attachments required.			
7.14	**Wall Panels - Construction** Wall panels shall be constructed of .090 inch aluminum 5052-H32. They shall be coated with acrylic urethane utilizing the powder coating process as described.	Yes	No	
7.15	**Attachment** Wall panels shall be attached to the structural wall tubes utilizing White head truss fasteners that are drilled and tapped. Prior to mounting the wall tubes shall be covered with a 1/8 inch foam insulation barrier to prevent heat transfer and noise, due to vibration and handling	Yes	No	
7.16	**Patient Compartment Dimensions**			
	A) Approximately (72”) between the finished floor and ceiling.	Yes	No	
7.17	**Interior Cabinets** That section should read All interior cabinet construction is to be constructed out of .091" or greater aluminum. There shall be no wood material used in any part of the interior cabinet construction. **No Exception.**	Yes	No	
7.18	**Bulkhead Cabinet Upper** Located above the cab to module opening shall be a cabinet with a hinged Lexan door.	Yes	No	
7.19	**Bulkhead Lower** There is to be 4 Glove Box Holders mounted below upper bulkhead and above pass-thru window.			

7.20	**Street side Forward Cabinet** Located behind the attendant seat shall be the heating and air conditioning unit in the upper portion of cabinet.	Yes	No	
7.21	**Street side Forward Cabinet Upper** Located above the medical control center Action Wall shall be a full size cabinet. It shall have two (2) adjustable shelves and sliding lexan doors with aluminum extruded frames.	Yes	No	
7.22	**Medical Control Center – Action Wall** A medical control center shall be provided at the forward street side of the patient compartment area. It shall be in close proximity to the rear facing attendant seat. Mounted in this area shall be the Oxygen and Suction System, Rear Attendant Control Panel, 12 and 110 volt outlets, Control Thermostat for Rear Heat/AC unit and other equipment as specified. Exact arrangement will be determined after bid award. The attendant switch panel and environmental controls shall be built into a separate angled section below the upper cabinet.	Yes	No	
7.23	**Action Wall Counter** Below the action wall shall be a counter constructed of a stainless steel material and shall include a retaining lip on two sides. It shall be completely sealed to the action wall and forward compartment.	Yes	No	
7.24	**Suction Canister Cabinet** Above the action wall counter shall be the SSCOR suction canister	Yes	No	

7.25	**Glove Box Cabinet** Located over the Curbside Entrance Door shall be a cabinet with drop down loading door for (3) Glove Box's.	Yes	No	
7.26	**Street side Mid Cabinet** Above the counter shall be a cabinet with two adjustable shelves and sliding Lexan doors with aluminum extruded frames. Below countertop there is to be a cabinet with aluminum extruded frames.	Yes	No	
7.27	**Street side Rear Cabinets - Rear Stack** Located rearward of the mid cabinet stack shall be inside/outside access to the rear exterior compartment. It shall have one adjustable shelf and sliding Lexan doors as described. Above the inside/outside access shall be a cabinet with a hinged Lexan door with aluminum extruded frames.	Yes	No	
7.28	**Curbside Jump Kit Cabinet - Access** At the curbside front of the vehicle shall be a cabinet supplied with (3) adjustable shelves for storage of jump kits. For ease of access and quick functionality these shelves shall be open on two sides. Access shall be provided on the interior forward of the squad bench and on the exterior curbside though an access door. The location of this cabinet is critical to how the crew functions.	Yes	No	
7.29	**Curbside Jump Kit Cabinet - Shelves** Shelves shall be heavy duty and box pan formed of .125 inch Aluminum 5052-H32. They shall have a return flange on four sides and shall be welded, ground smooth and coated as described. The shelves shall be securely bolted	Yes	No	

	to Unistrut.			
7.30	**Locking Drug Cabinet** Above the Jump Kit Cabinet shall be a locking Drug Cabinet. It shall have dual hinged aluminum doors and shall be 37”W x 24”D.	Yes	No	
7.31	**Curbside Squad Bench Cabinet** Above the Squad Bench shall be a triple wall cabinet. The cabinet shall have (3) top hinged Lexan doors with pneumatic hold opens and Austin Hardware stainless steel slam latches. The height of this cabinet shall take into consideration KKK-1822F for distance between bottom of cabinet and Squad bench cushion.	Yes	No	
7.30.1	**Tip-Out Waste Cabinet** Below the forward end of the Squad Bench shall be a Tip-Out waste cabinet constructed of aluminum. This cabinet shall include a waste container. Sharps container shall be mounted on wall aft of squad bench. Sharps container bracket will be provided by Robertson County.	Yes	No	
7.31	**Patient Compartment Seating**			
	A) Squad Bench - A squad bench shall be provided on the curbside of the vehicle with seating capacity for three people. The bench shall be box pan formed of minimum .090 inch aluminum. It shall be welded, ground smooth and coated as described. The bench cushions shall be 2 inch thick high density flame retardant foam, covered with high grade color coordinated vinyl. There shall be a single piece lid hinged for internal storage, and shall open to not less than 70 degrees and have pneumatic lifting supports on each side. The squad bench lid shall include an automatic latch that shall secure the squad bench lid when in the down position. The lid shall be constructed of durable	Yes	No	

	lightweight materials. The interior of the squad bench shall provide additional storage, be completely sealed and coated to create a seamless interior for easy and thorough cleaning and disinfecting. Three sets of self-retracting, auto lock style seat belts conforming to federal regulation F.M.V.S.S. #571.209 shall be mounted along the curbside wall above the squad bench Seat belts shall be secured to a minimum .250 inch aluminum plate. The plate shall be continuous from front to back and mounted in vertical slots that are cut into the structural tubes. We require this type of construction in order to ensure seat belt compliance and to also have the seat belt retention plate act as a free floating crash barrier in the event of a side collision. Manufacture must supply design drawings with bid. The manufacturer shall provide a minimum of three restraint strap receivers on the face of the squad bench that work in conjunction with the squad bench seat belts for securing a patient lying on the squad bench. All retention devises must conform to all FMVSS regulation: #571.207, #510.210 and #571.209 at a minimum. Squad bench will have a 2 position 6pt. harness to meet the new SAE requirements per KKK-1822F			
	B) Attendant Seat. The patient compartment shall be supplied with a rear facing attendant seat. Seat shall be a high back automotive style captain's chair with a minimum of 6 inches seat travel forward and backward. Seat shall be vacuum formed heavy grade vinyl with no seams and come provided with two fold down armrests. This seat, positioned at the head of cot shall provide shall provide easy access to all of the action wall controls and outlets. It shall be supplied with a three point seat belt. The attendant's seat shall be mounted on a swivel base and will have full 360 degree swivel and 4 inches of travel. The attendant's seat base shall be installed with four (4)	Yes	No	

	7/16" grade 8 bolts inserted through 2" support bushings mounted in the subfloor and through a 1/4" reinforcement plate welded to the 'C' channel floor substructure. The seat, base and all retention devices must conform to all FMVSS regulation: #571.207, #510.210 and #571.209.			
	E) "Action Area Countertop" There is no CPR seat requirement within this specification. Extend countertop rearward. Robertson County will supply and bidder must install an NCE (National Creative Enterprises) X9000 mount for a Zoll X-series monitor on aft portion of action area countertop.	Yes	No	
7.32	**Restraints Passenger** All seating positions must be provided with seat belts. Seat and seat belt installations must comply with current FMVSS/CMVSS. Where there is no regulation under FMVSS/CMVSS, as with the side facing seat, the installation must use materials and designs which meet the spirit of the FMVSS/CMVSS regulations for passenger restraints. Installations must be tested to relevant FMVSS/CMVSS. The geometry of any seat belt arrangement must provide pelvic restraint designed to remain on the pelvis of the occupant under all conditions. The Squad Bench requires a net located at the front edge of the seat area. This device is intended to prevent the occupant(s) of the seat from moving forward during rapid deceleration. The net must be attached in a minimum of four (4) points utilizing aircraft-style, low profile latches which allow the net to be removed quickly and easily. The net must be made from suitably-colored cargo strapping that can be cleaned if required. The approximate width of the net must be five hundred thirty (530) mm. This device must restrain the occupant(s) along the side of their body and head to prevent extensive flexing of the spine or neck. This device must withstand a test load of 13,344 Newtons.	Yes	No	

7.33	**Cot Fastener** **A).**A Stryker Performance Loading System is required and will be installed by the manufacturer. **B.)** A Stryker Powerload loading system as an optional price and delete the Liquid Spring Rear Suspension. Again optional pricing only.	Yes	No	
7.34	**Action Wall Switch Panel**			
7.34.1	The action wall switch panel shall include the following switches: a) Left Cot lights (high-off-low) b) Right Cot lights (high-off-low) c) Center ceiling lights (3-Way, high, cab to module) d) Cabinet lights (interior cabinets) e) Exhaust Fan f) Electric Suction g) Attendant light	Yes	No	
7.34.2	Other control switches or functions at the action wall should minimally include: a) Inverter Panel b) Heater/AC thermostat and fan c) Stereo volume control d) Digital clock – 24 hour digital wall clock showing minutes and seconds.	Yes	No	
7.34.3	The action wall shall have (2) 12 volt DC (plug-in style, accessory type) and (1) 110 volt AC lighted outlet.	Yes	No	
7.35	**Interior Lighting**			
	A). Interior ceiling shall have a minimum of ten (10) interior dome lights. Lights shall be LED and shall be completely flush with the ceiling surface when mounted. They shall be rated for 50,000 hours and have a maximum draw of 1 amp at 12 VDC per light. There shall be (4) over the primary cot and (4) over the squad bench switched Hi/Off/LO from the rear switch	Yes	No	

	panel. The four lights over the primary cot shall also be activated when the side or rear module entrance doors are opened or when the 15 minute restocking timer is activated. There shall be (2) in the center of the ceiling and shall be controlled by a 3-Way circuit between the cab and patient compartment.			
	B). The patient compartment shall be equipped with a fifteen (15) minute timer, wired direct to battery, to allow operation of the module dome lights while the vehicle is off. This feature will enable personnel to clean and restock the vehicle, but eliminates the risk of leaving the lights on and draining the batteries. This switch shall be located on the curbside wall near the side entrance door.	Yes	No	
7.35.1	**Attendant light**, LED with switch at the action wall	Yes	No	
7.36	**Cabinet Lights** Interior cabinets shall include LED strip lights and controlled by a switch on the Action Wall switch panel.	Yes	No	
7.37	**Interior Cabinetry** **All interior cabinetry must conform and be certified to the Change Notice 10 testing per KKK-1822-F Version (No Exception)**	Yes	No	

Section 8 Low-voltage Electrical System

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
8.1	**System Standards** The converter added electrical system must meet all current KKK ambulance design standards. The converter added electrical system has proven to sometimes be the most complex and troublesome system on this type of vehicle. A system is desired that is simple in design so that electrical problem diagnosis and repair time can be minimized. The electrical system must be thoroughly engineered and manufactured to allow simple personnel operation. Finally, the system must be designed so that the probability of experiencing dead batteries, shorted electrical components and engaging in lengthy troubleshooting procedures will be reduced.	Yes	No	
8.2	**Load and Design Parameters - Design** All wires, switches, outlets and related components shall be rated to carry a minimum 125% of the maximum ampere load for which the circuit is designed (circuit breakers being the one exception). The system shall be designed to have the module power supplied independently of the chassis power supply.	Yes	No	
8.3	**General** All added body and chassis electrical equipment shall be served by circuits separate and distinct from the chassis	Yes	No	

	circuits. All vehicle 12VDC wiring shall be copper crosslink polyethylene wiring (GXL) or SGX rated to 250 degrees Fahrenheit, and conform to all SAE J1128 requirements. The wiring shall be color coded, numbered, and function imprinted every six (6) for permanent identification and correspondence with the electrical schematics. Any circuits protected below 6 amps shall use an ATC type fuse and holder. Any circuits requiring wiring larger than 10 gauge shall include crimped and soldered copper lugs.			
8.4	**Grounding** All components shall have ground wires returning to the ECC (Electrical Control Center). There shall be no components that are grounded to the module.	Yes	No	
8.5	**Service Loop** At the connection points of all components and devices shall be a minimum seven (7) inch service loop. There shall be sufficient length for two terminal changes on components in the power distribution area.	Yes	No	
8.6	**Harness - Design** Generic harnesses with numerous wires or wires marked with functions that are not on this vehicle will not be accepted. All harnesses are to be assembled to this specific vehicle. They shall be wrapped in protective loom and securely fastened along the module structure prior to cabinet installation.	Yes	No	
8.7	**Color coded harness wiring** All wiring must be copper, with CSA/ULC	Yes	No	

	approved insulation. Wiring sizes #8 or smaller must conform to current SAE standards and must have minimum SXL or GXL type insulation, if approved by the OEM chassis manufacturer conforming to current SAE standards. Sizes larger than #8 gauge must be standard, oil-resistance, automotive type. All wiring must be color-coded and/or label-coded to indicate purpose of wiring. If labeled, labels must be imprinted in contrasting color, readable and marked at eight inch intervals or less. If permanently color coded, wires must be the same color from start to termination of run. Where wires pass from the outside to the inside of the vehicle, proper weather sealing must be provided by means of an approved sealant. Acceptance standard is Dow Corning 786 Sealant. Wiring must not pass across the floor of the driver compartment nor under the floor mats or metal trim strips, unless properly protected within a channel of fiberglass, aluminum or stainless steel, or an approved equivalent. No wiring must pass within eight inches of the oxygen system. A minimum of an eight inch service loop of wire or harness must be provided at all electrical components, terminal and connection points. All wiring must be properly protected by elastomeric, oil-resistant grommets where it goes through metal or other abrasive areas. Wiring must be neatly routed and groups of			

	wires formed into a harness and securely supported with rubber-coated, metal clamps. Wiring must be routed in conduit or high temperature looms with a rating of 135°C.			
8.8	**Harness - Plugs** All wiring harnesses shall be connected to the power distribution utilizing harness plugs. These plugs shall have a positive locking feature. Access for disconnecting the harnesses from the cab to the module shall be provided and will be readily accessible.	Yes	No	
8.9	**Power Distribution - Connectors** Connection from the power distribution circuit to the vehicle harnessing shall be done with locking universal style connectors. These connectors shall utilize a combination of pins and sockets. They shall be completely enclosed, have positive polarization, positive locking and have rear cavity identification.	Yes	No	
8.10	**Voltmeter- Display** Shall supply a digital LCD display for voltage reading of both the conversion voltage and separately the chassis voltage. It shall be backlit for low light and also be readable in direct sunlight. It shall also have a low voltage alarm. The voltmeter shall be a digital display meter accurate to + or - 2%. The display must indicate the stabilized voltage of the chassis and module batteries. Together and Separately.	Yes	No	

8.11	**Ammeter - Display** The manufacture shall supply a digital LCD display for amp reading of alternator current draw. It shall be backlit for low light and also be readable in direct sunlight. The ammeter shall be a digital display meter accurate to + or - 2%. The display shall indicate the current flow of the vehicles 12 volt system. The vehicle shall come equipped with an electronic Hall Effect sensor mounted so that the amp load on the vehicle 12 volt system can be accurately measured at the ammeter located in the driver's control console.	Yes	No	
8.12	**Battery System -Charging** The alternator shall provide charging to the chassis and module batteries when the engine is running. The battery system shall utilize the OEM ignition switch to connect and disconnect module power and chassis loads. The manufacturer shall provide an amp load test certification. The documentation shall provide the end user with the vehicles operating load requirements and the units remaining reserve capacity.	Yes	No	
8.13	**Battery System – Ambulance Connect** There shall be a dedicated Ambulance Connect switch (Master) located on the main drivers control panel to disconnect module power loads. This switch shall be On/Off and it shall be controlled through the chassis ignition switch regardless if the engine is running or not. The design shall allow the module load to be disconnected while the engine is running This switch shall connect/disconnect the entire module electrical system with the exception of the	Yes	No	

	12V DC outlets, DOT lighting circuitry including backup alarm, the door open warning display, and the chassis circuitry.			
8.14	**Battery System – 5 Minute Timer** There shall be a 5 minute battery shut-off circuit. The ignition switch, when shut off, will activate a timer that will leave the batteries on for five minutes so that the module dome lights can be left on for patient unloading or vehicle restocking.	Yes	No	
8.15	**Batteries** Battery compartment, located in lower curbside exterior compartment, should be easily accessible (slide out tray) It should be ventilated and large enough to hold an OEM and 2 dual purpose deep-cycle batteries. Battery cables shall be AWG (1/0), enclosed in loom and run unbroken from the battery location to the power distribution. They shall be secured underbody utilizing insulated metal straps**.** Dedicated ambulance conversion circuit batteries should be the same brand, model and type (maintenance free).	Yes	No	
8.16	**Anti-Theft –** This switch when activated permits the ignition key to be removed from the steering column, while the engine is running, thereby locking the steering column and gear selection lever. All other mechanical and electrical functions are operable including power door and compartment locks.	Yes	No	

8.17	**Battery Boost –** (Sure Start) Battery System. This system has (2) isolated and fully charged batteries to allow for emergency engine starting should the chassis batteries become discharged. A Momentary switch on the front console. Will tie all batteries together.	Yes	No	
8.18	**Spare Circuits** The vehicle shall come equipped with (2) spare circuits rated at 10 amps each. One circuit shall be controlled by a spare rocker switch mounted in the front switch panel.	Yes	No	
8.19	**Fuses and Circuit Breakers** All circuits must be protected by means of properly sized circuit breakers. All circuit breakers (Pollack 54-5XXPL) must be manual reset type. They must be securely mounted, easily removable and readily accessible for inspection and service. All circuit breakers must have size and function identified permanently at the location of the breaker.	Yes	No	
8.20	**Door Activated Switching** Patient compartment doors must be fitted with magnetic door switches .The side door switch must operate one (1) bank of interior lights on low and passenger side floodlight. Rear door switch must operate one (1) bank of the interior lights and the two (2) rear facing loading lights.	Yes	No	

8.21	**Electrical Load Rating** A detailed estimate of the total electrical load imposed by the conversion electrical system, complete with all emergency warning system components, must be included with bid. Performance during the final inspection will be compared to this estimate.	Yes	No	
8.22	**Inverter, 110 Volt** A minimum 1000 watt power inverter, Vanner 1050W (acceptance standard) complete with 50 Amp battery charger shall be installed. The charger shall be wired so that it charges all chassis and conversion batteries. The Inverter/Charger Shall come with a built-in transfer switch to automatically select either shore or inverter power. The remote monitor panel shall be installed by the Action Wall switch panel. The (110V) circuit must be ground fault interrupter (GFI) protected. Inverter shall be ON demand (no dash switch) to provide 110 volt AC power to the 110V outlets.	Yes	No	
8.23	**110 Volt Outlets** ▪ One 110V receptacle over the Action Area Countertop ▪ Three 110V receptacle in the Jump Kit cabinet, (1) at each shelf. ▪ One at the head of the squad bench.	Yes	No	
8.24	**12 Volt Outlets** ▪ Two (2) 12V receptacles at the	Yes	No	

	forward action wall. ▪ One 12V receptacle above the 2nd shelf of the Jump Kit cabinet near the curbside entrance.			

Section 9 Exterior Lighting Systems

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
9.1	**Emergency Warning lights, General** The emergency warning system must provide the vehicle with all-round conspicuity, be highly perceptible and have attention-getting audio and visual signals for the safety of the ambulance and public, while imposing the minimum electrical load on the conversion electric system. The emergency lighting system must utilize all LED technology. To maximize conspicuity, this system adheres to the principles that: White (clear) light will be used to gain the viewer's attention, Red light will convey the "emergency" message and Amber will convey the "caution, vehicle stopped" message. The system must be comprised of components and devices that comply with the requirements of current SAE standards that are applicable to the unit. All warning lights must be mounted so as to project maximum effective intensity beam of the horizontal axis +0° up, -2° down. They must project a beam spread of at least 5° up and 5° down, and at least 45° left and right of the horizontal-vertical axis. The energy output of the warning light system must not degenerate below the performance requirements over the life of lamps.	Yes	No	

9.2	**Forward Roof-level Warning Lights**	Yes	No	
	Front Flashers – There shall be seven (7) Whelen 900 Series Super LED flashers mounted across the front of the module. Layout shall be Red/White/Red/White/Red/White/Red. Lights are to be mounted on front module wall and Auxiliary A/C condenser cover	Yes	No	
9.3	**Side and Rear Roof-level Warning Lights**			
	A) Side Flashers - There shall be a total of four (4) Red Whelen 900 Series Super LEDs. The lights shall be located at the upper outboard corners of the curbside and street side walls of the module.	Yes	No	
	B) Rear Flashers – There shall be two (2) Whelen Red 900 Series Super LED flashers located on the upper outboard corners of the rear of the module. There shall be a one (1) Amber Whelen 700 Series Linear Super LED. The light shall be located at the upper center of the rear of the module.	Yes	No	
	C) Window Flashers – There shall be two (2) additional Whelen Red 900 Series Super LED flashers on the rear to show through the windows when the doors are open.			
	E) Turn Signals - There shall be a total of two (2) Whelen 600 Series Amber LED Turn Signal lights. One shall be on the rear curbside and one on the rear street side.	Yes	No	
	F) Marker Lights -The upper body marker lights shall be Whelen OS Mini LED type. There shall be (2) Amber mounted at the forward end of each side of the module roof, (2) Red mounted at the rearward end of each side of the module and (2) Red mounted in the rear module in the corners. The shall be (3) forward facing Amber marker lights mounted above the 900 Series lights and (3) rear facing Red marker lights mounted above the Amber 700 Series light There shall be two (2) rear Whelen 500 Series Red LED	Yes	No	

	lights, mid body on the sides of the module at the rear. These lights shall be wired to function as both DOT marker lights and as turn indicators and as emergency hazard warning lights. There shall LED marker lights installed within the crash rail. (2) Amber forward each side and (1) rear each side.			
	G) Tail/Brake/Backup - There shall be Four (4) rear Whelen 600 Series LED Tail and Brake Lights. Two shall be on the rear curbside and Two on the rear street side below the Turn Signals. There shall be one LED Brake Light mounted center above the rear doors to function as a high center mount brake light. There shall be a total of two (2) White Whelen 700 Series LED Backup lights mounted on the rear of the module above the diamond plate.	Yes	No	
	H) Chrome flanges shall be included on all emergency and automotive lights.	Yes	No	
9.4	**Grille Lights**	Yes	No	
	There shall be a total of two (2) Red Whelen LINZ6 lightheads. The lights shall be located at the outboard sides of the chassis grille in the upper section.	Yes	No	
9.5	There shall be a total of two (2) White Whelen LINZ6 Lightheads. The lights shall be located at the outboard sides of the chassis grille in the lower section.	Yes	No	
9.6	**Intersection Warning Lights**	Yes	No	
	There shall be a total of two (4) Red Whelen 700 Series Super LED's. The lights shall be located on the chassis fenders in CPI Housings and over the rear wheel wells.	Yes	No	

9.7	**Emergency Light Switching**	Yes	No	
9.8	**Flash Pattern**			
	A) Rear upper Led flashers to be 'On' with the brake lights. Emergency lights to override the brake lights.	Yes	No	
	B) Light heads to be wired to meet KKK. "A" should alternate with "B" and the flash pattern should be a triple flash (two quick followed by a longer third).	Yes	No	
9.9	**Exterior Task Lighting/Scene Lights**	Yes	No	
	Whelen 900 Series LED scene lights: Two (2) White Scene lights on each side (left-street side and right-curbside) of the ambulance. Two (2) White Scene lights on the rear plane of the vehicle (unobstructed when the rear doors are open). Scene light activation controlled at driver's console. Curbside and rear lights must activate when respective doors are opened.	Yes	No	
9.9.1	The rear facing scene lights and backup lights shall operate automatically when the vehicle transmission is placed in "REVERSE".	Yes	No	
9.9.3	Patient Compartment door switching to be designed to allow for temporary disconnection of scene lights while the door is open. Once the door is closed again the switch resets to normal momentary On/Off operation.	Yes	No	

Section 10 Audible Emergency Warning (Siren)

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
10.1	**A) Siren/PA System** - Siren-PA System to be Federal EQ2B with: radio, PA, Manual, Wail, Yelp, Air Horn and Piercer tone. PA microphone to be mounted on the passenger side of the center console. **B) Siren Speakers** shall be Cast Products polished aluminum and shall be mounted outboard on the bumper end and be a minimum 100 watt. They shall meet SAE J1849	Yes	No	
	F) The Siren shall operate through the chassis horn ring whenever the siren is on. When the Siren is off, the horn ring shall operate the chassis horns. **G)** Install a Buell Air horn System. Horns to be mounted on the side auxiliary A/C condenser mount on the front module wall. Horn will be activated by an easily identifiable momentary switch on the driver's console.	Yes	No	

Section 11 Oxygen System

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
11.1	This compartment shall contain a ramp system and a two wheel cart or other approved system to facilitate loading the oxygen tank without lifting, as well as bracketry to safely secure (2-4) "D" size portable oxygen tanks.	Yes	No	
11.2	**Oxygen Hoses** - all oxygen system service hoses, fittings and devices shall be made of non-ferrous materials. Hoses used to pipe medical Oxygen shall be electrically non-conductive, ¼" inside diameter with an abrasion resistant, white colored outer jacket. The hose manufacturer's name, part number, inside dimension and working pressure rating shall be permanently marked along the entire length of the hose. Hoses shall be secured to prevent excess movement. An Oxygen Wrench shall be tethered to the wall.	Yes	No	
11.3	**Oxygen Outlets –** There shall be (3) Quick Disconnect Oxygen outlets installed, One Action Wall, One Ceiling and One Forward Squad Bench	Yes	No	
11.4	**Electric O2 –** An electric Oxygen solenoid with switch on rear panel to be installed. It shall include a Manual Bypass on the Action Wall should the electric fail.	Yes	No	
11.5	**50 PSI regulator** shipped loose with the vehicle.	Yes	No	

Section 12 Fixed Suction (Vacuum) System

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
12.1	**Aspirator System** A Lexan mounting bracket for a 1200 CC disposable suction canister shall be recessed below the action wall countertop. The suction pump shall be piped to an SSCOR regulator that is mounted on the action wall near the suction canister. The regulator shall be complete with indicator gauge and shall be piped to the vacuum pump. One 72 inch patient suction tube with a plastic suction tip shall also be supplied with the system.	Yes	No	
12.2	**Collection Container and Mount** The container mount and 1200 ml collection container system should be preferably the MediVac Guardian with disposable hard, clear plastic canister.	Yes	No	

Section 13 Safety Equipment

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
13.1	**Cushions and Protective Pads - Interior** All seating and protective pads shall be covered in seamless vacuum formed vinyl. Seamless cushions and pads are required for infectious control. Cushions with seams are especially susceptible to blood born pathogen contamination. Sewn seams puncture the vinyl surface and it is extremely difficult to reseal these surfaces. Vinyl seat covers must be vacuum formed. Hand stretched vinyl will not be acceptable because it keeps the vinyl surface under constant tension and therefore more susceptible to tears and cracking.	Yes	No	
13.2	**Cushions and Protective Pads - Vinyl** Vinyl selected must be color coordinated with the attendant seat. It shall be commercial grade minimum of 32 ounce weight. It shall be abrasion resistant utilizing the Wyzenbeek test method of 500,000 double rubs with #8 cotton duck. It shall have antibacterial properties (Staph resistant) as well as mildew resistant. It shall also be urine, sulphide, oil and enhanced bleach resistant. It shall be flame resistant to FMVSS 302.	Yes	No	
13.3	**Cushions and Protective Pads - Foam** Foam utilized for cushions and back rests shall be a minimum 2 inch medium density closed cell foam that meets FMVSS 302 flammability tests.	Yes	No	

13.4	**Cushions and Protective Pads – Head Bumpers** There shall be Yellow Safety Vinyl head bumpers located over the module entrance doors. The side entry door header shall have a foam padded cushion spanning the full width and height of the header wall above the door. The rear entry door header shall have a 2" high density flame retardant covered cushion spanning the full width and height of the header wall above the doors.	Yes	No	
13.5	**Cushions and Protective Pads – Backrests** All of the backrests and seat cushions shall be constructed with 2 inch thick, high density fire retardant foam covered with a heavy grade color coordinated vinyl. The cushions and backrests shall be thermal vacuum formed automotive vinyl. Backrest and seat cushions shall be securely fastened yet easily removable for cleaning. All other cushions shall be attached with Christmas tree type automotive blind fasteners. The Squad Bench backrest must have a lower lumbar support bolster formed into the cushion. Separate lumbar cushion will not be acceptable because it increases seams and crevices.	Yes	No	
	A) Passenger Restraint All seating positions should have OEM seat belt(s) that comply with FMVSS	Yes	No	
13.6	**Rail and Handles**	Yes	No	
	A) Ceiling-mounted grab rail in the patient compartment should run the maximum length above the main cot (Yellow Powder Coat 'anti-microbial' impregnated).	Yes	No	
	B) Rear and side entrance doors to be equipped with yellow "L" type grab handles (anti-microbial impregnated).	Yes	No	
	C) Grab handles shall be mounted inside each entry door to the patient compartment to assist entry (anti-microbial impregnated)	Yes	No	

13.7	**Occupant Restraint Net** The Squad Bench requires a net located at the front edge of the seat area. This device is intended to prevent the occupant(s) of the seat from moving forward during rapid deceleration. The net must be attached in a minimum of four (4) points utilizing aircraft-style, low profile latches which allow the net to be removed quickly and easily. The net must be made from suitably-colored cargo strapping that can be cleaned if required. The approximate width of the net must be twenty-one (21) inches. This device must restrain the occupant(s) along the side of their body and head to prevent extensive flexing of the spine or neck. This device must withstand a test load of 13,344 Newtons.	Yes	No	
13.8	**Attendant Seat** The module attendant seat is to be a 3pt seat belt EVS Child Safety Restraint seat mounted on storage cabinet.	Yes	No	
13.9	**Driver Intention Lights** In the rear ceiling at the rear doors shall be Amber/Red/Amber LED indicator lights to warn the crew of Brake and Turn functions	Yes	No	

Section 14 Environmental Control System

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
14.1	**Climate Control System**	Yes	No	
	A) The patient compartment should have an independent climate control system including heating, ventilation and air-conditioning components.	Yes	No	
	B) The patient compartment HVAC climate should be controlled by a solid state digital thermostat mounted in the Action Wall. This control shall have a three speed fan switch and shall have a set temperature that turns on either the heating or air conditioning to achieve the temperature setting. It shall also be configured to default to the last selected temperature setting.	Yes	No	
	C) HVAC – To be capable of maintaining a patient compartment temperature of 68^{O} F throughout; despite an ambient outside temperature range from -40^{O} F to +40^{O} F.	Yes	No	
	D) HVAC system must be capable of 70,000 BTU heating and 46,000 BTU cooling. The blower for the combination unit shall have a minimum capacity of 650 CFM. Module to also have a front upper wall mounted auxiliary A/C condenser.	Yes	No	.
14.2	**Air Circulation – Design** The environmental system shall be a comprehensively designed system that incorporates controls and balances the following elements: 1). Conditioned air distribution. 2). Conditioned air recirculation. 3). Stale air exhaustion. 4). Fresh air intake. Manufacturer must have a system that addresses all four aspects (No Exceptions). Note: Passive air intake systems such as opening a window or chassis intake vent will not be	Yes	No	

	accepted.			
14.3	**Air Circulation - Distribution** To provide even distribution of conditioned air throughout the patient compartment an air duct shall be constructed that runs down the street side of the module at ceiling level. It shall contain a minimum of five (5) adjustable multi-directional vents. The duct itself shall be tapered in a way that equalizes the air flow coming out of each vent. The duct work shall also be insulated with 5/8 inch rigid foam insulation. Removable panels shall provide maintenance access to the heat/AC unit from both the face of the heat/AC cabinet and the back of the unit inside the forward street side compartment	Yes	No	
14.4	**Air Circulation - Return Air** The air return intake shall not be less than 50 square inches. This return system shall allow the existing air in the module to be re-circulated back through the heat A/C unit, thus allowing faster cooling or heating of the module environment. For maximum efficiency the vent shall be no more than 12 inches from the unit itself.	Yes	No	
14.5	**Exhaust Fan** The patient compartment shall be supplied with an exhaust fan with a minimum rating of 250 CFM. It shall be controlled by a switch at the Action Wall. Because it is critical for functioning and the large number of construction variables the manufacturer shall also supply documentation proving the effectiveness of the exhaust system. At a minimum it shall completely exchange the interior volume of air every three (3) minutes.	Yes	No	

Section 15 Two Way Radio Communication

Ambulances shall have a communication system that allows for all required communication between ambulance attendants, dispatch and medical direction. The intent of this section is to provide accurate information to ensure the installation of all required communication equipment.

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
15.1	**Communication (Radio) System**	Yes	No	
	A) A terminal block must be installed behind the driver's seat to accommodate the two-way radio power connections, and a cover must be placed over this block to prevent inadvertent shorting to ground. A device must be installed in series in the positive power cables which must protect the radio(s) from high and low voltage conditions. Three (3) terminals are required on the radio terminal block and must be labeled as "switched positive", "unswitched positive" and "ground". A #12 gauge wire must be provided from the "ground" terminal and must run to the metal frame of the vehicle, isolated from all other grounds, to ensure a good connection. The "switched positive" terminal must be wired via an isolated thirty (30) amp circuit breaker to the vehicles accessory/ignition energized via a relay to the vehicle's positive battery terminal. The "unswitched positive" terminal must be wired via an isolated thirty (30) amp circuit breaker to a constant, unswitched source of battery positive. The terminal block must be switched by the Ambulance Disconnect. Also have a power and ground/ antenna drop behind rear switch panel.	Yes	No	
	B) All radio wires and cables must be run in a manner to prevent any pinching, rubbing or any other form of damage. Wires and cables must be run through grommets wherever chafing damage could occur. Cables are to be run in	Yes	No	

	raceways or protective loom and soldered where required to prevent damage.			
	C) Each antenna mount must have a continuous piece of Type RG-58-A/U (C/U) low loss coaxial cable, (Belden, part number 8259 8262 or Amphenol part number 21-199) installed and routed in an appropriate manner. Route the coax cable from each antenna port to behind the driver's seat, leaving a 3 foot service loop and at least a foot at the antenna port.	Yes	No	
	D) The manufacturer is to provide four (4) antenna access ports in the ceiling of the patient compartment.	Yes	No	
	E) The manufacturer will provide and install a Sierra Wireless AirLink GX450 LTE/EVDO/GPS/Wi-Fi - Ethernet/Serial/USB (or current similar device) wireless access system. The device will be for the Verizon network. This will include AC Power Cable, a 5 year warranty, and the device specific external antenna mounted in the appropriate location.	Yes	No	

Section 16 Exterior Color, Graphics and Identification Signage

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
16.1	**Conversion Paint** – Must meet the following coating standards: *Standard test methods and minimum requirements for paint performance.* ***ASTM D3170 Chip Resistance*** ***Standard Test Method for Chipping Resistance of Coatings (Gravelometer)*** *Test samples must rate as 5 or higher in relation to quantity of chips (< 49).* *Test samples must rate as either A (< 1 mm) or B (1 – 3mm) in relation to size.* *Test samples must rate as "most chips did NOT penetrate to substrate" in relation to Point of Failure.* ***ASTM B117 Salt Spray Resistance*** ***Standard Practice for Operating Salt Spray (Fog) Apparatus*** *Test samples for a minimum of 2,000 hours.* *Visual appearance must show zero corrosion and zero blisters.* ***ASTM D3359 Adhesion*** ***Standard Test Methods for Measuring Adhesion by Tape Test*** *Test samples must rate as either 5A or 5B. Note: the 5 is the actual adhesion rating (zero % area removed) and the A or B denotes the type of test (A represents a simple X cut and B*	Yes	No	

	represents the cross-cut hatch pattern) ***ASTM D2794 Impact*** ***Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)*** *Test samples to be tested using the intrusion methodology.* *Test samples must have a minimum impact rating of 90 inch lbs. with zero cracking.* ***ASTM D1654 Corrosive Environments*** ***Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments*** *Test samples must have a minimum 80 cycle (1920) hours.* *Test samples to have a minimum average rating of unscribed areas of 8 (2-3%)* ***Ford BI-161-01 Mar Resistance*** ***MAR RESISTANCE DETERMINATION FOR AUTOMOTIVE COATINGS*** *Test samples must have minimum average gloss retention of 75% using 2µ polishing paper.* *Test samples must have minimum average gloss retention of 29% using 9µ polishing paper.*			
16.2	**Module Coating - Requirement** Due to long term chronic paint problems it shall be required that the manufacturer supply a **Lifetime paint warranty with no pro-ration**. This purchaser has experienced severe electrolysis, adhesion, bubbling, blistering and hairline cracks. The main requirement of a seamless body and isolators is to aid in reducing several of these paint problems. Through our research we have discovered that **powder**	Yes	No	

	coating is a far more durable process. Module exterior and interior must utilize a powder coating process. **A. The bidder supply in writing from the manufacturer that the vehicle will have Lifetime paint warranty with no pro-ration.** **B. This warranty will cover only the original owner on the original chassis.** **C. It will cover electrolysis, delaminating, bubbling, cracking, blistering and chalking.** **No Exceptions**			
16.3	**Module Coating - Finish** In order to prevent scratches, chipping and pitting we are asking that an additive (quartz or equivalent) be put into the powder coat. We acknowledge that this additive can reduce the smoothness of the finish.	Yes	No	
16.4	**Module Coating - Preparation** Prior to powder coat application the module shall be completely sanded from 80 to 180 grit. It shall be washed first in a degreasing solution. Secondly a neutralizing agent. Thirdly the module shall be completely covered in an acid etching solution and then finally coated in a solution that reduces long-term corrosion, improves impact resistance and promotes proper adhesion with the finish coat. **No Exceptions**	Yes	No	
16.5	**Module Coating - Fillers** As part of the process to eliminate long term corrosion of the paint there shall be no plastic fillers allowed on the finished aluminum body. Plastic fillers (bondo) tend to crack and shrink over time and are therefore unacceptable. The only fillers allowed on the finished	Yes	No	

	aluminum body will be thin walled epoxy fillers. Any defects that occur during the manufacturing process that require thicker type fillers will be unacceptable and the body must be re-welded or the component removed and rebuilt.			
16.6	**Module Coating –** Coverage prior to powder coating all holes including lights, fillers, hardware and all fasteners shall be in the module. **No Exceptions.** The entire module shall be coated including all door jambs. Vehicles painted with the doors mounted to module during the paint process will not be accepted. Due to the fact that electrolysis can start in one area and travel, it is required that the inside of the body panels below the floor line be covered 100 percent. Common residual overspray will not be considered as meeting this requirement. Finally the inside door jambs of the entrance doors shall also be covered 100 percent.	Yes	No	
16.7	**Module Coating - Auditing** Manufacturer must demonstrate a comprehensive auditing system. It is required that every vehicle (including each vehicle on multiple orders) undergo the following audit tests for vehicles manufactured to this specification: A. Orange Peel B. Thickness (mil test) C. Boil test D. Cross hatch Test cards shall be dated and marked with the specific vehicle identification number. These results shall be supplied at final inspection. **No Exceptions**	Yes	No	
16.8	**Graphics**	Yes	No	
	Signage must be supplied and installed that is necessary to convey operating or occupational health and safety instructions, etc., to attendants and/or occupants of the ambulance as the result of the chassis design, conversion design or equipment installations. Prior to the application of any signage, the surface to which the signage is being applied must be thoroughly cleaned. The film must be applied so that the surface is smooth and uniformly free of grit, blisters or other irregularities. Signage must be installed according to the signage	Yes	No	

	manufacturer's instructions. Signage must be in English or recognized international symbols, which may be used in lieu of English.			
16.9	**Miscellaneous Safety Equipment and Signs**	Yes	No	
	English and international symbols, signs and decals denoting "No Smoking" and "Fasten Seat Belts" must be prominently displayed in both the patient and driver compartments. These signs must be placed above the oxygen suction console in the patient compartment and on the dashboard in the driver compartment.	Yes	No	
	Fuel filler area must be permanently and prominently marked to indicate type of fuel. The lettering must be at least 1" high and located above the fuel filler stating "Diesel Fuel Only".	Yes	No	
16.10	**Lettering** **All Stripe and Lettering to be 3M Scotchlite Reflective** <u>LETTERING on SIDES</u> 6" Blue "Robertson County" 4" Blue "Emergency Medical Services" 6" Blue "Ambulance" with ¼" White Border 17" Blue "Star of Life" with ¼" White Border placed in center of lettering Official "Robertson County" logo on drivers and passenger door <u>LETTERING on REAR</u> "Robertson County" logo– (Below windows) 5" Blue "Ambulance" with ¼" White Border (2) 12" Blue Star of Life Above each light at rear window height with ¼" White Border	Yes	No	

	Front Module Wall and Hood 6" Blue "Robertson County" with ¼" Orange Border on Front Module Wall 5" Blue "Ambulance" with ¼" White Border on Hood Robertson County EMS Logos to be installed on the cab and rear doors. 32 inch Star of Life applied to the roof Please contact us for greater detail information on our stripe and lettering layout.			
16.11	**Striping** SIDE STRIPES 10" Orange with Beltline Strip- From Front Fenders around the Rear of the Module Exterior REAR CHEVRON to Top of Doors 6" Blue and Orange 3M Scotchlite Reflective- Entire rear Wall Install Two (2) unit number plate holders, 1 on each side of the module. Include loose with vehicle 2 plates that slide into holder with designation "MEDIC 2" in reflective material matching color of lettering on the module. ROOF (1) 32" Blue Star of Life with White Border (2) The unit designation of 74-01-41 will be placed on the vehicle roof in blue Scotchlite reflective.	Yes	No	

Section 17 Diagrams and Literature

Bidders to provide any drawings, schematics, wiring diagrams, illustrations and safety precautions that would enhance proper management, operation and maintenance with respect to the vehicle, the chassis, the module or any of the supplied/installed equipment.

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
17.1	**A) Supportive Literature** – All chassis manufacturer's manuals and documents to be included. The Ambulance manufactures operations Manual and all other documentation to be supplied on a USB Flash-drive storage device.	Yes	No	
	B) Literature - Bidders to provide drawings and literature and/or the electronic documents (PDF), for unit offered and should include: ▪ 10 Million Product Liability ▪ Proposal Line Item Detail ▪ CAD drawings depicting all interior and exterior views ▪ QVM Certification ▪ All applicable warranties offered ▪ Customer Service policies and hours of operation	Yes	No	

Section 18 Change Orders

All changes in the scope of work or the schedule must be approved through a formal process prior to executing the changes.

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
18.1	**A) Change Orders –** Any changes or modifications to the original order must be made in writing. All requests for changes must be approved by the purchaser before work begins.	Yes	No	

Section 19 Warranty Support

The successful bidder will be responsible to ensure that all of the features and items included in the bid and supplied (including sub-contracted items and OEM chassis) are in compliance with the manufacturer's specifications and will take responsibility for any warranty claims arising thereof.

Item No.	Specification	Yes	No	Deviation/Explanation (attach necessary documentation)
19.1	**A) Warranty Period -** The warranty period shall commence on the unit's in-service date.	Yes	No	
	B) Basic Warranties - The ambulance unit with respect to the vehicle, the chassis, the module or any of the manufacturer supplied/installed equipment, as well as optional attachments and workmanship shall be covered by warranty; by the dealer and/or manufacturer for a period specified	Yes	No	
	C) The successful bidder will be responsible to ensure all the features and items included in the bid and supplied are in compliance with the manufacturer's specifications and will take responsibility for any warranty claims arising thereof.	Yes	No	
	E) Electrical System Warranty Minimum - 5 years	Yes	No	
	H) Paint Warranty ☐ Minimum- Lifetime of Vehicle Non-Prorated	Yes	No	
	I) Module Structural Warranty Minimum- Lifetime of Vehicle	Yes	No	
	J) OEM Chassis Warranty Minimum- 3years/36,000 miles basic Minimum- 5 years/ 60,000 miles on powertrain Roadside assistance- 5 years/ 60,000 miles	Yes	No	

	I)OEM Components Warranty Minimum- 3years/50,000 miles on all components installed by ambulance manufacturer.	Yes	No	
	I) The warranty coverage shall include all parts and labor necessary to correct all defects of the materials, workmanship, and premature failure or design deficiencies identified during the warranty periods.	Yes	No	
	J) The bidder shall clearly define the procedure to be followed for repairs under warranty including the identity and location of warranty agents.	Yes	No	

EXCEPTIONS/CLARIFICATIONS

Each bidder may copy this form, as necessary to sufficiently list all exceptions and variations from specifications (Please list as shown, by page, item number, and check if vendor chooses not to supply, or is unavailable, or describe deviation or substitution in detail, if furnished). Purchaser will be the sole judge of proposed substitution equivalency.

VENDOR NAME:

BIDDING: _____

EXCEPTION PAGE: _____ OF _____

SPECIFICATION PAGE:	REFERENCE #	NOT AVAILABLE:	EXPLANATION:

Robertson County, Tennessee
NON-COLLUSION AFFIDAVIT

The agent of the bidding firm hereby certifies to the best of his/her knowledge and belief that this bid proposal to Robertson County, Tennessee has not been prepared in collusion with any other seller of similar products. The agent also certifies that the prices, terms and conditions of said bid proposal have not been communicated by the undersigned, nor by any employee or agent of the bidding firm, to any other seller of similar products and will not be communicated to any such seller prior to the official opening of said bid. The agent further states that no official or employee of Robertson County Government has promised any personal financial or other beneficial interest, either directly or indirectly in order to influence award of this bid.

_____

Authorized Signature, Title (Owner/ Corporate Officer) **Date**

Printed Name:_____

_____

Company Name

_____

Mailing Address

_____

Telephone No. **Fax No.**

Contact preferred email address: _____