



# Shelby County Tennessee

Mark H. Luttrell, Jr., Mayor

## SEALED BID

### Shelby County Government Purchasing Department

160 N. Main, Suite 900  
Memphis, TN 38103

*Issued: September 02, 2016*  
*Due September 22, 2016 at 2:00 P.M. (Central Standard Time)*

**SEALED BID # I-000404**

### **2016 OR LATEST MODEL AMBULANCES FOR SHELBY COUNTY**

Shelby County Government is soliciting Sealed Bids for the purchase or leasing of twelve (12) Ambulances. The Sealed Bid is located on the County's website at [www.shelbycountyttn.gov](http://www.shelbycountyttn.gov) and click the link "Department" at the top, then P for the Purchasing Department, then click on the link "Bids."

*Please Note: As a part of doing business with Shelby County, each individual, company, or organization is required to obtain an "Equal Opportunity Compliance" certification number prior to submitting your response.*

*You can access the online applications to receive the numbers indicated above at [www.shelbycountyttn.gov](http://www.shelbycountyttn.gov). To obtain a vendor number and an EOC number, please follow the instructions below:*

At the top of the home page, click on the links "Department", "P" for the Purchasing

Department and “Conducting Business with Shelby County”. The “Vendor Registration” link is at the bottom of the drop down box. Please download the application instructions and read thoroughly prior to accessing the application. (*Applications for a vendor number are accepted online only.*) The bid, as submitted, should include all estimated cost related to the services requested in this Sealed Bid. Respondents requesting additional information or clarification are to contact, Tosha Davenport at [tosha.davenport@shelbycountyttn.gov](mailto:tosha.davenport@shelbycountyttn.gov)

Bids must be received in the office of the Administrator of Purchasing **no later than 2:00 P.M. on Thursday September 22, 2016. Bids will be publicly opened at that time and all interested bidders are invited to attend.** Bids should be addressed

**Tosha Davenport  
Shelby County Government  
160 N. Main, Rm. 900  
Memphis, TN 38103**

The package containing an original (**clearly identified as original**) and four (4) copies of your bid proposal must be sealed and marked with the bidders name and “**CONFIDENTIAL, “FOR THE PURCHASE OR LEASING OF 2016 OR LATEST MODEL AMBULANCES”, SEALED BID**” #SBI-000404 noted on the outside.

**YOU MUST DISPLAY YOUR CURRENT E.O.C. ELIGIBILITY NUMBER ON THE OUTSIDE OF YOUR ENVELOPE, OR YOUR BID WILL BE RETURNED TO YOU UNOPENED.**

**Sincerely,**

**Tosha Davenport  
Purchasing Department, Shelby County Government**



## Exhibit A

### Ambulance Specifications

#### 1.0 SCOPE, PURPOSE AND CLASSIFICATION

##### 1.1 SCOPE

This specification covers a new commercially produced surface emergency medical care vehicle(s), herein referred to as an “ambulance” or “vehicle”. This vehicle shall be in accordance with the Ambulance Design Criteria of the National Highway Traffic Safety Administration, United States Department of Transportation, Washington, DC. This specification is based on current KKK - A1822 - FKKK - A1822 – F revision. It is the intent of this agency to purchase vehicle(s) that are professionally engineered and designed. It is paramount to this agency that vehicle(s) presented be built by a reputable manufacturer with considerable experience in the ambulance manufacturing field. To this end, this agency requires that each manufacturer provide the following:

1. A statement of fact, signed by an officer of the manufacturing company, disclosing that the manufacturer has delivered one hundred (100) ambulances within the last twelve (12) months of the date of this bid.
2. The size and location of manufacturing facilities and number of production staff.
3. A list of on-site engineering staff with educational accreditation.
4. ISO 9001:2000 Certification

Failure to provide this agency with the documentation required will be deemed non-responsive

##### 1.2 PURPOSE

The purpose of this document is to provide the manufacturer with a set of specifications and test parameters that will meet the criteria to manufacture a vehicle as set forth by this agency. This agency seeks a vehicle that will deliver “fair value”. Fair value is defined by this agency as the manufacturer's ability to provide a safe, functional, and practical ambulance conversion that will work in junction with the chassis specified at a reasonable cost. The specifications within this document are a basis to deliver such a vehicle to this agency. This agency at its discretion shall assess the intangible assets of the manufacturer such as, but not limited to, after quality, delivery support, customer service, parts availability and warranty turn-around time.

##### 1.3 CLASSIFICATION

This specification calls for the following type of vehicle in accordance with the current KKK - A1822 - F revision.

**Type III, Class I Ambulance (14,000 GVWR or more)**

## 1.4 GENERAL

This is an engineer, design, construct and deliver type specification meeting the needs of this agency. Attention has been given to the engineering and design aspect of this specification that will attain our goal of fair value. It is the manufacturer's responsibility to deliver a product meeting the criteria as set forth. This agency reserves the right to increase the equipment quantities that are specified. In addition, other agencies will be permitted to purchase equipment under this contract as a result of this specification, unless prohibited under law.

### 1.4.1 SITES OF WORK

Other than the chassis, specified accessories, and raw materials such as aluminum, wood, etc.; all shops and sub-shops shall be within the complex(s) that are directly owned and controlled by the primary manufacturer. Any assemblies including, but not limited to, upholstery, fiberglass, cabinetry, electrical, structural and paint application, that are performed or supplied outside of the primary manufacturer's location(s) must be noted. The name, address, and contact person supplying the primary manufacturer with the assemblies must be provided in writing to this agency. Non-disclosure will be sufficient grounds for rejection of bid or termination of contract. Ambulances or chassis' imported for consideration of this specification into the United States under the North America Free Trade Act must provide documentation of compliance with all United States laws applicable. Further, any import ambulance must be independently certified and tested within the United States to meet KKK - A1822 - F certification.

### 1.4.2 EXAMINATION OF SPECIFICATIONS

**It is incumbent on each manufacturer to be thoroughly familiar with the specification contained herein. The specification will require a "YES" or "NO" or when requested a definitive answer to each section or subsection. Sections or subsections not marked with a "YES" or "NO" or answered shall be deemed incomplete and considered non-responsive. A "YES" answer constitutes a complete compliance to the section or subsection as written. A "NO" shall indicate noncompliance and does not eliminate a manufacturer from competition. A manufacturer may object or counter to a specific section or subsection. A manufacturer must indicate in writing, as an attachment, the section or subsection in dispute. The manufacturer must include the verbiage as written, new verbiage presented, explanation of verbiage with consequences and supporting tests and documentation. Failure to comply will be deemed as non-responsive. Shelby County Purchasing reserves the right to determine compliance.**

1.4.3 DEFINITIONS: The following definitions shall apply with regards to these specifications.

1.4.4 PURCHASER: The end user of the equipment specified or the applicable purchasing agency acting on behalf of the end user.

1.4.5 CONTRACTOR: The individual, firm, partnership manufacturer, or corporation to whom the contract is awarded by the Purchaser and is subject to the terms thereof. For bidding purposes the contractor, vendor, bidder, manufacturer are synonymous.

1.4.6 EQUAL: This agency supports the design, engineering, quality and materials as specified in this document. This shall not prohibit the bidding of unlike product. However, any deviation from the specification must be marked and submitted per instruction. Failure to do so shall be deemed non-responsive.

1.4.7 MANUFACTURER: The manufacturer within this specification shall be considered the “primary manufacturer” of the ambulance conversion. The chassis requirement as set forth in this specification is the responsibility of the primary manufacturer to procure. This agency considers the chassis platform as a conveyance for the ambulance conversion. It is imperative that the primary manufacturers procure the **exact** chassis from the chassis manufacturer. After market modifications by the primary manufacturer to achieve chassis specification will not be tolerated. This agency will require documentation from the chassis manufacturer pertaining to the chassis requirements for this agency. Failure to provide documentation after award and prior to construction may result in the termination of the contract. Expenses to re-bid will be the responsibility of the manufacturer in default.

## 2.0 SPECIAL CONDITIONS

### 2.1 BIDDERS RESPONSIBILITY AND QUALIFICATION

It is not the intent of these specifications to call for an unusual or experimental vehicle(s). The primary manufacturer shall have a minimum of five (5) years of uninterrupted manufacturing of similar or identical vehicles to the specifications set forth in this bid.

#### 2.1.2

If requested by the purchaser, the primary manufacturer shall supply upon request a list of fifteen (15) agencies that have purchased similar or identical vehicles within the past year from date of bid. The list will have contact names and phone numbers.

#### 2.1.3

**For the purpose of this section, the bidder of record shall be required to submit financial, insurance, and/or licenser to conduct business within this jurisdiction. Failure to provide proper documentation with the bid response may result in any bid being deemed non-responsive.**

#### 2.1.4

The Ambulance Manufacturer shall be ISO 9001:2000 certified. **No Exceptions.**

#### 2.1.5

The primary manufacturer shall employ full time a Quality Control Manager whose primary function is to monitor quality. **No Exceptions.**

## 2.2 PAYMENT, DELIVERY AND ACCEPTANCE

The primary manufacturer will provide in writing to accompany this document a proposed delivery time. The delivery time proposal will include the transit time of the finished vehicle.

**\* All vehicles are to be delivered on December 15, 2016 or best firm delivery date.**

### 2.2.1

Unless otherwise requested, the primary manufacturer shall arrange over the road delivery of the completed vehicles to this agency’s designated local address under the vehicles own power.

That address shall be Shelby County Fire Department, 1075 Mullins Station Road, Memphis, TN 38133. The delivery point of contact is Deputy Chief Glen Kneeland or EMS Commander Donald Fletcher at (901)222-8010. Costs of transportation and preparation are to be included with the price as bid.

### 2.2.2

**Manufacturer shall provide to Agency, the option for payment in full upon delivery and inspection of all vehicles by agency's authorized representative(s) to confirm compliance with specifications and a minimum five year lease purchase option for all vehicles after acceptance with prepayment and financing terms and conditions provided. Any third party financing institution(s) must have a local office within Shelby County, Tennessee. A written copy of the proposed financing agreement must be provided. Also please include any rebate programs that Shelby County qualifies for pertaining to either the purchase or leasing of the Type III Ambulance with a Van Style Chassis with a 158" Wheelbase vehicles.**

### 2.2.3

All bid prices and conditions must be specified on the Bid Proposal Form.

### 2.2.4

**Bid prices shall be valid for one hundred Twenty (120) days. In the unforeseen circumstance that this agency requires the primary manufacturer to extend pricing requirement; then it will be at the discretion of this agency to request in writing from the primary manufacturer any deviation in prices quoted. The primary manufacturer may revise pricing and state in writing reasons for any change and certify the amended pricing for thirty (30) additional days.**

## 2.3 BID EVALUATION

Bids received shall be evaluated by the Purchaser. This evaluation will be based on the following:

- 1) Completeness of the proposal
- 2) Manufacturing and Delivery schedule
- 3) Primary manufacturer's demonstrated capabilities and qualifications
- 4) Primary manufacturer's past performance on similar Bid Proposals
- 5) Primary manufacturer's ability to meet the specifications
- 6) Cost to value determination (lowest/best)
- 7) Primary manufacturer's maintainability and recommendations. The ambulance manufacturer must be an established manufacturer with a certainty of being capable of furnishing parts, service and technical assistance indefinitely.
- 8) Primary manufacturer's logistical and service support. Warranty and repair work must be available within a twenty-five (25) mile radius of Shelby County, Tennessee.

### 2.3.1

Bid proposals taking total exception to these specifications will not be accepted.

### 2.3.2

Bid proposals that do not comply with the prescribed method to take exceptions will be rejected without further consideration.

### 2.3.3

This agency seeks the highest level of value for the cost. To assure this agency is receiving such value the primary manufacturer must submit evidence of compliance with KKK - A1822 - F testing parameters. The testing is to be performed by an independent testing facility and verified by person(s) with the standing of Professional Engineer. If further testing is required by any lawful agency of the Federal or State Government then it shall be incumbent upon the primary manufacture to provide this agency with certification required.

### 2.3.4

The primary manufacturer may submit certification of all “member in good standing” of any public or private association that may have bearing on this specification i.e. AMD, NTEA.

## 2.4 CONTRACT AWARD

The Purchaser reserves the right to increase the number of vehicles or equipment specified under this award. If awarded, the manufacturer agrees that additional agencies may purchase under the same terms and prices afforded by any contract arising from the bid award, unless prohibited by law.

### 2.4.1

The purchaser has the right to waive any informalities, irregularities, and technicalities in procedure.

## 2.5 WARRANTY

This agency is concerned with the ability of the Manufacturer to warrant the conversion after delivery. This agency expects a minimum of a fifteen (15) year modular construction warranty and twelve (12) months and twelve thousand (12,000) mile full warranty on the conversion, lifetime electrical warranty and lifetime cabinet warranty. In addition, each manufacturer must submit their various warranties and warranty options with the proposal for evaluation. Also, each primary manufacturer will supply the name and phone number of a contact person in the event this agency requires clarification of the submitted warranty documents.

### 2.5.1

**The Manufacturer will provide the location of the closest approved warranty center. Indicate to this agency, in writing, to be included with this proposal; the process to initiate and file a warranty claim.**

### 2.5.2

**Due to the high demands on a pre-hospital care vehicle, this agency demands the Manufacturer have available a twenty-four hour a day technical assist service. This 24/7 service must be staffed by the primary manufacturer's service personnel, include telephone number: \_\_\_\_\_.**

## 2.6 DELIVERY

The primary manufacturer will provide in writing to accompany this document a proposed delivery time. The delivery time proposal will include the transit time of the finished vehicle.

**\* All vehicles are RDD (Required delivery date): December 15, 2016 or best / firm delivery date.**

## 2.7 FAMILIARITY WITH LAWS

The Manufacturer will be familiar with all Federal, State and Local laws, ordinance, code rules and regulations that may in any way effect the work. Ignorance on the part of the Manufacturer is not acceptable.

## 2.8 PRE-CONSTRUCTION CONFERENCE

The successful primary manufacturer shall be required to hold a pre-construction conference with representatives of this agency to finalize construction details. In the event it is deemed necessary by both parties that the conference be held at a location other than at this agency, this agency will pay for applicable expenses for the Shelby County personnel.

### 2.8.1

The department will also require a final inspection of the ambulance upon completion. This final inspection shall take place at the primary manufacturing plant. This agency will pay for applicable expenses for Shelby County personnel.

## 2.9 DRAWINGS

The Manufacturer shall provide a set of drawings that accurately depict the vehicle as specified. The drawings will show all exterior and interior planes with dimensions. Failure to comply will be deemed non-responsive.

## 2.10 EMPLOYEE STATEMENT

It is mandated by the United States Government that all employees currently and to be employed during the duration of this contract are not discriminated against because of their race, creed, color, sex, nationality origin and disability. Further, this agency must be satisfied that the Manufacturer's labor pool is treated in a fair and equitable manner. Therefore, it will be the responsibility of the Manufacturer to include a human resource statement outlining employment status, working conditions, and benefits.

## 2.11 ANTI-COLLUSION STATEMENT

By signing this bid, the primary manufacturer agrees that this bid is made without any understanding, agreement or connection with any other person, firm or corporation making a bid for the same purpose and this bid is in all respects fair and without collusion or fraud.

## 3.0 TECHNICAL REQUIREMENTS CAB - CHASSIS

### 3.1 GENERAL VEHICULAR DESIGN, TYPES, AND FLOOR PLAN

The ambulance and the allied equipment furnished under this specification shall be the primary manufacturer's current commercial vehicle of the type and class specified. The ambulance shall be complete with the operating accessories as specified herein. It shall be furnished with such modifications and attachments as necessary and specified to enable the vehicle to function reliably and efficiently in sustained operation.

The design of the vehicle and the specified equipment shall permit accessibility for servicing, replacement and adjustment of component parts and accessories with minimum disturbance to other components and systems.

### 3.1.1

The ambulance shall be a Type III, Class I, and shall be a chassis furnished with a two (2) door conventional cutaway cab. The chassis shall be suitable for subsequent mounting of a modular (containerized), transferable equipped ambulance body conforming to the requirements herein.

### 3.1.2

The design of the vehicle shall utilize floor plan "A" loading arrangement of patients into the patient compartment. All litters shall be loaded into position with the heads of the patients forward in the vehicle.

## 3.2 VEHICLE COMPONENTS, EQUIPMENT, AND ACCESSORIES.

The emergency medical care vehicle, chassis ambulance body, equipment, devices medical accessories and electronic equipment to be delivered under this contract shall be standard commercial products, tested and certified, to meet this specification. The vehicle shall comply with all Federal Motor Vehicle Safety Standards (FMVSS) and United States regulations applicable or specified for the year of manufacture. The primary manufacturer shall procure the chassis, components, equipment and accessories as specified and be the current technical data and materials of all suppliers.

## 3.3 MATERIALS

Materials used in the construction shall be new and meet the quality conforming to this specification. Materials shall be free of defects.

## AMBULANCE SPECIFICATIONS

### 2016 (or latest model) Type III Ambulance with a Van Style Chassis with a 158" Wheelbase

- 4.0 VEHICLE OPERATION, PERFORMANCE, AND PHYSICAL CHARACTERISTICS
- 4.1 CHASSIS MANUFACTURER AND MODEL YEAR
- 4.2 MODEL PHYSICAL CHARACTERISTICS
- 4.3 ELECTRICAL GENERATING SYSTEM
- 4.4 ENGINE AUTOMATIC HIGH IDLE SPEED CONTROL
- 4.5 DRIVERS COMPARTMENT
- 4.6 OUTSIDE REAR VIEW MIRRORS
- 4.7 LETTERING
- 4.8 RADIO INSTALLATION
- 4.9 HEATER HOSES
- 4.10 ENVIRONMENTAL SYSTEMS
- 4.11 WHEEL COVERS
- 5.0 VEHICLE BODY AND PATIENT AREA
- 5.1 BODY ACCOMMODATIONS
- 5.2 PATIENT COMPARTMENT INTERIOR DIMENSIONS
- 5.3 GENERAL BODY CONSTRUCTION
- 5.4 INTEGRITY AND QUALITY
- 5.5 QUALITY AND SAFETY DOCUMENTATION
- 5.6 VEHICLE BODY STRUCTURE
- 5.7 BODY MOUNTING
- 5.8 FLOOR
- 5.9 EXTERIOR STORAGE ACCOMMODATIONS
- 5.10 PATIENT COMPARTMENT SOUND LEVEL
- 5.11 INTERIOR SURFACES
- 5.12 CABINET CONSTRUCTION
- 5.13 INTERIOR STOWAGE ACCOMMODATIONS
- 5.14 CAB EXTENSION
- 5.15 INTERIOR HEADROOM
- 5.16 RUBBER COATING
- 5.17 BATTERY COMPARTMENT FINISH
- 5.18 EXTERIOR COMPARTMENTS
- 5.19 COMPARTMENT AND ENTRY DOOR CONSTRUCTION
- 5.20 COMPARTMENT A
- 5.21 COMPARTMENT B1
- 5.22 COMPARTMENT B2
- 5.23 COMPARTMENT D
- 5.24 COMPARTMENT E
- 5.25 COMPARTMENT F
- 5.26 FUEL FILL HOUSING
- 5.27 EXTERIOR VERTICAL DIVIDERS
- 5.28 EXTERIOR COMPARTMENT SHELF
- 5.29 EXTERIOR ELECTRICAL SHELF
- 5.30 STEP WELL AND WINDOWS
- 5.31 PATIENT ENTRY DOOR LATCHES, HINGES AND HARDWARE

- 5.32 COMPARTMENT DOOR LATCHES, HINGES AND HARDWARE
- 5.33 REAR DOOR HOLD OPENS
- 5.34 COMPARTMENT DOOR HOLD OPEN
- 5.35 COMPARTMENT DOOR HOLD OPEN
- 5.36 CURBSIDE ACCESS DOOR HOLD OPEN
- 5.37 DOOR PANELS
- 5.38 REAR FENDERS
- 5.39 BUMPERS AND STEP
- 5.40 RUNNING BOARDS
- 5.41 SKIRT RAILS
- 5.42 SKIRT RAIL REFLECTIVE TAPE
- 5.43 FRONT STONE GUARDS
- 5.44 REAR KICK PLATE
- 5.45 LICENSE PLATE HOLDER
- 5.46 COMPARTMENT SILL PROTECTORS
- 5.47 REAR MUD FLAPS
- 6.0 ELECTRICAL SYSTEMS AND COMPONENTS
- 6.1 WARNING INDICATORS
- 6.2 WIRING INSTALLATION
- 6.3 WIRING CRITERIA AND CIRCUIT BOARD
- 6.4 CIRCUIT BOARD CERTIFICATION
- 6.5 MASTER MODULE DISCONNECT SWITCH OR DEVICE
- 6.6 PATIENT COMPARTMENT CONTROLS
- 6.7 ELECTROMAGNETIC RADIATION AND SUPPRESSION
- 6.8 BATTERY SYSTEM
- 6.9 ANTENNA CABLE INSTALLATION
- 6.10 INTERNAL 12 VOLT DC POWER
- 6.11 PORT 5 VOLT DC POWER USB STYLE
- 6.12 POWER SOURCE
- 6.13 POWER SOURCE
- 6.14 POWER SOURCE
- 6.15 SHORELINE INLET
- 6.16 115 VOLT AC UTILITY POWER
- 6.17 110 VAC OUTLETS
- 6.18 BATTERY CHARGER
- 6.19 INVERTER
- 6.20 ACTION AREA CONSOLE
- 6.21 INSTRUMENT CONSOLE
- 6.22 LOW VOLTAGE ALARM
- 6.23 AUDIO WARNING SYSTEM
- 6.24 SIREN, PUBLIC ADDRESS SYSTEM
- 6.25 SIREN/HORN SWITCHING
- 6.26 BACKUP ALARM
- 6.27 VEHICLE EXTERIOR LIGHTING REQUIREMENTS
- 6.28 EMERGENCY LIGHTING SYSTEM
- 6.29 PHOTO METRIC AND PHYSICAL REQUIREMENTS
- 6.30 CLEARANCE LIGHTS
- 6.31 MARKER LIGHTS

- 6.32 MARKER LIGHTS
- 6.33 EXTERIOR FLOOD LIGHTS
- 6.34 EXTERIOR LOADING LIGHTS
- 6.35 FLASHER
- 6.36 LICENSE TAG LIGHT
- 6.37 TAIL LIGHT PACKAGE
- 6.38 MODULE HEADLINER
- 6.39 VEHICLE INTERIOR LIGHTING
- 6.40 STEP WELL LIGHT
- 6.41 ACTION AREA LIGHT
- 6.42 12VDC INTERIOR LIGHTING
- 6.43 HANDHELD SPOTLIGHT
- 6.44 ADDITIONAL COMPARTMENT LIGHTS
- 6.45 TIMER
- 6.46 ELECTRICAL TROUBLESHOOTING LIGHT
- 7.0 SUCTION PUMP
- 7.1 SUCTION ASPIRATOR
- 8.0 ACOUSTIC AND CLIMATE INSULATION
- 9.0 OVERHEAD GRABRAIL
- 9.1 ENTRY DOOR GRAB HANDLES
- 10.0 OXYGEN CYLINDER RACK
- 10.1 OXYGEN, MAIN SUPPLY AND INSTALLATION
- 11.0 COT MOUNT
- 11.1 STRETCHER
- 12.0 IV HOLDERS FOR INTRAVENOUS FLUID CONTAINERS
- 13.0 INTERIOR SURFACES
- 13.1 CABINET CONSTRUCTION
- 14.0 INTERIOR STOWAGE ACCOMMODATIONS
- 15.0 INTERIOR SURFACES
- 16.0 FLOOR
- 16.1 FLOOR COVERINGS
- 17.0 ATTENDANT SEATING
- 18.0 UPHOLSTERY
- 19.0 BULKHEAD CABINET
- 20.0 INTERIOR OXYGEN VIEWING DOOR
- 21.0 BULKHEAD SLIDING DOOR
- 22.0 RIGHT FRONT CABINET
- 22.1 RIGHT FRONT CABINET DOORS
- 22.1.1 CABINET HANDLE
- 22.1.2 CABINET LATCH
- 22.1.3 CABINET LATCH
- 22.1.4 CABINET LATCH
- 23.0 SQUAD BENCH CABINET
- 23.1 SQUAD BENCH LID
- 23.1.1 SQUAD BENCH LATCH
- 23.1.2 SQUAD BENCH HOLD OPEN
- 23.2 CURBSIDE SPLINT CABINET (NONE)
- 23.3 STREETSIDE REAR MIDDLE CABINET

- 23.4 STREETSIDE MIDDLE LOWER CABINET
- 24.0 CPR SIDE SEAT
  - 24.1 CPR SEAT STORAGE
  - 24.2 STREETSIDE REAR UPPER CABINET
  - 24.3 STREETSIDE REAR UPPER CABINET
  - 24.4 STREETSIDE FORWARD UPPER CABINET
  - 24.5 STORAGE COMPARTMENTS AND CABINET DESIGN
  - 24.6 CABINET "H" DOOR
    - 24.6.1 CABINET "O" DOOR
  - 24.7 TELEMETRY TRAY
  - 24.8 ACTION AREA TRAY
  - 24.9 ACTION AREA CABINET
  - 24.10 CABINET "J" DOOR
  - 24.11 CABINET "K" DOOR
  - 24.12 CABINET "L1" DOOR
  - 24.13 CABINET "L2" DOOR
- 25.0 STANDARD MANDATORY MISCELLANEOUS EQUIPMENT
  - 25.1 SPARE TIRE MOUNTING
  - 25.2 SPARE TIRE
- 26.0 TESTS
- 27.0 EXCEPTIONS

## AMBULANCE SPECIFICATIONS

### 2016 (or latest model) Type III Ambulance with a Van Style Chassis with a 158" Wheelbase

#### 4.0 VEHICLE OPERATION, PERFORMANCE, AND PHYSICAL CHARACTERISTICS

The following is a description of the cab and chassis that will meet the requirements of this specification. In addition, the chassis will comply with paragraphs 3.4.1 through 3.6.14 of Federal Specification KKK - A1822 - F.

#### 4.1 CHASSIS MANUFACTURER AND MODEL YEAR

#### 4.2 MODEL PHYSICAL CHARACTERISTICS

<b>Vehicle:</b>	Type III Ambulance with a Van Style Chassis with a 158" Wheelbase	
Body Style:	Cutaway Dual Rear Wheel	
Drive Train:	Rear Wheel Drive	
Model Number body code:	E450/158" wheel base	
Gross Axle Weight:	Front	Rear
	5,000lb.	9,500 lb.
Gross Vehicle Weight	Rating	
	14,500 lb.	
Engine Type:	99S EFI V10 Gasoline	
Displacement	6.8L	
Fuel System	Electronic Fuel Injected	
SAE net HP	305 @ 4250 RPM	
SAE net Torque	420 foot pounds @ 3250 RPM	
Wheelbase:	158 inches	
Transmission:	5 - speed Automatic, Electronic	
Rear Axle Ratio:	4:56	
Tire Size:	LT225/7516E, 2 front, 4 rear	
Spare Tire Size:	LT225/7516E	
Wheels	All including spare, steel 16.0 x 6.0	
Brakes:	ABS System, Power Disc Brakes front and rear.	
Engine Block Heater:	Code 41H	
Alternators:	Dual 130 Alternators	
Batteries:	Dual, 72-AH, 650 CCA	
Fuel Tank:	Single 55 Gallon, aft of rear axle	
Exterior Upgrade Package:	Code 18A	
Interior Upgrade Package:	Code 18C	
Dual Captain's Chairs:	Code M	
Speed Control:	Code 525	
Ambulance Prep. Package:	Code 47A	
Steering:	Power	
Radio:	Electric AM/FM/CD Radio w/4 speakers	
Locks:	Code 948 Keyless Alarm	

#### 4.3 ELECTRICAL GENERATING SYSTEM

The vehicle shall be equipped with the OEM supplied 225 ampere alternator. The primary manufacturer shall install a second 105 ampere alternator to supplement the OEM.

#### 4.4 ENGINE AUTOMATIC HIGH IDLE SPEED CONTROL

The engine high idle shall be regulated by the OEM supplied high idle speed control. The control shall be mounted in the cab console.

#### 4.5 DRIVERS COMPARTMENT

The driver's compartment shall be as required by paragraphs 3.9.1, 3.9.2, and 3.9.4 of Federal specification KKK-A1822-FKKK - A1822 - F as well as section 3.0 of this document. The cab shall be equipped with the chassis manufacturer's high back "captain's chair" with arm rests. The safety restraint system for the driver and passenger shall be installed by the chassis manufacturer. Modifications or substitutions of the chassis manufacturers cab seats or restraint system will not be acceptable.

#### 4.6 OUTSIDE REAR VIEW MIRRORS

The vehicle mirrors should be firmly secured, vibration less rear view mirrors totaling at least one hundred and twenty five square inches. The mirror shall be OEM with the following description: Telescopic Trailer Tow with LH/RH Power Adjust Flat Glass & Manual Adjust Convex.

#### 4.7 LETTERING

Lettering shall be installed.

#### 4.8 RADIO INSTALLATION

Radio wiring (and radio if provided) shall be installed.

#### 4.9 HEATER HOSES

Nomex heater hoses shall be installed.

#### 4.10 ENVIRONMENTAL SYSTEMS

The driver's compartment shall be furnished with the environmental package as set forth in section 3.6. This agency is committed to keep safe our staff and patients by technology available in today's market place. Therefore, it shall be incumbent for all primary manufacturers to provide the maximum protection from airborne pathogens and eliminate obnoxious odors that can create discomfort for staff and patients. The patient compartment shall be heated and air conditioned by the following method:

##### 4.10.1

The conditioned air shall pass through a multi-directional vent capable of dispersing high volumes of conditioned air at low velocity. This system must meet KKK - A1822 - F performance parameters 3.13.4 and 3.13.5. Testing must be certified with filters in place. Primary manufacturers shall submit drawings and testing documentation from an independent laboratory with this proposal.

#### 4.11 WHEEL COVERS

There shall be Phoenix Wheel Covers installed prior to delivery. They shall be model #NF9 and shall include the extender kit for the rear wheels, model #AP5

## 5.0 VEHICLE BODY AND PATIENT AREA

### 5.1 BODY ACCOMMODATIONS

The ambulance body and patient compartment shall be sufficient in size to meet the requirements of paragraph 3.10.1 of Federal Specification KKK - A1822 - F. The interior layout shall be such that a technician can administer life support treatments to at least one person during transport. The modular body shall be 170 inches in length and 95 inches in width.

### 5.2 PATIENT COMPARTMENT INTERIOR DIMENSIONS

Length: As measured from the bulkhead to the inside edge of the rear doors at the floor shall be at least one hundred and forty three (143) inches. There shall be at least twenty five (25) inches but not more than thirty (30) inches of clear space at the head of the primary patient, measured from the face of the backrest of the attendant's to the forward edge of the style one cot.

Width: Shall be measured after the installation of the street side cabinets will be forty four and three quarter (44 <sup>3</sup>/<sub>4</sub>) inches between the cabinet wall and the face of the squad bench.

Height: The patient compartment shall provide at least sixty six (66) inches of height over the primary patient area from the floor to the ceiling.

### 5.3 GENERAL BODY CONSTRUCTION

It is the intention of this agency to specify a modular body that is constructed solely of aluminum including side skins, roof skin, all structural box tubing, corner and roof extrusions, tapping plates, gusset plates, retention plates, doors, door extrusions, sub structure moisture barrier and drip rails. The modular shall be engineered, built and warranted by the primary manufacturer. This agency will not accept a proposal from a primary manufacturer, as defined within this document, that supplies a modular from an agency, builder, supplier, other than the primary manufacturer. This section shall be the construction parameters this agency has deemed as fair value. Primary manufacturers that deviate from these specifications may take exception as set forth in this proposal.

#### 5.3.1

The exterior of the body shall be constructed utilizing a full six sided box framework with a combination of high strength 6061-T1 and 6063-T6 alloy aluminum and having an outer surface of aluminum sheet with a temper and alloy of 5052-H32 for strength, weld integrity and corrosion resistance. The front, sides, and rear of the modular shall be configured from a single sheet of 0.090 aluminum. The one piece sheets shall be used to maximize integrity against dust, toxic fumes, cracking, and moisture penetration. The openings for doors, warning lights and exterior compartments shall be cut on the horizontal plane with a computer controlled plasma cutter for accuracy and integrity of temper. The roof and side skins shall be installed utilizing a very high bond adhesive to allow absorption of vibration and to eliminate "panning".

The skins shall be welded to the interlocking extrusion framework at the outer perimeter of the sheets by a programmable robotic welder using a MIG welding tip and Argon gas.

### 5.3.2

The roof shall be a single .090 sheet of 5052-H32 alloy aluminum. The roof sheet shall be completely welded to the extruded roof assembly. The use of multi-section roofs shall not be acceptable due to the possibility of cracks causing environmental intrusion.

### 5.3.3

The roof substructure assembly shall consist of four perimeter roof rail extrusions, lateral roof bows and interconnecting corner caps. The roof rail extrusions shall be engineered and designed by the primary manufacturer and shall be double hollow of 6063-T6 .125 aluminum. An integrated roof recess shall be incorporated to create a smooth transition from the one piece roof sheet to the perimeter drip rail. The perimeter drip rail shall be extruded as a design feature of the roof rail extrusion. The roof rail extrusion shall overlay the side skin by one half inch. The roof sheet shall be seam welded to the perimeter roof extrusion. The lateral roof bows shall be two inch by two inch by .125 square extrusions of 6061-T6 alloy aluminum. The structural members shall be located to support the roof skin on fourteen inches between roof bows. The roof bows shall interconnect with the roof rails and be continuously welded at all contact points. The finished roof shall incorporate a machine rolled crown of not less than one and half inches in height to provide additional strength and allow water run-off. A one inch by two inch by .125 6063-T6 extrusion shall be secured to the top of the vertical extrusions. The perimeter extrusion shall be welded to the vertical structures with a minimum of six inches of weld. An industrial adhesive shall be applied around the perimeter before the roof assembly is mated to the sill. The roof structure shall be attached to the sill and welded. To insure a complete contact with the industrial adhesive mechanical fasteners shall be employed to cinch the roof structure to the sill.

### 5.3.4

The corner caps shall be designed to interlock with the roof perimeter, vertical corner extrusions and roof sheet. The corner caps shall be cast aluminum made from matched metal dies to insure a smooth and pleasing appearance. The caps shall act as a stress relief device to absorb energy and disperse the force along the roof extrusions in the event of a collision. The outer edge DOT lights shall be installed as described in section 5.1.

### 5.3.5

The corners of the modular body shall be designed and engineered by the primary manufacturer and constructed of 6063-T6 alloy aluminum. The corner extrusion shall be double hollow with a minimum thickness of .125 and .250 at the outer corner. The extrusion is designed with a unique forty five (45) degree angled appearance while maintaining very high strength and impact energy absorption. A polyurethane sealer shall be applied to seal the crevice between the corner extrusions and the side assemblies.

### 5.3.6

The side assemblies shall be reinforced utilizing 6061-T6 alloy aluminum two by two box tubing. The side structures shall frame a perimeter around all door openings and shall be a minimum or .125 in thickness.

Intermediate skin stiffeners shall be located to preclude skin deformation. Additional gusset plates shall be .250 inch aluminum and shall be welded at all contact points between the corner assembly and the roof perimeter.

### 5.3.7

This agency is extremely concerned with purchasing a vehicle from a primary manufacturer who can provide the necessary service after sale. Therefore, as previously stated the modular shall have a fifteen year warranty and be engineered, designed and built by the primary manufacturer.

## 5.4 INTEGRITY AND QUALITY

This agency is extremely concerned that the modular body be designed and built with the highest level of integrity and quality. Documentation and certification that the modular body being proposed meets Static Load Test Code for Ambulance Body Structure AMD Standard 001 must be included with this proposal.

## 5.5 QUALITY AND SAFETY DOCUMENTION

The ambulance manufacturer responding to this vehicle specification shall demonstrate to this agency that the ambulance being proposed offers the highest possible quality and safety standards.

### 5.5.1

To meet this agency's requirements for quality the Bidder shall provide documentation that the ambulance manufacturer has in place a quality management system that meets the requirements of the International Organization for Standardization (ISO). A copy of the ISO registration certificate shall be included in the bid response.

### 5.5.2

To meet this agency's requirements for safety standards, the Bidder shall provide documentation that the ambulance manufacturer has conducted "dynamic" testing to validate the design manufacturing processes, materials and workmanship used in the production of the ambulance proposed in response to this specification.

### 5.5.3

To validate the materials, manufacturing processes, quality management system and workmanship utilized in the installation of seats, seat belts, secondary restraining devices, cabinet construction, oxygen cylinder retention and module to chassis attachment, a HYGE sled test shall be performed. This test shall simulate a frontal impact to the ambulance module at a minimal impact force of 20g. A test report from a third party testing agency independent of the ambulance manufacturer shall be submitted with the bid response proving compliance with this requirement.

### 5.5.4

To validate the materials, manufacturing processes, quality management system and workmanship utilized in the construction of the modular body the Bidder shall provide documentation that the ambulance manufacturer has conducted a side impact crash test. The Institute for Highway Safety (IIHS) Crash Test Protocol Version 5 shall be used as a guideline for this testing requirement.

### 5.5.5

The "target" vehicle (Ambulance) shall be struck by the "bullet" (SUV / Pickup Truck) vehicle at the fore and aft center of gravity of the target vehicle. To comply with the requirements of this specification the bullet vehicle shall be a SUV or pickup truck with a minimum gross vehicle weight (GVW) of at least 4,000 lbs.

To provide this Agency accurate data in a “real world” environment the use of a Moving Deformable Barrier (MDB) and cart as the “bullet” vehicle is not permissible.

#### 5.5.6

The “target” vehicle (Ambulance) shall contain instrumented Anthropomorphic Test Devices (crash test dummy) meeting the following requirements and seating locations.

1. Squad Bench - Hybrid 3 ATD instrumented with head, chest, and pelvic accelerometers, upper neck load cell, chest potentiometer, and femur load cells.
2. Ambulance Cot - Hybrid 3 ATD instrumented with head, chest, and pelvic accelerometers, upper neck load cell, chest potentiometer, and femur load cells.
3. Street Side CPR Seat - Hybrid 3 ATD instrumented with head, chest, and pelvic accelerometers, upper neck load cell, chest potentiometer, lumbar load cell, and femur load cells.
4. Attendant Seat - Euro SID 2 ATD instrumented with head accelerometers, upper neck, abdomen, and pubic load cells, and rib potentiometers.

#### 5.5.7

For the purpose of determining **PASS/FAIL** results the Injury Assessment Reference Values (IARVs) from FMVSS 208, FMVSS 214 and the Insurance Institute for Highway Safety (IIHS) shall be used. A test report from a third party testing agency independent of the ambulance manufacturer shall be submitted with the bid response proving compliance to this requirement.

#### 5.5.8

The above requirements are in addition to the current minimum requirements for testing as outlined in KKK-A-1822.

#### 5.5.9

All welders employed by the primary manufacturer shall be certified to the American Welding Society Standard AWS D12, and certification documents must be provided if requested.

### 5.6 VEHICLE BODY STRUCTURE

All parts of the ambulance body, as specified in paragraph 3.10.6 of Federal Specification KKK-A1822-F, shall, where applicable, be of welded construction.

Where fasteners are used in such areas as hinge attachment, hardware attachment, etc., the fasteners shall be ceramic coated aluminum and stainless steel. Any hole drilled into the modular body painted surface shall be coated with an ECK corrosion inhibitor prior to installation of the part. **NO EXCEPTION.**

#### 5.6.1

Tapping plates of 6061-T6 alloy aluminum varying in widths of one quarter to one half inch shall be welded to the framing to secure the installation of equipment such as; cabinets, benches, partitions, cylinders, cot fasteners, etc. The body and panel joints shall be watertight and all openings between the chassis and modular shall be sealed.

In addition a drip rail shall be supplied over each exterior compartment. The drip rail shall be attached in such a manner as to provide for quick and easy replacement. Drips rails attached by mechanical fasteners shall not be used.

#### 5.7 BODY MOUNTING

The mounting system shall not cause any chassis frame deformation. There shall be ten mounting points, five on each frame rail. The modular body shall have full perimeter welded sill rails of one inch by two inch of 6061-T6 alloy aluminum and be attached to the vehicle utilizing one inch by three inch sill plates of 6061-T6 alloy aluminum. The modular body shall be welded to the sill plates at every exposed seam. At all outrigger mounting locations, a double compression, neoprene rubber isolator mounts shall be used to minimize chassis vibration transfer to the modular body. The modular body and sill plates shall be attached to the frame rails using three quarter inch grade eight bolts. Any method contrary to QVM which may void the chassis warranty shall not be accepted.

#### 5.8 FLOOR

The floor shall be at lowest level permitted by clearances, but not more than thirty three inches from the ground. The floor structure shall consist of two by two by .125 structural box section with 6061-T6 alloy aluminum. The floor structure shall be welded with eight inches of weld at every joint. The openings created for the placement of exterior compartments shall have six inches of weld to insure a smooth surface to fit the compartment in the structure. Tapping plates of one quarter inch and one half inch of 6061-T6 aluminum shall be completely welded both sides to the floor assembly. The finished floor assembly shall be securely welded to the wall structures with eight inches of weld and skipped welded every four inches to the exterior compartments. All critical load points shall be reinforced with one quarter inch by three inch by four inch gusset plates. Above the floor channels there shall be an aluminum moisture shield .050 inches thick. The entire underside of the modular shall be sealed with a waterproof sealant. All hollow structural shapes or cavities shall be sealed utilizing an approved expandable foam.

##### 5.8.1

The rear patient access shall be equipped with an exterior aluminum threshold mount to the lower door jamb. This threshold will protect the bottom door jamb; in addition, the rear patient floor shall have a fourteen gauge stainless steel cot protector.

#### 5.9 EXTERIOR STORAGE ACCOMMODATIONS

The exterior compartments shall be constructed of .090 aluminum and shall be formed by a computer controlled brake and shear to decrease the amount of welding to fully enclose the compartment. The compartment therefore, shall be water tight. The compartment shall be welded in place to the side and floor structure with an additional bracket welded to a bracket connecting the exterior wall two with the floor structure. The floor of the exterior compartments shall be at least two inches below the lower door frame lip to help prevent equipment from falling out should a door not be closed. The compartment floor shall be supported from beneath with one by two by .125 6061 T-6 rectangular tubing welded to the underside and the floor structure. All exterior compartments shall be vented above the floor line with machine stamp louvers. The exterior compartment shall be lockable with one key fitting all doors. The compartments shall be equipped with handle and door locks. Each exterior compartment shall be provided with a sealed light to be illuminated upon the door opening. The light shall be activated by a magnetic switch. A door open indicator light shall be visible on the driver's console. The compartment configuration shall be as described.

## 5.10 PATIENT COMPARTMENT SOUND LEVEL

Shall meet the requirements of paragraph 3.13.8 of Federal Specification KKK-A1822-F.

## 5.11 INTERIOR SURFACES

All vertical edges of cabinets shall be of an aluminum extrusion with a 3/4 inch radius designed to free the interior of the patient's compartment of all sharp edges or projections. The face and inside of the cabinets shall be covered by a commercial grade laminate and adhered to the cabinet face by a high quality poly vinyl adhesive using a thermal press application. The wood, adhesive and laminate shall be pressed together at 200 degrees for four minutes in a thermal platen press. There shall be no voids of the adhesive between the laminate and the cabinet surfaces.

## 5.12 CABINET CONSTRUCTION

The interior cabinets, squad bench assembly, shelves and doors shall be constructed of Marine Grade Featherply plywood; due to the product's ability to be customized to fulfill the needs of this agency, the additional acoustical and thermal insulation properties, repair ability, and the safety factor of not producing sharp fragments or shards in the event of a serious collision. The thickness of the finished panels used to construct the cabinets, shelves and doors shall be 3/4 inches including mica and adhesive. Any construction materials that provide anything less than 3/4 inch panels in cabinet construction are not acceptable to this agency.

### 5.12.1

The squad bench lid shall be attached to the squad bench assembly via a stainless steel piano hinge the entire length of the bench. The squad bench shall be equipped with a locking device to automatically secure the lid upon closing. The patient compartment wall panel (behind the squad bench) and the cab compartment wall panel shall be constructed of 1/4 inch plywood and covered with color coordinating high pressure laminate.

### 5.12.2

The cabinets shall be constructed using 8 mm dowels placed no farther than 32 mm apart. The dowels shall be a hardwood and pre-glued.

### 5.12.3

The doors on the upper cabinets shall be surface mounted with European hinges and 3mm edge banding. The doors on the center and lower cabinets shall be flush mounted using continuous stainless steel piano hinge and a 3 mm edge banding. All doors and cabinet openings shall be covered with a 3 mm edge banding with radius edges.

## 5.13 INTERIOR STOWAGE ACCOMMODATIONS

The interior of the patient compartment shall provide but not be limited to a minimum volume of thirty cubic feet of enclosed cabinets. Interior cabinet, shelf and compartment space shall be conveniently located for medical supplies, devices or other equipment. All interior cabinets shall be fully lined inside with high-pressure plastic laminate. The equipment and supplies necessary for airway management shall be within easy reach of the medic at the head of the stretcher. Interior cabinet dimensions are as described.

## 5.14 CAB EXTENSION

The bulkhead cabinet shall be moved to the rear of the patient compartment to allow for 13 inches of cab seat travel.

#### 5.15 INTERIOR HEADROOM

The interior headroom shall be a minimum of 72 inches.

#### 5.16 RUBBER COATING

The interior of the compartments shall be sprayed with Scorpion X02 rubber coating in a gray color. Scorpion X02 is a three component acrylic-reinforced aliphatic, aromatic polyurethane protective coating system. The product has high tensile strength, excellent abrasion resistance, superior elongation, high non-skid rating, and excellent UV stability and weathering characteristics.

##### 5.16.1

The rear bumper supports shall be sprayed with Scorpion X02 rubber coating in a black color. Scorpion X02 is a three component acrylic-reinforced aliphatic, aromatic polyurethane protective coating system. The product has high tensile strength, excellent abrasion resistance, superior elongation, high non-skid rating, and excellent UV stability and weathering characteristics.

#### 5.17 BATTERY COMPARTMENT FINISH

The exterior battery compartment shall be manufactured using aluminum diamond plate. The diamond plate shall be 0.100 inches thick.

#### 5.18 EXTERIOR COMPARTMENTS

The bottom of compartments B1, B2, D and E shall drop down 3 inches from the door opening for maximum storage space in the compartment. This will also help prevent items stored in the compartment from falling out if on uneven surface.

##### 5.18.1

The bottom of compartment A and F shall be flush with the door opening to provide for a sweep out design. Sweep out on compartment F shall allow for ease of loading the oxygen bottle.

#### 5.19 COMPARTMENT AND ENTRY DOOR CONSTRUCTION

All door frames to be cut to size using a programmable double miter saw to ashore accuracy and repeatability of components. All latch, door pins, switch and tapped hinge holes are to be added to door frame and jamb by means of a programmable milling operation to maintain consistency of all hardware cutout positions.

##### 5.19.1

The outer face of door shall be formed from one sheet of 5052-H32 aluminum. The door shall be flush with the body side. The outer skin shall be bonded to the door frame with structural adhesive that meets ASTM D 412 tensile strength, elongation, and elastic modulus. Adhesive to utilizes micro spheres to maintain a constant bond thickness around the inside skin edge to seal entire skin to frame. The door frame shall meet exterior skin with a smooth seamless transition. There shall be no seams or crevices on the door or door frame which allows the possibility of corrosion.

##### 5.19.2

Both patient compartment and exterior compartment doors shall be provided with extruded rubber seal system consisting of a hollow cell bulb gasket. The gasket shall insert into an appropriately designed groove in the inner door extrusion. This will provide the best seal possible. Glued on seals or seals that are mounted to the compartment openings are unacceptable as they will easily be torn by loading of equipment stored in the compartments.

### 5.19.3

All doors shall be attached using minimum ¼-20 stainless steel hex bolts with stainless steel piano hinge with a pin size of at least 0.250 inch in diameter. The hinge must be punched with 0.265 diameter holes for exact fit of door to jamb with ¼- 20 hex bolts. Maintaining the close tolerances allows a replacement door to be fabricated that will match the old door bolt pattern that can be mounted in exactly the same place with the close tolerances.

### 5.19.4

All compartment doors shall be constructed the same as the entry doors to ensure continued door alignment and matched latching capabilities. All access doors must be encased by a door jamb that is separate from the body skin and bonded in place with the same structural adhesive as described in paragraph two on page one. After jamb is bonded to skin both skin and jamb are to be routed with the same radii as the door skin. After bonding to skin, the jamb is also welded to the 2" X 2" tubular body frame members. The door jamb shall be a 0.125"/0.380 thick 6063-T6 aluminum extrusion

### 5.19.5

The interior surface of the patient compartment doors (rear and curb side) shall be finished in a safe and attractive manner that harmonizes with the interior finish. The door panels shall be designed to allow removal without disturbing the door latching hardware. The door panels shall be attached using automotive speed clips in conjunction with foam pads to enhance sound deadening. Door panels must be flush fitting not overlay. Doors using pliable materials such as upholstery are prohibited due to greater risk of contamination by blood borne pathogens through stitching or when cut or torn.

### 5.19.6

The three (3) patient compartment doors shall be fitted with stainless steel, flush fit, "paddle latch" hardware on the interior and an "automotive style" handles on the exterior. The patient compartment doors shall be provided with a keyed lock and the rear doors and side door shall be lockable from the inside without a key per FVMSS. All patient compartment doors shall have emergency release handles to activate rotary latches in the event of door component failure. All entry and compartment doors shall be insulated with 2-1/2" thick closed cell block foam insulation.

### 5.19.7

When the doors are opened, the hinges, latches and door checks shall not protrude into the access area. All patient compartment doors shall employ the same type locking hardware. All door latches shall comply with requirements of FVMSS 206

### 5.19.8

The locking devices shall be two-stage rotary latches and shall be FMVSS 206 certified .Where applicable there shall be two door latches, one at the top and one at the bottom, controlled by a single locking handle. The Latches shall into an adjustable "Nader "type pin located in the door frame. The Nader pin will utilize a captive nut to provide adjustment and replacement without loss of nut plate. The locking system shall be activated from the locking handle by metal push rods.

#### 5.19.9

The outside door handles shall be a rugged “automotive style” that are near flush with door skin. These handles shall provide adequate clearance for the use of gloves. The hand/ glove clearance area of the handle shall be a minimum of .812” deep and 4.125 long. On the curb side and rear doors, the inside handle shall be a “paddle style” type constructed from stainless steel and shall be equipped with an inside door lock. All exterior storage compartments and module entry doors shall be lockable with the same key.

#### 5.19.10

The compartment and entry doors shall be painted separately from the body. The doors shall then be installed on the painted module jamb. A Corrosion inhibitor shall be applied to both the door frame and jamb side of the hinge leafs. Additional corrosion inhibitor to be applied in all screw holes in both door frame and jamb.

#### 5.20 COMPARTMENT A

Compartment A is the passenger side forward compartment. The door opening dimensions shall be a minimum of 47 inches high and 16.75 inches wide. This door shall access the right front cabinet.

#### 5.20.1

The lower A is the battery compartment. The door opening dimensions shall be a minimum of 12.75 inches high and 16.75 inches wide.

#### 5.21 COMPARTMENT B1

Compartment B1 is on the passenger side just behind the rear wheel. The door opening dimensions shall be a minimum of 19.25 inches high and 15 inches wide. The interior dimensions shall be approximately 22.5 inches high and 16.5 inches wide and 18.75 inches deep.

#### 5.22 COMPARTMENT B2

Compartment B2 is the passenger side rear compartment. The door opening dimensions shall be a minimum of 81.75 inches high and 22 inches wide. The interior dimensions shall be approximately 85.0 inches high and 24.75 inches wide and 18.5 inches deep.

#### 5.23 COMPARTMENT D

Compartment D is the driver’s side rear compartment. The door opening dimensions shall be a minimum of 58.5 inches high and 32.25 inches wide. The interior dimensions shall be approximately 62 inches high and 36.5 inches wide and 18.5 inches deep.

#### 5.24 COMPARTMENT E

Compartment E is on the driver’s side just forward of the rear wheel. The door opening dimensions shall be a minimum of 36 inches high and 39 inches wide. The interior dimensions shall be approximately 38.75 inches high and 40.5 inches wide and 18.5 inches deep. The compartment shall have double doors.

#### 5.25 COMPARTMENT F

Compartment F is the driver’s side forward compartment. The door opening dimensions shall be a minimum of 80.5 inches high and 18.25 inches wide. The interior dimensions shall be approximately 81.5 inches high and 18.5 inches wide and 18.5 inches deep.

#### 5.26 FUEL FILL HOUSING

A cast aluminum fuel fill housing shall be installed according to the chassis manufacturer's instructions.

#### 5.27 EXTERIOR VERTICAL DIVIDERS

One (1) vertical divider(s) shall be located in compartment B2. They shall be manufactured of 3/16 inch thick aluminum and be painted with scratch resistant gray rubber coating. The divider shall be approximately 11 inches wide and extend from the top of the compartment to the bottom.

#### 5.28 EXTERIOR COMPARTMENT SHELF

The exterior compartment shelves shall be manufactured from 0.125 inch aluminum. Each shelf shall have a 0.125 inch thick ribbed rubber mat. The shelf track shall be heavy duty extruded aluminum. There shall be a shelf in the RF Compartment/Cabinet.

#### 5.29 EXTERIOR ELECTRICAL SHELF

A fixed exterior shelf shall be located in the left center compartment "E" near the top of the compartment. It shall serve the sole purpose of holding electrical equipment.

#### 5.30 STEP WELL AND WINDOWS

The curb side door step well shall have a light recessed into wall one of the step well. It shall be automatically lit when the side and rear doors are opened. The light shall be activated by a switch. The step well shall be finished with a polished aluminum diamond plate. There shall be a window in each of the three patient access doors. The window frame shall be of an extruded aluminum design with a protective anodized finish. The curbside entry door window shall include a sliding window to allow for fresh air when needed. The two rear door windows shall have fixed glass. The glass shall have a privacy tint.

##### 5.30.1

The curbside window shall have the following dimensions: 26 1/2 inches high and 19 1/2 inches wide. The rear windows shall be 22 1/2 inches high and 13 1/2 inches wide.

#### 5.31 PATIENT ENTRY DOOR LATCHES, HINGES AND HARDWARE

When the doors are opened, the hinges, latches and door checks shall not protrude into the patient compartment. All patient doors shall employ the same type of locking hardware. All door latches shall comply with FMVSS 206. The locking devices shall be two stage rotary latches and shall be in accordance with FMVSS. There shall be two door latches, one at the top and one at the bottom, controlled by a single locking handles. The latches shall lock into an adjustable Nader type pin located in the door frame. The Nader will utilize a captive nut to provide adjustment and replacement without loss of the nut plate. The door latching mechanism shall have an upper and lower patented "Emergency Release Latch" to allow egress from the vehicle if a system failure should occur.

#### 5.31.1

The door handles shall be Trimark OEM style handle with a large enough space for gloved hands to operate the handle. The door handles shall be free floating with 1008 cold rolled steel mechanical components with Nitrotec treated wear components. The locks shall be a KeyOne Plus lock cylinder with a reversible key. The KeyOne Plus system allows the lock core to be removed with a special key and allows it to be rekeyed for additional security and keying fleets the same. The rear trailing door shall have a patented side release paddle handle that removes the necessity of reaching inside the patient compartment door. The door entry system shall have been tested to 100,000 cycles.

#### 5.31.2

The locking system shall be from the locking handle by aluminum push rods. The patient compartment doors will be equipped with an inside door lock.

All entry doors shall have horizontal aluminum reinforcements welded to the door frame and the entry doors shall have closed cell block foam insulation.

### 5.32 COMPARTMENT DOOR LATCHES, HINGES AND HARDWARE

When the doors are opened, the hinges, latches and door checks shall not protrude into the patient compartment. All compartment doors shall employ the same type of locking hardware. All door latches shall comply with FMVSS 206. The locking devices shall be two stage rotary latches and shall be in accordance with FMVSS. There shall be two door latches, one at the top and one at the bottom, controlled by a single locking handles. The latches shall lock into an adjustable Nader type pin located in the door frame. The Nader will utilize a captive nut to provide adjustment and replacement without loss of the nut plate.

#### 5.32.1

The compartment door handles shall be Trimark OEM style handle with a large enough space for gloved hands to operate the handle. The door handles shall be free floating with 1008 cold rolled steel mechanical components with Nitrotec treated wear components. The locks shall be a KeyOne Plus lock cylinder with a reversible key. The KeyOne Plus system allows the lock core to be removed with a special key and allows it to be rekeyed for additional security and keying fleets the same. The compartment door entry system shall have been tested to 50,000 cycles. The door handle shall be mounted to the exterior door panel using mechanical fasteners and rubber gaskets that will eliminate the possibility of electrolysis. All doors shall have closed cell block foam insulation.

### 5.33 REAR DOOR HOLD OPENS

The rear doors shall be held open by (2) 5.5 inch Cast Grabber. The U shaped piece shall be attached to the door. It shall enter into a rubber insert when the door is in the open position. A corrosion inhibitor shall be applied to the mounting holes prior to installation.

### 5.34 COMPARTMENT DOOR HOLD OPEN

Seven (7) Compartments shall have a 30 pound gas strut in lieu of a spring loaded hold open.

### 5.35 COMPARTMENT DOOR HOLD OPEN

The right front compartment shall have a 30 pound gas strut in lieu of a spring loaded hold open.

### 5.36 CURBSIDE ACCESS DOOR HOLD OPEN

The curbside access door shall have a gas strut hold open to hold the door at approximately 90 degrees.

### 5.37 DOOR PANELS

The upper and lower portion of the curbside and rear access door panels shall be brushed stainless steel. The center shall be reflective chevron covered aluminum.

### 5.38 REAR FENDERS

Bright finish aluminum fender flares shall be provided around the rear wheel well openings to provide protection from wheel wash. A corrosion inhibitor shall be applied to the mounting holes prior to installation.

### 5.39 BUMPERS AND STEP

The chassis manufacturer shall supply the vehicle's front bumper. The rear bumper and step assembly shall be a single unit constructed of ten gauge steel "C" formed channel and .100 inch thick aluminum tread plate as measured at the thinnest point of the tread plate. The center step of the bumper assembly shall be designed to allow it to flip up and out of the way to facilitate patient loading. The flip up section of the rear bumper shall be diamond plate to meet the requirements of KKK - A - 1822F specification. The diamond plate flip up step shall be punched with three rows of raised star-shaped holes to create additional non-skid surface. A 1.5" x 2" x 0.125" aluminum box tube shall be welded inside the step full width on the side farthest from the rear of the vehicle. A stainless steel hinge with a center pin of .250 inch shall be used to attach the flip up section of the rear step to the main rear bumper assembly. There shall be eye beam constructed skid plates with tow eyes mounted as part of the frame of the bumper. This assembly shall be bolted to the frame of the chassis with 5/8 inch Grade 8 bolts. There shall be a one half inch clearance between the bumper assembly and the rear of the modular body to allow water drainage and inhibit water collection. There shall be a two inch red LED marker light on the street side and curb side of the bumper assembly. These lights shall be a sealed unit and the connectors protected with an adhesive heat shrink. The lights shall illuminate with the vehicle head light control.

### 5.40 RUNNING BOARDS

Diamond plate running boards shall be installed just under the cab doors for both the driver and passenger. The diamond plate step shall be punched with rows of raised star-shaped holes to create additional non-skid surface. The boards shall allow for easy entry into the cab.

### 5.41 SKIRT RAILS

Extruded aluminum channel with extruded rubber insert shall be provided on street side and curbside of modular body. The rails shall be installed along the lower edge of the body. The rails shall be offset from the sides by a minimum of one quarter inch to allow water and road wash not to collect between the rail and modular rail. Rubber spacers shall be used to install the rails to eliminate the possibility of electrolysis. A corrosion inhibitor shall be applied to the mounting holes prior to installation.

### 5.42 SKIRT RAIL REFLECTIVE TAPE

Reflective tape shall be inserted into channel in extruded rubber skirt rail and secured with stainless steel screw at each end. Color shall be white.

#### 5.43 FRONT STONE GUARDS

The lower front corners of the patient compartment shall have stone guards attached to the corner extrusion. They shall be diamond plate aluminum and extend from the bottom edge of the corner extrusion up approximately 13 inches. A corrosion inhibitor shall be applied to the mounting holes prior to installation.

#### 5.44 REAR KICK PLATE

Above the rear bumper and below the rear doors, there shall be a full length riser of aluminum diamond plate for a protective kick panel.

The kick panel shall be securely fastened with ceramic coated stainless steel screws to inhibit rust that could result from electrolysis and run the full rear width of the module. Pop rivets are not acceptable. There shall be a recess in the center of the kick plate for the installation of the tag holder.

#### 5.45 LICENSE PLATE HOLDER

A Cast Products license plate holder shall be installed in the rear kick plate.

#### 5.46 COMPARTMENT SILL PROTECTORS

All compartments shall have a stainless steel sill protector. The sill protectors shall be manufactured from 20 gauge stainless steel and cover the bottom door frame protecting it from scratches.

#### 5.47 REAR MUD FLAPS

Mud flaps shall be installed just behind the rear tires.

### 6.0 ELECTRICAL SYSTEMS AND COMPONENTS

**The emergency medical vehicle's electrical system must meet KKK - A1822 - F Section 3.7.1. This agency will specify systems, components, materials, and production methods within this section. However, a failure can occur whether the vehicle is under warranty or outside the warranty parameters. This agency operates the vehicle on a twenty four hours a day, seven day a week (24/7) basis. Therefore, the primary manufacturer will provide a local service facility during regular business hours and a 24/7 support service staffed by trained technicians to assist this agency.**

**Local service facility** \_\_\_\_\_

**24/7 Service assistance, phone number** \_\_\_\_\_

The driver and patient compartment control consoles shall be constructed in a way that the switches and any gauges are easily serviced. They shall be accessible through service panels. These panels will be secured in the closed position in a positive manner, yet can be easily opened for service.

5V-10-0050

The control console gauges shall be internally illuminated and controlled by the headlight switch rheostat. All lights and fixtures installed on the module exterior shall have a corrosion inhibitor applied to all mounting holes prior to installation.

5V-10-0055

The driver and patient console shall incorporate full size "Euro-Style" rocker switches. The switch assembly shall be 1.97 inches tall by 1.064 inches wide with silver plated copper contacts and a .250 inch spade type terminal.

The rocker switch shall incorporate a LED indicator lamp and rated at 15 Amps continuous service. The switch and rocker shall be of a thermo set molding material. The complete switch assembly shall be designed to withstand one thousand (1,000) volts RMS dielectric test. The switches shall have a positive "throw" feel and an audible click upon activation and deactivation

5V-10-0060

The rocker switches, as described in section 4.1.3, shall have integrated label lens area that is illuminated by two independent LED's. The LED brightness shall be controlled by the headlight rheostat. The label shall be white legends on black poly carbonate background.

5V-10-0065

The OEM throttle monitor shall be mounted in the primary manufacturer's console. It shall be mounted to be easily accessible to the driver.

5V-10-0070

#### 6.1 WARNING INDICATORS

The electrical system shall incorporate a warning light panel in the driver's console. It shall provide indicator lights for showing when a patient compartment door(s), side and rear, are open. This shall be a flashing red LED light. There shall be an exterior compartment "door open" warning light. This shall be a flashing red LED light of the same size.

5V-10-0075

A battery indicator light shall be provided. It will be a green light located in the warning light panel. It shall illuminate when the battery switch is in the "ON" position. The light shall be steady burn to indicate the batteries have been selected.

5V-10-0080

#### 6.2 WIRING INSTALLATION

The ambulance body and accessory electrical equipment shall be served by circuit(s) separate and distinct from the vehicle chassis circuits. Wiring methods must conform to SAE J1292. All wiring provided by the primary manufacturer shall be copper and conform to all the SAE J1127 and SAE J1128 requirements. All low tension primary cable shall have GXL or better insulation. All low tension battery cable shall have SGX insulation. Documentation from the wiring manufacturer that the wire used by the primary manufacturer is in compliance with this requirement shall be submitted with the proposal. Bids not meeting this requirement will not be accepted.

#### 5V-10-0085

The wiring shall be permanently color coded to identify wire function. Wires shall be permanently heat ink embossed with both number and function codes.

The function code shall be the descriptive name of the circuit served. The number code shall be the exact purpose of that circuit. This number code shall be completely referenced in a detailed wiring schematic provided with the vehicle. The function and number code shall be embossed at a minimum of four inch intervals the entire length of the wire terminating into all switch and control panels. The use of multi-conductor cable must be function and color coded and shown on the wiring diagram.

#### 5V-10-0090

Wiring shall be routed in conduit or high temperature looms with a rating of 300 degrees Fahrenheit where necessary to protect it. All added wiring shall be located in accessible, enclosed, and protected locations and kept at least six inches from the exhaust system components. Electrical wiring and components shall not terminate or be routed in the oxygen storage compartment except for the oxygen controlled solenoid, compartment light, and switch. All conduits, looms, and wiring shall be secured to the body or frame with insulated metal cable straps in order to prevent sagging and movement which results in chafing, pinching, snagging or any other damage. All apertures on the vehicle shall be properly grommeted and sealed for passing wiring and conform to SAE 1292. All items used for protecting or securing the wiring shall be appropriate for the specific application and be standard automotive, aircraft, marine, or electronic hardware.

#### 5V-10-0095

Circuit connections shall be made on barrier style terminal blocks utilizing binding post screws for positive mechanical connections. minimize the potential for wiring shorts and voltage drops all wiring terminals shall be brass, tin plated, annealed, ETP copper with nylon high heat insulation. Serration's, inside the barrel, provide maximum contact and tensile strength after crimping. Connection shall be machine crimped, UL standards, with a high quality crimping tool that produces crimps for a given size wire and terminal that are precisely alike in appearance and performance. Crimping pressure must be controlled by a ratchet device on the hand tool or a corresponding pre-calibration in the crimping jaws of an automated machine. Crimping pressure can neither over-stress nor under stress the terminal-barrel-machined dies.

#### 5V-10-0100

No splices shall be permitted except for connection of "pig-tail" devices. Butt splices are permitted for connection of "pig-tail" devices. The use of IDC (**I**nsulation **D**isplacement **C**onnectors) connectors, ie: "3M Scotchlok" type fasteners, is not acceptable.

#### 5V-10-0105

The various wiring installations as supplied with this vehicle shall be of the automotive "harness" design. For ease of identification and future replacement these harnesses shall be engineered and manufactured in the following sections.

1. Engine compartment harness.
2. Driver's control console harness.
3. Main module harness.
4. Chassis rear lighting harness.

This agency is extremely concerned the primary manufacturer has the ability to control, warranty and replace the harnesses. To that end, the primary manufacturer shall not subcontract the construction of these harnesses.

5V-10-0110

### 6.3 WIRING CRITERIA AND CIRCUIT BOARD

All wiring devices, switches, outlets, etc., except circuit breakers, shall be rated carry a minimum of one hundred and twenty-five percent (125%) of the maximum ampere load for which the circuit is protected. All wires carrying a load of more than 5 amperes shall be a minimum of 16 AWG. There shall be a master electrical component panel located in the vehicle. It is preferred that the master panel be mounted on or near the bulkhead of the patient compartment. Standard circuit breakers, relays, and diodes shall be mounted on a printed circuit board that is easily accessible. All components on the circuit board are to be permanently labeled as their function.

5V-10-0115

The printed circuit board shall be designed and manufactured as follows: A screen printed board with all circuits fully numbered and labeled. The circuit board shall be a double-sided copper trace printed circuit with a double-sided laminated isolator. The board shall be non-photo imageable solder mask over bare copper with hot air leveled solder over non masked copper. Fuse capacity is the beginning factor in calculating trace width to ensure proper current carrying capability. The circuits shall then be oversized as much as space permits for maximum cooling of the board. All holes shall be plated through. The terminal strips shall be mounted on the board for connection of the above mentioned wiring harness. Automotive transient suppressers must be incorporated into circuit board at the point of cable entry to the board. All relays must include built in noise suppression. The suppression must be accomplished with a IN4001 parallel with the coil. The relay must have a 40 ampere continuous contact rating with one form C contact arrangement. Normally open contact must have a maximum initial voltage drop of 200 milli-volts at 40 ampere contact load. The relays must withstand 24 VDC for five minutes conducting rated contact current in case of accidental 24 volt jump start condition. Circuit board options must be programmable via jumpers to facilitate addition of options. The color of wire and circuit number must be screened printed at the terminal block connections on the board for rapid identification and relation schematics.

Documentation that the above requirements are met must be included with the bid document.

5V-10-0120

The printed circuit board shall incorporate red LED indicators for on board diagnostics for input, output, and switching circuits for troubleshooting at a glance.

5V-10-0125

#### 6.4 CIRCUIT BOARD CERTIFICATION

The printed circuit board must meet the following specifications:

1. Packaging and Interconnecting Acceptability Standard number IPC 600
2. UL-796
3. Solder mask, IPC number SM-840
4. Solder in conformance with MIL SPEC QS-571
5. Laminate in conformance with IPC number 4101

Certification must be included with this bid.

5V-10-0130

A service loop of wire or harness, per KKK-A1822-F specification, shall be provided at all electrical components, terminals, and connection points. All relays shall be mounted for ease of serviceability. All high current diodes greater than 5 amperes shall be heat sink mounted. provide the optimum circuit "overload" protection, the electrical system's main circuit board shall allow for the use of stud type automatic reset pole breakers. One spare 15 ampere circuit breaker shall be provided for future use. A solid state electronic flasher shall be heat sink mounted to the panel for control of the flashing warning light system. All wiring between the cab and module shall be connected to a terminal strip(s) or block(s) or use multi pin connectors on the electrical component panel and shall provide for future module replacement. All connectors and terminals provided shall comply with SAE J163, J561, or J928 as applicable.

5V-10-0135

#### 6.5 MASTER MODULE DISCONNECT SWITCH OR DEVICE

This device shall be located on the driver's compartment console and shall be permanently labeled and back lighted with a LED light and the brightness controlled by the head light rheostat. The "MASTER" disconnect switch shall be considerably different in size and feel from the other console switches.

5V-10-0140

#### 6.6 PATIENT COMPARTMENT CONTROLS

All switches and controls for the patient compartment shall be located on a service panel in the Action Area angled slightly toward the rear of the vehicle. The switches and controls shall be identical as referenced in section 4.1.3 of this document.

These switches shall not function until the "MASTER" switch in the driver's console is in the "ON" position. The patient compartment switches shall be permanently marked and back lighted by a LED light.

5V-10-0145

#### 6.7 ELECTROMAGNETIC RADIATION AND SUPPRESSION

Must meet KKK - A1822 - F specification. Documentation from an independent testing laboratory must be included with the bid.

#### 6.8 BATTERY SYSTEM

The vehicle shall be supplied with a dual 12 volt battery system, two OEM batteries. The battery system shall be wired in accordance with KKK - A - 1822F. The system must meet SAE J541 for starter circuit voltage drop. The batteries shall be activated through the OEM ignition switch. The ignition switch shall only turn off power to the module and not to the chassis circuits. When the ignition is shut off a five minute time keeps the module powered up for unloading patients. A momentary rocker switch shall be installed which will disable the timer. It shall be labeled TIMER BYPASS. It shall be located on the driver's side of the cab console.

#### 6.9 ANTENNA CABLE INSTALLATION

Shall meet the requirements of paragraph 3.14.3 of Federal Specification KKK - A - 1822E.

#### 6.10 INTERNAL 12 VOLT DC POWER

The patient compartment shall be furnished with a 12 volt DC, 20 ampere capacity, separately protected circuit, with two outlets. The outlets shall be Cigar Lighters and shall be located in the Action Area.

#### 6.11 PORT 5 VOLT DC POWER USB STYLE

The Drivers compartment shall be furnished with a 5 volt DC, 2.1 ampere capacity, separately protected circuit, with a Dual USB outlet. It shall be located in the center console to the passenger side.

#### 6.12 POWER SOURCE

A 12VDC power source shall power customer supplied portable battery charging devices. It shall be 20 amp and ignition/shoreline switch hot. The power source shall be split into two locations tagged and identified (1) behind driver's seat and (1) behind action area in module.

#### 6.13 POWER SOURCE

A 12VDC power source shall power Cigar lighter outlet. It shall be 20 amp and ignition hot.

#### 6.14 POWER SOURCE

A 12VDC power source. It shall be 30 amp and constant hot, to terminate behind the passenger seat with 6 foot tails (hot and ground)

#### 6.15 SHORELINE INLET

A 20 amp Super Auto Eject shoreline inlet with a GFI and interrupter shall be installed and located above compartment E.

#### 6.16 115 VOLT AC UTILITY POWER

115 volt AC utility power must meet KKK - A1822 - E. Utility power shall be as described in KKK - A1822 - E paragraph 3.7.8.1. Electrical 115 volt AC receptacles shall be as described in KKK - A1822 - E paragraph 3.7.8.2.

#### 6.17 110 VAC OUTLETS

Two 110VAC duplex outlets shall be installed in the patient compartment. One outlet shall be located in the action area, and one outlet shall be located in the right front cabinet.

#### 6.18 BATTERY CHARGER

A Progressive Dynamics, PD9130 Auto battery charger shall be installed. It shall be a 12 amp charger/conditioner.

#### 6.19 INVERTER

A Vanner 20-1000TUL inverter shall be installed. It shall provide power to the 110VAC outlets. A switch shall be located in the action area.

#### 6.20 ACTION AREA CONSOLE

There shall be a console in the action area of the rear patient compartment to house switches. The console shall be manufactured out of 3/4" Laminated marine grade Plywood and be angled so that the switches will be easily accessible for an EMT in the attendant seat or a CPR seat.

#### 6.21 INSTRUMENT CONSOLE

A console shall be installed house the switching panel and radio installation. This console shall be attached the engine cover housing below the line of sight of the driver. The console shall be a rotationally molded one piece ABS console. An access panel shall be installed on the top of the console facilitate servicing. The switches shall be full size rocker switches with LED on the indicators. The switch assembly shall be 1.97 inches tall by 1.064 inches wide with silver plated copper contacts and a .250 inch spade type terminal. The switch and rocker material shall be a thermal set molding material. The complete switch assembly will be tested to withstand one thousand (1,000) volts RMS dielectric. Documentation of switch testing to be included with the bid. The switches must have a positive "throw" feel and an audible "click" upon activation.

#### 6.22 LOW VOLTAGE ALARM

The electrical system shall be monitored by a system that provides both an audible and visual warning in case of low voltage in the ambulance. The alarm shall sound if the system voltage at the batteries drops below 11.8 Volts for a 12 Volt nominal system for more than 120 seconds.

#### 6.23 AUDIO WARNING SYSTEM

Two Whelen SA-315, 100 watt speakers shall be installed in the front OEM grille area.

#### 6.24 SIREN, PUBLIC ADDRESS SYSTEM

The ambulance shall be equipped with hands free electronic siren with silent testing. The siren shall be a Whelen WS-295-SLSA1.

#### 6.25 SIREN/HORN SWITCHING

The siren shall be switched through the horn ring.

#### 6.26 BACKUP ALARM

A backup alarm with a cutoff switch shall activate when the vehicle is shifted into reverse. The alarm shall automatically be reset and engage when the vehicle is placed in reverse again. The device must meet OSHA and SAE J994 requirements, and shall be rated (SAE) for Type C or B.

## 6.27 VEHICLE EXTERIOR LIGHTING REQUIREMENTS

The basic exterior ambulance lighting shall comply with FMVSS standard number 108 and the requirement herein and include:

1. Amber front, rear directional signals, red brake and hazard warning lights.
2. Front and rear side marker lights.
3. Back up light(s).
4. Loading lights.
5. Clearance lights
6. Ambulance emergency lights.
7. Flood lights.
8. Spotlight(s)

Note: This agency is concerned for the safety of the patients, crew, and the public sharing the roadways. Therefore, this agency requires the primary manufacturer incorporate recessed DOT marker lights at the highest point of the vehicle. The marker lights shall be visible 360 degrees. In addition each corner marker light shall be visible 180 degrees, also at each corner the marker light lens cover shall be tilted upward on a 45 degree angle be visible above the horizontal plane for 360 degrees. These measures will insure the vehicle will be visible in low light conditions with the headlights in the "on" position. **Bolt on upper clearance lights or clearance lights within the support side extrusions will not be acceptable.** The rear side marker light shall be a minimum of two inches in diameter and shall function as a turn signal indicator as described in KKK - A1822 - E.

F3-10-1000

## 6.28 EMERGENCY LIGHTING SYSTEM

The emergency lighting system must provide the vehicle with 360 degrees of visual warning ability. The system must display highly perceptible and attention getting signals that function in a modal system and convey the message in the primary mode to clear the right of way. In the secondary mode hazard vehicle stopped on right of way.

F3-10-2000

The basic warning light system shall contain twelve red, one clear and one amber light These lights shall function in a dual mode system as shown in KKK - A - 1822E and meet the physical and photo metric requirements of paragraph 3.8.2.1 of that same document.

The upper body warning lights shall be identical and mounted at the extreme upper corner areas of the ambulance body below the horizontal roof line, with the single clear light mounted between the two front facing red upper corner lights and the amber light centered above the rear doors. The two red grill lights shall be mounted per KKK - A - 1822E specifications without compromising the chassis manufacturer's air intake into the engine compartment.

F3-10-3000

#### 6.29 PHOTO METRIC AND PHYSICAL REQUIREMENTS

As specified by KKK - A - 1822E. All emergency light switches shall be labeled as specified in paragraph 3.7.11 of KKK - A - 1822E, and the primary/secondary mode switch(s) shall have an indicator light to show the driver which mode is activated. All warning light control switches, as described in section 4.3.1 of this document, shall be located in the driver control console and arranged to provide the warning signal modes and combinations as specified in Table 1 of KKK - A - 1822E, page 19. An independent testing laboratory will certify that the system meets these requirements. Test documents to be included with this proposal.

A Whelen 90RR5FCR Red Super LED light with a clear lens shall be located TBD.

A Whelen 90RR5FCR Red Super LED light with a clear lens shall be located TBD.

A Whelen 90AA5FCR Amber Super LED light shall be located TBD.

A Whelen 90CC5FCR Clear Super LED light shall be located TBD.

A Whelen 90CC5FCR Clear Super LED light shall be located TBD.

Two Whelen 70F000RB Red Halogen lights shall be installed as grille lights and two shall be installed as intersections lights.

Whelen flanges shall be installed on lights.

A Whelen, LIN3 RSR02ZCR, Super LED Red light shall be installed TBD.

#### 6.30 CLEARANCE LIGHTS

The primary manufacturer shall incorporate DOT marker lights at the highest point of the vehicle. The marker lights shall be visible 360 degrees. In addition, each corner marker light shall be recessed and visible 180 degrees. Also at each corner, the marker light lens cover shall be tilted upward on a 45 degree angle to be visible above the horizontal plane for 360 degrees. These measures will insure the vehicle will be visible in low light conditions with the headlights in the "on" position. Bolt on upper clearance lights or clearance lights within the support corner extrusions will not be acceptable. Amber lenses shall be installed on the front corners and Red lenses shall be installed on the rear corners. The light shall be LED and flash at high intensity when activated through a separate switch located on the cab console.

#### 6.31 MARKER LIGHTS

Two amber LED marker lights shall be installed in the rear bumper. One shall be installed on the driver's side and one installed on the passenger side of the rear bumper pontoons.

#### 6.32 MARKER LIGHTS

Two red LED marker lights shall be installed in the rear bumper. One shall be installed on the driver's side and one installed on the passenger side of the rear bumper pontoons.

### 6.33 EXTERIOR FLOOD LIGHTS

Four Whelen 90E000ZB Clear lights shall be installed. Flood and loading lights shall not be less than seventy-five inches above the ground and shall not be obstructed by open doors. Two floodlights shall be located on each sides of the vehicle and be firmly fastened to the body surfaces below the roof line. The side flood lights shall be controlled from the cab console and be independently switched.

### 6.34 EXTERIOR LOADING LIGHTS

Two Whelen, 90E000ZB, halogen loading lights shall be provided above the rear doors and shall illuminate the area surrounding the back loading and unloading doors. Rear loading lights shall activate automatically when the rear doors are open regardless of the switch position in the cab console. The rear load lights shall be incorporated with the FMVSS backup lighting system.

### 6.35 FLASHER

A Vanner 9860GCPE flasher shall be installed and provide a flash pattern to meet KKK-1822 E specification.

### 6.36 LICENSE TAG LIGHT

There shall be two license tag lights installed on either side of the rear license plate.

### 6.37 TAIL LIGHT PACKAGE

There shall be a Whelen taillight package installed on the rear of the vehicle. The stop/tail lights shall be LED with a minimum of 32 square inches of lighted surface area. The turn signals shall be a 5" LED arrow shaped design. The backup lights shall be Halogen. All three lights per side shall be in a common housing. A waterproof connection to the OEM tail light harness is required.

### 6.38 MODULE HEADLINER

The module headliner shall be manufactured out of expanded PVC material. The liner shall be white and installed to allow flush mounting of the interior lighting.

### 6.39 VEHICLE INTERIOR LIGHTING

The basic interior compartment shall be provided with seven overhead dual intensity halogen lights. The lights shall be Weldon 8046. There shall be four lights located over the primary patient stretcher and three over the squad bench. These lights shall be mounted into the patient compartment head liner and shall not protrude into the patient compartment. The overhead shall have two levels of intensity with high and low settings. The attendant shall be able to control the level of light via switches in the action area control panel.

The dual lighting shall work together or may be separately selected from side to side. The four lights over the primary patient shall illuminate on the low setting when the side modular or rear modular doors are open. Certification shall be provided by an independent testing laboratory with this proposal.

### 6.40 STEP WELL LIGHT

A step well light shall be provided in the step well area of the modular curb side door and shall be activated upon opening the curb side or rear modular doors.

#### 6.41 ACTION AREA LIGHT

A twelve volt direct current incandescent light with integral switch shall be provided in the attendant action area. The light shall be a Xantech 105-500.

#### 6.42 12VDC INTERIOR LIGHTING

Three Thinlite #766, 18 inch fluorescent lights shall be located in the rear headliner.

#### 6.43 HANDHELD SPOTLIGHT

A hand held spotlight shall be provided with a minimum of four hundred thousand candle power lamp. The spotlight shall be a Blue Eye. It shall be in a corrosion proof housing with a protected momentary switch to prevent accidental activation. A minimum eight feet of heavy duty coiled cord will be supplied and it shall be hard wired in the cab area and accessible to the driver and passenger.

#### 6.44 ADDITIONAL COMPARTMENT LIGHTS

An additional compartment light shall be installed in circuit board area.

#### 6.45 TIMER

An Intermatic 15 minute Timer shall be installed. The timer shall be wired constant hot and shall power lights in compartments.

#### 6.46 ELECTRICAL TROUBLESHOOTING LIGHT

A small light with a switch shall be installed in the circuit board area for troubleshooting. The light shall be wired battery hot.

### 7.0 SUCTION PUMP

A suction pump shall be installed that shall comply with Federal Specifications KKK-1822E.

#### 7.1 SUCTION ASPIRATOR

The ambulance shall be equipped with an on board vacuum aspirator. The unit shall be mounted on the action area wall above the action area tray to collect any bio fluids that may be spilled. The unit shall be an SSCOR 22000 with a stainless steel container holder. The container shall be disposable and the regulator panel shall be located in the action area panel. The vacuum pump shall be installed via a twelve volt direct current system. The on/off switch shall be located in the attendant's console.

##### 7.1.1

A vacuum port shall also be located in the action area to supply the vacuum to the suction container.

### 8.0 ACOUSTIC AND CLIMATE INSULATION

The primary manufacturer shall supply an insulating material that is nonflammable with a Class A, Class 1 fire rating. It shall be certified to meet the smoke and flammability requirements of FMVSS 302. The exposed walls of the exterior compartments and wheel wells that intrude into the interior of the modular shall be covered with reflective insulating material with a value of R-14. The side, front, rear, walls as well as the ceiling shall be insulated with three inch thick temperature rated unfaced fiberglass with a value of R-11. Fiberglass has been proven to provide excellent sound and thermal barrier over other materials. Fiberglass insulation is safe and widely used in the automotive and construction industry.

## 9.0 OVERHEAD GRAB RAIL

An overhead grab rail shall be installed in the patient compartment head liner. The grab rail shall be yellow powder coated stainless steel and handicapped style with rounded ends. The grab rail shall be a minimum of 117 inches long and shall be mounted in a recess in the liner.

## 9.1 ENTRY DOOR GRAB HANDLES

On each entry door there shall be an L shaped grab handle. The vertical portion of the L shall be close to the hinge of the door and run the full length of the upper window in the door. The horizontal portion of the L shall be located just under the upper window. The grab handles shall be 1 inch diameter brushed stainless steel and handicapped style.

## 10.0 OXYGEN CYLINDER RACK

A Ziamatic oxygen cylinder rack shall be located in compartment "F". The rack shall be QRM-2 for an "M" cylinder.

## 10.1 OXYGEN, MAIN SUPPLY AND INSTALLATION

The ambulance shall have a hospital type piped oxygen system capable of storing and supplying three thousand liters of medical oxygen. The cylinder controls shall be accessible from inside the patient compartment. The pressure gauge shall be visible from either the attendant's seat or from the squad bench. The oxygen shall be piped to two self-sealing Ohio adaptable oxygen outlets located in the action area and one located on the curbside wall at the head of the squad bench. The oxygen system will incorporate electrically conducted oxygen hose with a working pressure of one hundred and fifty pounds per square inch. All oxygen hose and outlets will use machine crimped brass ferrules and high pressure connectors. The entire oxygen delivery system will be pressured tested with a minimum of one hundred and fifty pounds per square inch of pressure of nitrogen gas for a period of four hours. The testing documentation will be delivered with the vehicle.

## 11.0 COT MOUNT

Install a center mounted Stryker #6392 Performance-LOAD system with inductive charger and floor plate.

## 11.1 STRETCHER

Stryker Power Pro XT #6506 shall be included and installed

## 12.0 IV HOLDERS FOR INTRAVENOUS FLUID CONTAINERS

Shall be as specified in paragraph 3.11.9 of Federal Specification KKK - A - 1822E.

## 13.0 INTERIOR SURFACES

All vertical edges of cabinets shall be of an aluminum extrusion with a  $\frac{3}{4}$  inch radius designed to free the interior of the patient's compartment of all sharp edges or projections. The face and inside of the cabinets shall be covered by a commercial grade laminate and adhered to the cabinet face by a high quality poly vinyl adhesive using a thermal press application. The wood, adhesive and laminate shall be pressed together at 200 degrees for four minutes in a thermal platen press. There shall be no voids of the adhesive between the laminate and the cabinet surfaces.

### 13.1 CABINET CONSTRUCTION

The interior cabinets, squad bench assembly, shelves and doors shall be constructed of marine grade plywood; due to the product's ability to be customized to fulfill the needs of this agency, the additional acoustical and thermal insulation properties, repair ability, and the safety factor of not producing sharp fragments or shards in the event of a serious collision. The thickness of the finished panels used to construct the cabinets, shelves and doors shall be 3/4 inches including mica, adhesive, and glue. Any construction material that provides anything less than 3/4 inch panels in cabinet construction is not acceptable to this agency.

#### 13.1.1

The squad bench lid shall be attached to the squad bench assembly via a stainless steel piano hinge the entire length of the bench. The squad bench shall be equipped with a locking device to automatically secure the lid upon closing. The patient compartment wall panel (behind the squad bench) and the cab compartment wall panel shall be constructed of 1/4 inch plywood and covered with color coordinating high pressure laminate.

#### 13.1.2

The cabinets shall be constructed using 8 mm dowels placed no farther than 32 mm apart. The dowels shall be a hardwood and pre-glued.

#### 13.1.3

The doors on the upper cabinets shall be surface mounted with European hinges and 3mm edge banding. The doors on the center and lower cabinets shall be flush mounted using continuous stainless steel piano hinge and a 3 mm edge banding. All doors and cabinet openings shall be covered with a 3 mm edge banding with radius edges.

### 14.0 INTERIOR STOWAGE ACCOMMODATIONS

The interior of the patient compartment shall provide but not be limited to a minimum volume of thirty cubic feet of enclosed cabinets. Interior cabinet, shelf and compartment space shall be conveniently located for medical supplies, devices or other equipment. All interior cabinets shall be fully lined inside with high-pressure plastic laminate.

The equipment and supplies necessary for airway management shall be within easy reach of the medic at the head of the stretcher. Interior cabinet dimensions are as described.

### 15.0 INTERIOR SURFACES

The cabinets shall be a light gray gloss color.

### 16.0 FLOOR

A top floor of seven plies three quarter inch marine grade plywood, sanded both sides with no voids and shall be installed over the moisture barrier. The plywood shall be marine resin coated prior to installation to prevent warping due to ambient moisture absorption. The plywood floor shall be one piece from the bulkhead to the rear doors between the patient door steeple and squad bench and extend under the street side cabinets. The plywood floor shall be securely anchored to the floor sub structure with one quarter inch UNF machine by two and one half inch screws.

16.1 FLOOR COVERINGS

The patient compartment floor covering shall be a heavy duty material that is impervious to fluids. The flooring shall be glued to the plywood floor using an adhesive compound. The flooring shall be the color Gunpowder Gray. There shall be no adhesive voids between the flooring and the plywood. The floor shall be designed to roll up the side of the street side and bulk head cabinets and squad bench.

17.0 ATTENDANT SEATING

Seating for the attendant shall consist of a contoured high back padded bucket seat. The seat covering shall be an easy clean vinyl material and be impervious to blood borne pathogens and other contaminants. Therefore, cloth seats or seats with welting seams or visible stitching will not be accepted. The vinyl shall be Gunmetal. Seating must meet OSHA regulation 1910.1030. The seat belt must be certified to KKK - A1822 - E specification and to FMVSS and shall be an integrated three-point harness. An integrated child safety seat shall be incorporated in the seat. Installation shall comply with FMVSS. The seat shall be mounted on a metal box base.

18.0 UPHOLSTERY

**The finish of the entire patient's compartment, including storage cabinets and equipment, shall be impervious to soap and water, disinfectants, bio fluids, mildew and shall be fire resistant per FMVSS 302. Upholstered cushions shall be a minimum of thirty two ounce nylon reinforced commercial vinyl material. Squad bench cushions and attendant seat and backrest cushions shall be fabricated in such a manner to eliminate exposed welting. Cushions with welting or beaded seams shall not be accepted due to the risk of bio fluid penetration. Describe below your method of cushion construction. The color of the upholstery shall be gunmetal gray.**

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19.0 BULKHEAD CABINET

A bulkhead cabinet shall separate the cab from the patient compartment with a sliding door to allow access between the two while providing privacy. The open door shall allow for an aisle of at least 17 inches between the compartments. The door shall have at least a 150 square inch transparent, shatterproof viewing panel in the center section at the driver's eye level. The door shall be secured with a driver's side self-latching device in the open and closed positions. The bulkhead cabinet shall be moved to the rear of the vehicle to allow for 10 inches of space behind the driver and passenger seats.

20.0 INTERIOR OXYGEN VIEWING DOOR

A Lexan door shall be installed on the oxygen viewing opening.

21.0 BULKHEAD SLIDING DOOR

The door shall have at least a 150 square inch transparent, shatterproof viewing panel in the center section at the driver's eye level. The door shall be secured with a driver's side self-latching device in the open and closed positions.

## 22.0 RIGHT FRONT CABINET

The right front cabinet shall house the Heating and Air Conditioning unit. The intake vent shall be located in the lower left corner of the cabinet. The air shall blow out of a vent located in the upper portion of the cabinet. Cabinet E1 shall be the upper portion of the cabinet with dimensions 28.25 inches high and 33.25 inches wide and 22.25 inches deep. The lower E2 cabinet shall be located next to the intake vent and shall be 26.75 inches high and 20.5 inches wide and 22.5 inches deep. Both E1 and E2 shall allow access from exterior compartment A.

### 22.1 RIGHT FRONT CABINET DOORS

The right front cabinet shall have two wood doors. The door for the upper cabinet E-1 shall be a dual wood door, and the door for the lower cabinet E-2 shall be hinged on the left. The doors shall be manufactured from 3/4 inch marine grade plywood and be covered in color coordinated high pressure laminate. The doors shall be mounted flush with the cabinet opening.

#### 22.1.1 CABINET HANDLE

A "C" pull handle shall be installed on each door on the right front cabinet.

#### 22.1.2 CABINET LATCH

A plunger roller latch shall be installed on the right front cabinet doors to keep them secure during transit.

#### 22.1.3 CABINET LATCH

A lever latch shall be installed.

#### 22.1.4 CABINET LATCH

A lever latch with a lock shall be installed.

## 23.0 SQUAD BENCH CABINET

The squad bench cabinet shall be located on the curb side of the patient compartment over the rear wheel well. The squad bench shall be a minimum of 72 inches long and be constructed of three quarter inch birch. The lid shall be attached to the squad bench assembly via a stainless steel piano hinge the entire length of the bench. The hinge shall attach with fasteners in a vertical position through the face of the lid and not through the edge of the cabinet and lid. The squad bench shall be equipped with a locking device to automatically secure the lid upon closing. The squad bench shall be furnished with two sets of 6 Point safety belts for seated occupants and three two-point belts for the retention of a cot when positioned on the squad bench. The anchorages for the side facing seat belt assembly shall withstand a minimum of 2,500 pounds force when tested in accordance with FMVSS 210-S5.1. A full length cushion shall be installed on the squad bench lid and on the wall as a back rest. The interior of the squad bench shall provide storage the full length of the bench. At the head of the squad bench shall be a built in trash disposal area. A trash can shall be accessible under a red flip up lid, and Sharps container's circular opening shall be accessible through a round cutout in the squad bench lid. Both the trash can and the sharps container may be removed from the squad bench by lifting up a sectioned portion of the squad bench lid.

### 23.1 SQUAD BENCH LID

The squad bench shall have a full length lid that shall be manufactured from three quarter inch birch. The lid shall be covered in color coordinating high pressure laminate.

#### 23.1.1 SQUAD BENCH LATCH

The squad bench lid shall be secured with a paddle handle that latches automatically when the squad bench lid is closed. The latch shall hold the lid secure during transit and shall not open unless the handle is lifted.

#### 23.1.2 SQUAD BENCH HOLD OPEN

When the squad bench lid is lifted, it shall be held in place by a 60 pound pneumatic hold open.

#### 23.2 CURBSIDE SPLINT CABINET (NONE)

There shall NOT be a cabinet shall be located above the squad bench near the headliner.

#### 23.3 STREETSIDE REAR MIDDLE CABINET

Cabinet "H" shall be located on the street side of the patient compartment. It shall be the rear most middle cabinet and shall be 20.75 inches high and 38.25 inches wide. The opening shall provide access to compartment "D".

#### 23.4 STREETSIDE MIDDLE LOWER CABINET

Cabinet "O" shall be located on the street side of the patient compartment. It shall be the middle lower cabinet

#### 24.0 CPR SIDE SEAT

A CPR side seat shall be located just above the rear street side wheel well. Seamless upholstered cushions shall be located on the bottom and rear wall of the seat area. Cushions shall also be located above the head area for safety.

#### 24.1 CPR SEAT STORAGE

A small storage area shall be located under the CPR seat and just above the wheel well. The storage shall be accessed by lifting a lid which holds the bottom seat cushion.

#### 24.2 STREETSIDE REAR UPPER CABINET

Cabinet "J" shall be located on the street side of the patient compartment. It shall be the rear upper cabinet and shall be 18.5 inches high, 24.25 inches wide and 19.5 inches deep.

#### 24.3 STREETSIDE REAR UPPER CABINET

Cabinet "K" shall be located on the street side of the patient compartment. It shall be the rear upper cabinet just above cabinet "M" and shall be 18.5 inches high, 26.75 inches wide, and 19.5 inches deep.

#### 24.4 STREETSIDE FORWARD UPPER CABINET

Cabinet "L" shall be located on the street side of the patient compartment. It shall be the forward upper cabinet just above the action area. The cabinet shall be 18 inches high, 39 1/2 inches wide and 17 3/4 inches deep.

#### 24.5 STORAGE COMPARTMENTS AND CABINET DESIGN

All storage cabinets shall be easily opened but shall not come open during transit. The cabinets shall be accessible through a variety of door options.

#### 24.5.1

When specified to be Lexan, the doors shall be reciprocating horizontal sliding Lexan doors. The door shall be transparent to permit viewing of supplies and the door shall open with a grab anywhere device. The handle shall run the full vertical length of the Lexan. The Lexan shall be three sixteenths of an inch in thickness and shall be enclosed in an extruded aluminum frame. The frame shall cover the entire perimeter of the cabinet opening and the Lexan set within the frame on a track lined with a material to prevent the Lexan from sliding open and shut during transport.

#### 24.6 CABINET "H" DOOR

The door to cabinet "H" shall be a Lexan slider. The Lexan shall be gray.

#### 24.6.1 CABINET "O" DOOR

The door to cabinet "O" shall be a Lexan slider. The Lexan shall be gray.

#### 24.7 TELEMETRY TRAY

The top of the telemetry cabinet shall provide a clean work area. The countertop shall be one piece with a one inch lip around the tray. The tray shall be manufactured from molded polyester resin to provide a seamless countertop. The tray shall be topped with a durable top coat of gray gel coat. NO EXCEPTION.

#### 24.8 ACTION AREA TRAY

The top of the action area cabinet shall provide a clean work area. The countertop shall be one piece with a one inch lip around the tray. The tray shall be manufactured with a durable top coat of gray gel coat. NO EXCEPTION. This tray is mandatory to facilitate cleaning and contain any fluids or bio.

#### 24.9 ACTION AREA CABINET

The action area shall provide for easy access to switches located in the action from the attendant seat, squad bench and CPR seat, if applicable. The switches shall be located in an angled cabinet on the back wall of the action area.

#### 24.10 CABINET "J" DOOR

The door to cabinet "J" shall be a Lexan slider. The Lexan shall be gray.

#### 24.11 CABINET "K" DOOR

The door to cabinet "K" shall be a Lexan slider. The Lexan shall be gray.

#### 24.12 CABINET "L1" DOOR

The door to cabinet "L1" shall be a solid wood door hinged on the right.

#### 24.13 CABINET "L2" DOOR

The door to cabinet "L2" shall be a Lexan slider. The Lexan shall be gray.

## 25.0 STANDARD MANDATORY MISCELLANEOUS EQUIPMENT

Unless otherwise precluded elsewhere in this specification the vehicle shall be equipped with the following:

One five pound fire extinguisher that is ABC dry chemical multipurpose with a quick release bracket.

No smoking oxygen equipment signs conspicuously place in the cab and patient compartment.

A back up alarm, audible warning device activated when the vehicle is shifted into or moving in reverse.

## 25.1 SPARE TIRE MOUNTING

The spare tire mounting brackets shall be shipped loose in the vehicle.

## 25.2 SPARE TIRE

The OEM spare tire shall be shipped with the vehicle.

## 26.0 TESTS

The primary manufacturer is obligated to prove that the vehicle, ambulance components and equipment provided meet the requirements of this specification and are compliant to Federal Ambulance Specification KKK-A1822-FKKK - A1822 – F and any amendments in effect at the time of this bid. Copies shall be provided with this of the test documents and a letter from an independent testing laboratory that has performed the tests certifying that the following tests have been conducted and passed. Test documents or any source other than described above shall not be accepted. Failure to comply with the requirement shall be considered as non-responsive and will not be accepted. The certified tests are as follows and conform to the requirements of this specification and Federal Ambulance Specification KKK-A1822-F.

- A. Vehicle Physical Dimensions
- B. Patient Compartment Interior Dimensions
- C. Stepwell, Bumpers and Facilitation
- D. Storage Compartment and Facilitation
- E. Ambulance Body and Patient Area
- F. Vehicle Weight Distribution
- G. Water Spray Test
- H. 115 VAC Utility Power
- I. Electrical System Components
- J. Patient compartment Illumination
- K. Electrical Generating System
- L. Warning Lights and Siren System
- M. Door Latches, Hinges and Hardware
- N. Static Load Test
- O. Patient Compartment Interior Surfaces
- P. Oxygen System Test
- Q. Oxygen Cylinder Restraint Test
- R. Litter Fastener and Anchorage

- S. Suction Aspirator System
- T. Heating Criteria
- U. Air Conditioning Criteria
- V. Ventilation Criteria
- W. Patient Compartment Sound Level
- X. Patient Color and Markings
- Y. Manuals and Handbooks
- Z. Seat Belt Test
- AA. Electromagnetic Radiation and Suppression
- BB. Standard Miscellaneous Equipment
- CC. Miscellaneous Equipment

**27.0 EXCEPTIONS**

Exceptions shall be submitted as set forth in this document. This agency will accept proposals from any business entity proclaiming to manufacturer vehicle(s) to conform to this specification. Further, this agency will not deny the right of any manufacturer to present their product.

However, it should be noted, that any primary manufacturer that does not take exceptions shall produce the vehicle exactly as described. Failure to produce said vehicle may be grounds for this agency to pursue a resolution of damages through civil and criminal court.

**27.1 PRICING**

Item No.	Description	Qty	Unit Price	Extended
	<b>Purchase</b> of a 2016 or Latest Model Type III Ambulance with a Van Style Chassis with a 158” Wheelbase	12 EA	\$	\$
	<b>Lease</b> of a 2016 or Latest Model Type III Ambulance with a Van Style Chassis with a 158” Wheelbase	12 EA		

\* RDD (Required Delivery Date): December 15, 2016 or best/firm date.