

SPECIFICATIONS	BIDDER COMPLIES	
<p>SPECIFICATIONS FOR ONE (1) NEW, TYPE I FOUR WHEEL DRIVE CLASS I STAR-OF-LIFE CERTIFIED AMBULANCE</p> <p>The Emergency Medical Vehicle described in this specification is designed to meet or exceed the requirements of Federal Ambulance Specification KKK-A-1822 Revision E, and AMD Standards 001-009.</p> <p>NOTE: Throughout the written Federal Ambulance Specification KKK-A-1822, there are frequent references to items to be included WHEN SPECIFIED. The manufacturer will build into a given ambulance any WHEN SPECIFIED item, but such items may not be included in the attached specifications.</p> <p>This specification covers a new, commercially built surface emergency medical care vehicle herein after referred to as ambulance or vehicle. A vehicle in compliance with this specification shall be defined as a standard ambulance. This vehicle shall be in accord with the Ambulance Design Criteria of the National Highway Traffic Administration, U.S. Department of Transportation, Washington, D.C. This bid specification is based on the Federal Ambulance Specification KKK-A-1822E.</p> <p>The purpose of this document is to provide minimum specifications and test parameters for the manufacture of emergency medical care vehicles that meets the needs and desires of this agency. It establishes essential criteria for the design, performance, equipment, and appearance of the vehicle. All dimensions listed are given as the approximate sizes required to meet the needs of this department. The object is to provide a vehicle that is in accordance with nationally recognized guidelines. All vendors and manufacturers must meet all state and local regulations regarding the manufacturing, licensing, and sale of emergency rescue vehicles and ambulances within the state of South Dakota.</p> <p>This specification calls for the following type of vehicle. It is in accordance with paragraph 1.2.1 of KKK-A-1822E.</p> <p>Type I: Conventional Cab-Chassis with modular ambulance body.</p> <p>Class I: Four-rear wheel driven (4x4).</p> <p>Configuration B: Elevating cot and squad bench for ALS (see 3.1.5.1/3.15.3 of KKK-A-1822E).</p> <hr/> <p>This is an engineer design, construct, and deliver type specification and it is not the intention of this agency to write out vendors or manufacturers of similar or equal equipment of the types specified. It should be noted, however, that this specification is written around the specific needs of this department. With the intent to standardize certain components, specific brands have been specified in certain places. This has been done to establish a certain standard of quality and consistency in the departments vehicle fleet.</p> <p>The emergency medical care vehicles, chassis, ambulance bodies, equipment, devices, medical accessories, and electronic equipment to be delivered under this contract shall be</p>	YES	NO

standard commercial products that meet or exceed the requirements of this specification. The ambulances shall comply with all Federal Motor Vehicle Safety Standards (FMVSS) and Federal regulations applicable or specified for the year of manufacture. The chassis, components, and optional items shall be represented in the manufacturer's current technical data. Materials used in the construction shall be new and not less than the quality conforming to current engineering and manufacturing practices. Materials shall be free of defects and shall be suitable for the intended use.

EXAMINATION OF SPECIFICATIONS

It is incumbent on each manufacturer to be thoroughly familiar with the specification contained herein. Any exceptions to these specifications must be clearly pointed out. Otherwise, it will be considered that the items offered are in strict compliance with the written specifications and that the successful bidder will be responsible for delivering vehicles meeting these specifications. 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 on a separate page marked "EXCEPTIONS" 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. This agency reserves the right to determine compliance.

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

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

INFORMATION AND DESCRIPTIVE MATERIAL

The bidder must furnish all information requested in the spaces provided on the bid forms.

The manufacturer must submit evidence of compliance with KKK-A1822-E 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 manufacturer to provide this agency with certification required.

This agency also recognizes Ford Motor Company's Qualified Vehicle Modifiers (QVM) accreditation. Therefore, regardless of chassis specifications the manufacturer must include with this proposal their current QVM certification. The manufacturer must supply a web site address for the Ford QVM program certification list as proof that they are a current member of the Qualified Vehicle Modifier Program.

The manufacturer must also supply certification to the current revision of KKK-A-1822 specification for this particular type of vehicle, and at least one (1) complete set of sketches, descriptive literature, and complete specifications covering the products offered. Bids not meeting this requirement will be considered non-responsive and shall be rejected.

The manufacturer must provide proof of ISO 9001:2000 Certification.

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

NO EXCEPTIONS.

GENERAL LIABILITY

Bidders are required to submit with their bids a Certificate of Liability Insurance in the amount of ten million (\$10,000,000) US dollars that is based on a PER INCIDENT basis as issued by the bidders insurance company. This insurance shall be issued by a company rated "A" or better as reported in the current edition of Bests Key Rating Guide, published by Alfred M. Best Company, Inc. Aggregate liability coverage will not be considered regardless of amount. Failure to comply will be deemed non-responsive.

PRE-CONSTRUCTION CONFERENCE

The successful manufacturer shall be required to hold a pre-construction conference with representatives of this agency to finalize outstanding construction details. This conference will be held at this agency and shall be held before construction is started.

PRE-DELIVERY INSPECTION

The successful manufacturer shall be required to facilitate a pre-delivery inspection of the vehicle bid with representatives of this agency. This inspection shall take place at the manufacturer's location in a temperature controlled inspection area separate from the production facility. The manufacturer shall provide adequate transportation, lodging, and meals for two (2) designated personnel from this agency to conduct this inspection. Further, if the location is in an excess of three hundred (300) miles from this agencies location, the transportation shall be by a commercial air carrier.

DRAWINGS

The manufacturer shall provide an accurate set of line drawings that accurately depict the vehicle(s) as specified. The drawings will show all exterior and interior planes with dimensions. Failure to comply will be deemed non-responsive.

Unless otherwise requested, the manufacturer shall arrange over the road delivery of the completed vehicle(s) to this agency's designated local address under the vehicles own power. Costs of transportation and preparation are to be included with the price as bid.

Payment in full shall be processed after delivery and once a final acceptance inspection of the vehicle(s) by this agencies authorized representative(s) confirms compliance with the specification.

WARRANTY

The successful manufacturer shall provide a twelve (12) month/12,000 mile warranty on the vehicles which covers defective parts and/or components, the improper choice of materials, parts, and/or components, improper design or engineering, and poor or improper workmanship or quality control techniques. The warranty shall cover the complete vehicle and shall include all costs for labor and parts or materials that are

required to correct all deficiencies. In addition, the manufacturer shall submit their various warranties and warranty options, if applicable, with the proposal for evaluation. Also, the manufacturer shall supply the name and phone number of a contact person in the event this agency requires clarification of the submitted warranty documents.

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.

There shall be provided a lifetime electrical warranty that covers all conversion circuit boards and harnesses.

There shall be provided a fifteen (15) year transferable modular body structural warranty. The term transferable is to cover the transfer of the warranty to a second purchaser should the department sell this unit later. The 15 year structural warranty period shall also remain in effect should the modular body be remounted onto a new chassis. This remount must be performed at a service center authorized by the original manufacturer.

There shall be a ten (10) year/50,000 mile paint warranty.

WARRANTY SURETY

To ensure quality, service, and full compliance to the above warranties, the ambulance manufacturer must construct the complete vehicle, with the exception of the chassis. Additional elements constructed and installed "in house" are required to ensure service and parts availability. Subcontractors or lease/rental agreements to outside agencies will fail to meet this requirement.

NO EXCEPTIONS WILL BE ALLOWED.

- Does the ambulance manufacturer as the prime contractor construct the modular body?
- Does the ambulance manufacturer as the prime contractor apply paint?
- Are interior cabinets constructed and installed by the ambulance manufacturer as the prime contractor?
- Are the wiring harnesses, circuit boards, and oxygen systems assembled, installed and tested by the ambulance manufacturer as the prime contractor?
- Is the upholstery for seat cushions, head pads, and backrests assembled and installed by the ambulance manufacturer as the prime contractor?

SERVICE FACILITY

The successful bidder must have access to a service facility. Bidders must list below the nearest service facility and parts department to the purchaser.

Facility Name: _____

Address: _____

Phone Number: _____

Contact Name: _____

Appx. miles from agency: _____

Due to the high demands on a pre-hospital care vehicle, this agency requires that the primary manufacturer have available, a twenty four hour a day technical assist service. This 24/7 service must be staffed by the manufacturers service personnel.

Include phone number: _____

QUALITY ASSURANCE

To ensure the purchaser that proper engineering and production control guidelines have been implemented, the ambulance manufacturer shall employ an integrated quality and process control program including specific process controls for facets of the manufacturing process deemed to be "critical." These critical elements of the process shall be documented and that documentation shall be available not only to manufacturing personnel but also customers who visit the manufacturing facilities.

The critical elements shall be denoted on the vehicle control document, which accompanies the vehicle through the manufacturing process. A sample of this document shall be available to the purchaser upon request. A continuous series of inspections shall be performed and signed off on the vehicle control document and shall include but not be limited to the following:

Visual inspection of the body, welds, and exterior attachments.

Visual and mechanical inspection of the heater/air conditioning lines, cables, grommets, valve connections, clamps, mounting brackets, belts, etc.

Visual inspection of cabinets, sliding/hinged cabinet doors, moldings, flooring, walls, headliner, and cushions.

Visual inspection of exterior paint, decals, and lettering.

Operational inspection of all electrical systems. This must consist of tests of battery voltage, electrical load tests, alternator output, beacons, flashers, siren, interior lighting, compartment lighting, power exhaust vent, scene lights, load lights, chassis lights, silent signal lights/buzzer, heat/cool unit, and any optional electrical devices as furnished by the manufacturer.

The current requirements of each device tested must be noted on an inspection sheet together with the total current requirements.

The oxygen and vacuum systems shall be tested both prior to and after installation to meet the requirements as listed in those individual sections of this specification. Test data indicating temperature, pressure, timing, flow, etc., shall be recorded.

All chassis fluid levels shall be checked and filled to capacity. All doors, locks, windows, tires, etc. shall be inspected for proper operation and/or condition.

The completed vehicle(s) must be test driven a minimum of five (5) miles on paved highways and on rough terrain to check handling, brakes, acceleration, and noises. A water spray test and visual inspection shall be performed after the road test.

The primary manufacturer shall employ a full time Quality Control Manager whose primary function is to monitor quality.

NO EXCEPTIONS

STATEMENT OF FACT

The following shall be provided by the manufacturer and dealer to ensure that the manufacturer is capable of building the units per the specifications:

- 1) Statement of fact, signed by an officer of the manufacturing company, disclosing that the manufacturer has delivered two hundred (200) ambulances within the last twelve (12) months of the date of this bid.
- 2) The size and location of manufacturing facilities and the number of production staff.
- 3) Interior pictures to verify plant facilities.
- 4) A list of on-site engineering staff with educational accreditation.
- 5) Statement of loaner vehicle policy by the dealer.
- 6) Statement of on-site service, 24/7 service, out of service policy by the dealer .

Failure to provide this information with the documentation required will be deemed non-responsive. **NO EXCEPTIONS.**

GENERAL VEHICLE DESIGN, TYPE, AND FLOOR PLAN

The ambulances and the allied equipment furnished under this specification shall be the manufacturer's current commercial vehicle of the type and class specified. The ambulance shall be complete with the operating accessories as specified herein and furnished with such modifications and attachments as may be necessary or 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. The term "HEAVY DUTY" as used to describe an item shall mean in excess of the usual quantity, quality, or capacity that is normally supplied with the standard production vehicle or component.

COMPLETED VEHICLE DIMENSIONAL PARAMETERS

The vehicle furnished shall comply approximately with the following dimensions at curb weight:

- Length, Overall (including rear step) 259"
- Width, Exterior (excluding mirrors) 95"
- Wheelbase 165"
- Height, Rear Loading 33"
- Height, Ground to Step 19"
- Ground Clearance 8"
- Length, Patient Compartment Interior 154"
- Aisle Space with Cot Installed 12"

CURB WEIGHT

The curb weight is the total weight of the complete ambulance and is defined as the chassis, cab, body, and minimum required equipment as required by KKK-A-1822E, and includes a full compliment of fuel, lubricants, and coolant.

PAYLOAD ALLOWANCE

A minimum of 1,700 pounds will be allowed over and above the curb weight for personnel, patient, and miscellaneous support equipment.

INTERIOR HEADROOM

A minimum of 68" of interior headroom shall be provided inside the patient area of the body. It shall be free of obstructions for the occupants safety and shall meet or exceed all transportation and regulatory requirements.

TECHNICAL REQUIREMENTS CAB/CHASSIS

The ambulance shall be a Type I, Class I four wheel drive and shall have a chassis furnished with a two-door cab. The cab/chassis shall be suitable for subsequent mounting of a modular (containerized) transferable equipped ambulance body conforming to the requirements specified herein.

Per statute, the City has made a written determination that a Dodge chassis is the sole brand which will meet the City's needs. A copy of the City's written determination is part of the file and will be provided or otherwise made available upon request.

2011 Dodge Ram 4500 HD Chassis ST/SLT

4x4 Regular Cab 168.5" WB ST/SLT

Powertrain

Cummins 6.7L I-6 OHV direct diesel injection 24 valve intercooled turbo diesel engine

- * 220 amp HD alternator
- * 750amp HD battery
- * Engine block heater, engine oil cooler, transmission oil cooler
- * 6-speed electronic automatic transmission with overdrive, lock-up, driver selection
- * Rear-wheel drive
- * Limited slip differential, power take-off provision
- * 4.44 axle ratio
- * Stainless steel exhaust

Steering and Suspension

Hydraulic power-assist re-circulating ball steering

- * 4 wheel disc brakes with front and rear vented discs
- * Non-independent front suspension
- * Front leading link suspension
- * Front anti-roll bar
- * Front coil springs
- * HD front shocks
- * Rigid rear axle
- * Rear leaf suspension
- * HD rear anti-roll bar
- * HD rear leaf springs
- * HD rear shocks
- * Front and rear 19.5" x 6.00" argent steel wheels
- * 225/70R19.5 BSW AS * Underbody w/crankdown mounted full-size steel sparewheel

Safety

4-wheel anti-lock braking system

- * Daytime running lights

- * Dual airbags, passenger side front-impact cancellable airbag
- * Front height adjustable seatbelts with front pre-tensioners
- * Sentry Key ignition disable, panic alarm

Comfort and Convenience

Air conditioning

- * AM/FM/Satellite-capable, clock, seek-scan, in-dash mounted single CD, 6 speakers, fixed antenna
- * Cruise control with steering wheel controls
- * Power door locks with 2 stage unlock, keyfob (all doors) keyless entry
- * 2 12V DC power outlets, retained accessory power, ashtray, front lighter element(s) location
- * Analog instrumentation display includes tachometer, oil pressure gauge, engine temperature gauge, voltmeter gauge, engine hour meter, compass, exterior temp, systems monitor, trip computer, trip odometer
- * Warning indicators include engine temperature, low oil level, low coolant, lights on, key in ignition, low fuel, low washer fluid, bulb failure, door ajar, service interval, brake fluid, turn signal on, transmission fluid temp
- * Steering wheel with tilt adjustment
- * Power front windows with light tint, driver 1-touch down
- * Variable intermittent front windshield wipers, sliding rear window
- * Dual illuminated vanity mirrors
- * Auto-dimming day-night rearview mirror
- * Interior lights include dome light with fade, front reading lights, illuminated entry
- * Mini overhead console, glove box with light, front cup holder, instrument panel bin, driver and passenger door bins

Seating and Interior

Seating capacity of 3

- * 40-20-40 split-bench front seat with adjustable head restraints, center armrest
- * 4-way adjustable driver seat
- * 4-way adjustable passenger seat
- * Premium cloth faced front seats with vinyl back material
- * Full cloth headliner, full carpet floor covering with carpet front floor mats, deluxe sound insulation, metal-look instrument panel insert, plastic/rubber gear shift knob, metal-look door panel insert

Exterior Features

Side impact bars, front license plate bracket, fully galvanized steel body material

- * Gray/black fender flares
- * Black side window moldings, black front windshield molding
- * Black door handles
- * Chrome grille
- * 2 doors
- * Trailer harness
- * Driver and passenger power remote black convex spotter folding outside mirrors
- * Front chrome bumper with front gray rub strip/fascia accent, front tow hooks
- * Aero-composite halogen headlamps with delay-off feature
- * Additional exterior lights include cab clearance lights, underhood light
- * Clearcoat monotone paint

Warranty

Basic..... 36 month/36,000 miles
Powertrain..... 36 month/36,000 miles
Corrosion Perforation..... 60 month/100,000 miles
Roadside Assistance..... 36 month/36,000 miles
Diesel Engine..... 60 month/100,000 miles
Transmission..... 36 month/180,000 miles

Dimensions and Capacities

Output 305 hp @ 3,000 rpm
Torque 610 lb.-ft. @ 1,600 rpm
Curb weight 7,607 lbs.
GVWR 16,500 lbs.
Front GAWR Weight 7,000 lbs.
Rear GAWR Weight 12,000 lbs.
Payload 8,890 lbs.
Front curb weight 4,456 lbs.
Rear curb weight 3,151 lbs.
Front axle capacity 7,000 lbs.
Rear axle capacity 13,500 lbs.
Towing capacity 18,250 lbs.
GCWR 26,000 lbs.
Length 259.3 "
Body width 79.6 "
Body height 80.2 "
Wheelbase 168.5 "
Cab to axle 84.2 "
Axle to end of frame 47.4 "
Front tread 76.0 "
Rear tread 73.6 "
Turning radius 22.9 '
Fuel tank 52.0 gal.

Packages

2GG Quick Order Package 2GG SLTOPT
4 Speakers; (HAA) Air Conditioning; Body Insulation; Bright Front Bumper;
Bright Grille; (P9) Cloth 40/20/40 Split Bench Seat; (CKE) Carpet Floor Covering; Color
Keyed Instrument Panel Bezel; Power Locks; Power Fold-Away Trailer Tow Mirrors;
Power Windows w/Driver One-Touch; Remote Keyless Entry; Sentry Key Theft Deterrent
System; SLT Badge

Emissions

NAS 50 State Emissions
OPT
(XKH) Clean Idle Emissions Label. . Includes the regions of CA, CT, DE, GA,
ME, MA, NJ, NY, NC, PA, RI, TX, VT.

Powertrain

ETJ Engine: 6.7L Cummins Turbo Diesel STD
Current Generation Engine Controller; Diesel Exhaust Brake; Electronically Controlled
Throttle; Overhead Console w/Trip Computer/EVIC
DG3 Transmission: 6-Speed Automatic Aisin AS68RC

(DMK) 4.44 Axle Ratio; Auxiliary Transmission Oil Cooler
DMK 4.44 Axle Ratio
DSA Anti-Spin Differential Rear Axle
Z4A GVWR: 16,500 lbs

Wheels & Tires

TUC Tires: P225/70R19.5F Mud and Snow tread
WP3 Wheels: 19.5 x 6.0 Steel STD
TBB Full Size Spare Tire 19.5 Steel Spare Wheel

Seats & Seat Trim

P9 Cloth 40/20/40 Split Bench Seat 40/20/40 Split Bench Seat; Stain Repel Seat Fabric

BLUETEC Diesel System Charge

BAJ 220 Amp Alternator INC
REF Radio: AM/FM Compact Disc
HAA Air Conditioning
AH2 Ambulance Prep Group (BAJ) 220 Amp Alternator; (DSA) Anti-Spin Differential Rear Axle; (XF6)
Voltage Monitoring Auto Idle Up Sys
OPT
XKH Clean Idle Emissions Label
NHK Engine Block Heater
CKE Carpet Floor Covering Front Floor Mats

ADA Light Group Ash Tray Lamp; Glove Box Lamp; Rear View Auto Dim Mirror;
Illuminated Vanity Sun Visor Mirrors; Underhood Lamp

GFD Rear Sliding Window

XF6 Voltage Monitoring Auto Idle Up Sys

Fleet Options

LM1 Daytime Running Headlamps OPT
Interior Colors For : Primary w/ST/SLT
D5 Medium Slate Gray OPT
Primary Colors For : Primary w/ST/SLT
PW7 Bright White Clearcoat OPT

REAR AIR RIDE SUSPENSION SYSTEM WITH LOWERING KIT

A Kelderman bolt on rear air ride system with lowering kit shall be installed on this vehicle. This system shall incorporate 2 Firestone airbags mounted over centerline of the rear axle on each side of the vehicle. The pinion angle of this system does not change, thus eliminating driveline vibration that results in overall poor ride and unnecessary body sway.

The manufacturer shall install a red, low air indicator light in the front switch panel and a dump cancel switch by the passenger rear entry door.

The unit shall dump with the opening of one of the rear entry doors and with the OEM dump switch in the dash.

This low profile system shall lower the ambulance to Federal Specification patient loading height. The ambulance manufacturer will inflate the bags to the recommended manufacturer's requirements prior to delivery.

NO EXCEPTIONS

TIRES

The vehicle shall be equipped with seven (7) wheels and tires. The tires shall all be a high quality factory supplied mud and snow tread design.

SPARE TIRE

A spare tire shall be provided and mounted on the rear wall of the exterior D2 compartment. It shall match the tires specified for the vehicle. Shelves or equipment trays provided in this compartment will be constructed to allow for easy access to the spare tire.

SHOCK ABSORBERS

Front and rear shock absorbers shall be heavy duty OEM supplied and installed.

ELECTRIC THROTTLE

An ETM80 High Idle Switch shall be preset to the proper RPM per the manufacturer's specifications.

APPOINTMENTS

The manufacturer's heaviest duty heating and air conditioning package must be used. The rearview mirror shall be day/night visibility type. The vehicle shall be equipped with dual electric multi-speed, delay windshield wipers and washer mechanism. The seatbelt/shoulder harness mechanisms shall be encased with a high impact plastic trim housing color keyed to match the driver's compartment. The balance of the driver's compartment trim shall be finished with laminate, carpet, and cloth backed vinyl trim panels with 3/8" thick high-density foam padding color keyed to match the rest of the driver's compartment.

CAB SEATING

The driver's compartment shall be provided with OEM dual cloth high-back captains chairs with armrests and chassis manufacturer standard features for the trim level selected.

HEADLINER

The cab headliner shall be OEM standard automotive cloth.

CAB SIGNS

One (1) "NO SMOKING OXYGEN EQUIPPED" and "FASTEN SEATBELT" sign shall be installed in the driver's compartment on the passenger side of the dash. These signs shall be engraved or molded plastic for durability.

CAB FLOORING

The cab flooring shall standard OEM supplied flooring with removable OEM floormats.

BULKHEAD CAB

The bulkhead cab shall be carpeted to match the dash color scheme

CAB WINDOW TINT

The side windows on the vehicle cab shall be tinted with high-performance lifetime warranty window tinting film to a light transmissibility of 35%.

MAP BOX

A high-quality map and glove box shall be provided and installed on the bulkhead wall and extending down between the driver and passenger seating positions behind the switching console. It shall have a minimum of three (3) dividers, two (2) glove receptacles and shall be easily accessible by either the driver or passenger. The dividers and the glove box covers shall be constructed from plexiglass. The dividers shall be angled downward so as to retain map books etc. when the vehicle is in motion.

BATTERY SWITCH

A TST Commander 357 transducer shall be installed. This system will have an integral timer pre-set to open the power circuit from the batteries to the main circuit board and interrupt power to all conversion functions after a determined amount of time when the chassis ignition is placed in the OFF position.

ENGINE BLOCK HEATER

The OEM chassis engine block heater shall be wired to the external 125-volt power source. An On/Off "Summer" switch shall be provided to allow the block heater to be turned off in warm weather and shall be mounted within easy reach behind the driver's seat.

WHEEL COVERS

Dicor Fast-Liner one-piece, stainless steel wheel simulators with attached lug nut covers and non-lug removal attachment systems shall be installed on all outboard wheels of the vehicle.

TIRE FILL VALVE EXTENSIONS

Dicor Air-Gard LS Series stainless steel braided valve extenders shall be installed on both the inside and outside rear tires of the dual rear wheel vehicle.

MIRRORS

The mirrors shall be OEM Power and Heated Telescopic Trailer Towing Mirrors with built-in convex mirrors.

FRONT TOW HOOKS

There shall be two (2) heavy duty tow hooks provided and installed on the bottom front frame members of the chassis. They shall be frame mounted and shall meet or exceed all standards related to towing capacities and performance.

VEHICLE WIRING

All insulated cable shall conform to SAE J1292 requirements and shall have type GXL high temperature thermoplastic insulation conforming to SAE J1127 and J1128. All wire shall be of a gauge size to carry 125% of the current required by the specific circuit without overheating. All wires are to be color coded and stamped with the function of the circuit every four [4] inches for the continuous length of the line. Where practical or required, all wires shall be routed in high temperature looms with a rating of 300 degrees Fahrenheit. All conductors shall be annealed copper with machine crimps. Wiring harnesses shall be installed and warranted by the vehicle manufacturer. **NO EXCEPTIONS WILL BE ALLOWED.** This system must meet or exceed AMD Standard 005, Ambulance 12-Volt DC Electrical System.

PORTABLE EQUIPMENT CHARGING CIRCUIT

Two (2) additional 12 VDC circuits for charging portable battery powered devices, i.e. suction units, hand lights, defibrillators, portable radios, etc. shall be provided. These circuits shall prevent discharge of chassis batteries by only permitting the charging of portable devices when the vehicle is either running or the battery conditioner/charger is connected to shore power (operational). This implies that a battery conditioner/charger is required as part of this specification. A minimum of 10-amp circuit breaker protection shall be provided for each circuit. These leads shall be clearly tagged, identified and shall be located, one (1) in the patient compartment and one (1) in the vehicle cab. These leads shall not be connected to power nor shall they have any connectors attached at either end. These circuits are intended for unspecified future use.

CIRCUIT PROTECTION

Circuit breakers and relays are to be mounted securely to the inside of the electrical control center located in the patient compartment forward of the technician seat backrest. This cabinet shall have a door large enough for complete and unobstructed inspection and maintenance, and shall hinge out of the way for free movement. The control center shall be large enough to house all circuit breakers, relays, flashers, and the medical isolator. Space for one (1) additional 15-amp single pole breaker shall be provided on the main electrical board.

All auxiliary circuitry shall incorporate overload protection devices of automatic or manual reset thermal breaker types with spade style plug-in connectors and shall continuously carry 100% of the rated capacity for a minimum of one (1) hour. Bosch, Potter & Brumfield, Hella, and Omron brand relays may be used. All circuit breakers and relays are to be spade mounted snap-in type for easy removal. The circuit board shall be screen printed with all circuits legibly numbered and labeled.

The electrical distribution panel must be a double-sided copper trace printed circuit board

with a double-sided laminated isolator. Terminal strips must be mounted on the board for connection of wiring harnesses. The printed circuit board must meet or exceed a polyclad layered glass epoxy NEMA GRADE FR-4 material, and meet or exceed UL-94-V-O flammability rating and MIL-P-13949F- 4B Specifications. The printed circuit board surface protection must be Dupont Vacrel "8000" Polymer and withstand the MIL-STD-810C Corrosion Test and the MIL-STD- 055110D Thermal Shock Test. Design must be interchangeable with model styles from vehicle to vehicle without modification to wiring or compartment construction. In addition to the main circuit board, there shall be additional boards of the same design to provide control, lighting, and indication for the compartment and entry doors. All wires and connectors shall be of like resistance materials. One (1) complete set of each size relay and circuit breaker shall be included and mounted next to the main circuit board.

CIRCUIT GROUNDING

Grounding must be accomplished by use of a full ground wire harness. All ground wires shall be white in color and stamped along their length with the word "GROUND" or lettering "GRND". Ground return connections shall be made to the chassis structure, protected from corrosion, and available for service. In no case shall the aluminum body be used as a ground return. Additionally, there shall be a minimum of five (5) ground points between the chassis and body components of the ambulance and the chassis frame. These critical ground points shall be established with crimped copper ring connectors and dual star washers at each end of the ground strap. Due to the application of undercoating these grounds require no specific labeling.

NO EXCEPTIONS WILL BE ALLOWED.

INSTALLATION AND PROTECTION

Wires must be grouped or harnessed where practical. Metal edges through which cables pass shall be protected with nonmetallic bushings or grommets. All auxiliary circuits shall be wired separate and distinct from the vehicle chassis circuits, color coded, and clearly numbered. All wire passing from the console head shall be encased in a heavy-duty loom. All wiring shall be clipped or otherwise attached at suitable intervals to prevent rubbing or chafing due to wire movement, vibration, etc.

All wiring must be stamped, color coded, labeled to indicate wire function, and conform to SAE 1292.

NO EXCEPTIONS WILL BE ALLOWED.

SEQUENCER / LOAD MANAGER

To prevent excessive loading or load spikes on the electrical generating system at system start up, a sequencer/load manager shall be integrated into the main circuit board for stepped control of the main master emergency functions. The sequencer shall sequence ON or OFF all master emergency functions at 0.5 second intervals.

The sequencer/load manager shall sequence specified loads ON, in the following manner:

1. Body Warning Lights
2. Patient Compartment Dome Lights

3. Patient Compartment HVAC
4. Front Light Bar

- 5. Intersection and Grille Lights
- 6. Rear Light Bar - if installed
- 7. Wig-Wag Headlights - if installed

When a "low voltage" situation is detected, an audible alarm shall sound and an indicator light shall illuminate signaling the situation. When the vehicle transmission is in PARK, the load manager shall shed emergency functions until the system output voltage and the amperage draw of the systems still in operation equalize. When in PARK and the vehicle PARK BRAKE is applied the High Idle Control System will activate to provide additional voltage for the system. If the "low voltage", (12.0 volts or lower) persists, the sequencer/load manager shall initiate the load shedding sequence at each 0.2 volt increment in the reverse order of these emergency functions.

NOTE: Vital medical equipment such as suction aspirator system and/or electric oxygen valve shall not be included in the load shedding sequence. These systems shall remain powered until total failure of the electrical generating system occurs.

LOW VOLTAGE MONITORING SYSTEM

There shall be installed, as an integral function of the ambulance conversion main power board, circuitry that continually monitors electrical system voltage. This system shall activate an audible alarm and a steady burn red LED warning light to indicate that system voltage has reached or fallen below 11.8 volts. There shall be included a switch to deactivate the audible alarm. The audible alarm, LED indicator light and the switch shall be located on an auxiliary control panel located in the drivers control console below the main switch panel.

DRIVER SWITCHING CONSOLE / FRONT SWITCH PANEL

A console of the highest quality and newest technology built by the manufacturer shall be built on the floor of the cab between the driver and passenger seats. The console will house the patient code lights and door open indicator lights. The ammeter, voltmeter, and battery indicator lights shall be located on a separate panel if possible. The ammeter, depending on equipment/chassis manufacturer specified, shall indicate the current flow to the batteries or from the alternator. The 12 volt voltmeter shall indicate the voltage of the batteries. An audible low voltage-warning device shall be installed with a reset cancel switch. This device shall sound whenever the voltage of the vehicle drops below 11.8 volts. This device shall automatically reset once the batteries are above 11.8 volts. A Datacon engine hour meter will be located near the bottom of the console on the driver's side and will be wired to ensure an accurate reading of running hours. Both the volt and ammeters shall be digital with LED display.

A Federal Signal brand LF Series "Littlelite" LED gooseneck map light shall be provided and installed on the passenger side of the console. This light shall have a manual "on/off" switch on the light itself.

The complete console, shall be free of sharp edges and molded to match the contours of the engine cover. It shall contain all emergency switches, module switching, and legends according to their function and have back lighting controlled by the headlight rheostat. The switches shall be Eurostyle, moisture resistant, rocker type, and shall be UL listed

and CSA approved. Switch terminals shall be 1/4" spade types. The switch legends shall be engraved plastic inserts. The back lighting shall light the words themselves rather than

the background. Back lighting shall be accomplished with electro-luminescent light strips for their benefits of consistent light output, low amp draw, and extended service life.

The console shall be constructed in such a manner to make it easily serviceable and the wiring harnesses and switches easy to disconnect and reattach.

The console shall be constructed and have sufficient space to facilitate professional quality installation of Department radio equipment and computer data terminal mounting equipment. The final configuration of the console and the placement of Department radios and other equipment in and on the console will be determined at the pre-construction meeting.

The console shall contain at a minimum, the following features:

Master	Patient Status Indicator Lights
Primary/Secondary	Patient Door Open <u>Red</u> Light (and audible signal)
Front Lightbar/Lights	Rear Domes
Rear Lightbar/Lights	Compartment Door Open <u>Amber</u> Light (and audible signal)
Backup Alarm Disable	Hourmeter
Horn/Siren	[2] Ammeters
Leftside Scene Lights	Voltmeter
Rear Load Lights	Battery Indicator Lights
Rightside Scene Lights	Module Disconnect
Spare Switch	

Two (2) 12 volt power point style outlets shall be installed in the console for supplying power to cell phone chargers and other equipment. Exact location will be determined at the pre-construction meeting. Two (2) cup-holders shall be installed on/in the console, exact location will be determined at the pre-construction meeting.

Additional switches and switch heads shall be added to the console when specified in this document.

VOLTMETER/AMMETER DISPLAY

A pre-calibrated LCD Voltmeter/Ammeter display easily seen in low ambient light conditions as well as direct sunlight shall be wired to the battery system and included in the front switch panel. The voltmeter shall operate within a voltage range of +8 to +16 Vdc and shall measure voltage from 0 to 20 Vdc. There shall be one (1) ammeter display and the ammeter range shall be from -300 to +300. This instrument shall also include a built in audible and visual low battery alarm to alert the driver and passenger of a low battery situation. This display shall exceed the requirements set forth in KKK-A-1822F Paragraph 3.7.6.2.

BATTERIES

There shall be two (2) INTERSTATE brand 31 ECL 12 volt batteries supplied. They shall total not less than 1,400 CCA. Both batteries shall be located in the OEM location, under the hood. Battery cables shall be upgraded to a minimum of 3/0 AWG.

This is required to maintain compliance with SAE J541 specification for starter motor circuit voltage drop for heavy duty applications.

There should be NO battery disconnect switches or devices installed that in any way cut-off power to the chassis. Any battery disconnect devices should interrupt power to the ambulance module only. There shall be a battery switch with a five-minute timer that secures power to the conversion module once the ignition has been turned off.

The battery system shall be wired in accordance with KKK - A1822 - E and current Ford Motor QVM specifications. The system must meet SAE J541 for starter circuit voltage drop.

INTERNAL 12 VOLT DC POWER

For certain standard internal 12-volt DC power circuits, there shall be circuit protection provided by the use of manual reset breakers mounted in the outboard panel of the driver's seat base or other easily accessible location. Potter & Brumfield 12 VDC breakers shall separately protect the radio power circuit with a 40-amp breaker; the constant power circuit with a 20-amp breaker; the auto-throttle system with a 10-amp breaker; and the Isolator circuit for the two (2) additional 12 VDC charging circuits required a 20-amp breaker. Due to the potential danger associated with a separate "battery hot" circuit, no exceptions to the above will be allowed. This Isolator circuit includes a "low voltage" Schottky Diode to isolate medical equipment batteries from any electrical loads. The diode shall be located and electrically connected between the circuit breaker and the receptacles. Additional breakers may be added for optional equipment such as power door locks, multiple radio installations or compressor pumps.

PATIENT COMPARTMENT INTERIOR POWER OUTLET

One (1) 12 volt power point style outlet shall be installed in the patient compartment. It shall be installed in the rear of the front half of the action area overhead cabinet (power for Smithworks IV warmer). Exact location will be determined at the pre-construction meeting

115 VOLT AC POWER

There shall be 115 volt AC wiring furnished. A three-wire system is used for powering medical equipment, battery charger, etc. This electrical system, including wiring and associated equipment, shall comply with AMD STD 009, 120V AC Electrical Systems. The system shall incorporate a hospital grade GFI (Ground Fault Interrupt) device with a 20 amp circuit breaker that can also be used as a disconnect switch for the interior 115 volt outlets. The GFI device shall be located on the street side in the action area. An automatic transfer switch for the inverter shall be furnished which will automatically turn off the inverter 115 volt supply when the 115 volt utility shoreline power is applied.

INVERTER

A Vanner, model #20-1050CULW inverter/battery conditioner/charger shall be provided and installed either on a high shelf in compartment D2 or in cabinetry underneath the primary action area or the electrical panel. Exact location will be determined at a pre-construction meeting. An ON/OFF switch for the inverter shall be provided in the patient compartment primary action area.

EXTERIOR SHORE POWER / VOLTAGE INDICATOR

There shall be a Kussmaul 115 volt "Auto-Eject" plug rated at 20 amps or more with a spring-loaded cover assembly, UL listed for exterior use, located on the left side of the

ambulance body close to the driver's door. The plug shall be equipped with a Dynamic Disconnect Switch. This shall energize the vehicle's 115 volt AC circuit from an exterior power source. This connector must be labeled: "115 volt AC, 60 Hz, 20 amp power supply".

There shall be a weatherproof Kussmaul bar graph voltage display installed on the exterior body by the shoreline connection. This display shall indicate battery line voltage.

There shall be an easily visible blue LED "Shoreline Active" light on the switching console.

There shall be a weatherproof 1" round blue LED light over the Kussmaul Auto Eject. This light will illuminate when 110 volt shoreline power is active to the vehicle. There shall be a weatherproof engraved plastic label over the light to read (SHORE LINE POWER ON).

PARK BRAKE ENGAGED LIGHT

There shall be a red LED "Park Brake Engaged" light mounted on the left A pillar that illuminates when the park brake is engaged. This light shall intrude minimally into the cab interior. There shall be an engraved plastic label near this light that reads "PARK BRAKE ENGAGED"

INTERIOR 115 VOLT AC OUTLETS

There shall be five (5) three-wire duplex 115-volt AC hospital grade receptacles. Two [2] shall be located in the primary action area, two [2] in the rearward second action area, and one [1] over the squad bench toward the rear. There shall be red indicator lights located within each 115-volt outlet to indicate a live "hot" circuit. Add-on style indicators are not acceptable. The receptacles shall be clearly labeled: "115 VAC". The outlets shall be labeled using a high quality screen printing to avoid accidental removal.

ELECTRICAL EQUIPMENT

All electrical equipment shall be electromagnetic radiation suppressed, filtered, or shielded to prevent interference with radio and telemetry equipment. The RFI shall not exceed SAE J551 limits.

SPOTLIGHT

There shall be one (1) hand-held spotlight rated at 400,000-candle power or higher hardwired and located behind the driver seat. The spotlight must be weatherproof, corrosion and chip resistant, have a non-glare bulb, and have a momentary "ON" switch. The curly cord shall be capable of extension to a length of approximately 5-feet to allow for use by either the driver or passenger. A hanger for the spotlight shall be shipped loose for installation by this agency.

SIREN / PUBLIC ADDRESS SYSTEM

A combination siren and public address system shall be provided and mounted in the auxiliary panel of the driver's control console to the right of the driver. This unit shall be a

Whelen Model WS-295-HFRS, with remote amplifier and noise canceling microphone. The remote amplifier shall be located behind the face of the drivers console. Sound patterns generated by this siren shall at a minimum consist of wail and yelp modes and

shall be emitted through its own matched pair of 100 watt rated speakers.

This system shall function through both the horn ring and manually at the siren control head. Plug-in connectors shall be used between the front control console and the main harness for ease of electrical maintenance and quick access to the engine cover by removal of the console. The public address function shall be powered with the same switch as the siren functions but have a separately controlled volume function. The noise canceling microphone shall be hard wired to the control head and have a mounting bracket shipped loose with the completed vehicle.

ELECTRICAL SIREN

A Federal Signal, model #E-Q2B electronic siren shall be mounted (recess mounted if possible) into the front bumper area. It shall sound exactly like the mechanical siren and shall be activated by the appropriate Federal Signal switch panel, mounted within easy reach of the driver and passenger on the control console. This siren shall have it's own 200 watt rated single speaker or a matched pair of 100 watt rated speakers.

SIREN SPEAKERS

Cast Products, Inc. dual speaker systems shall be provided and used where possible. Each speaker driver shall be rated at 100 watts output. All siren speakers will be mounted either under or recessed into the chassis front bumper. No speakers shall be mounted on top of the bumper. Grille guard may possibly be used as an alternate mounting location. Final location will be determined at pre-construction meeting.

AIR HORNS

A Buell 5440 air horn system with two chrome horns shall be installed under/in the front bumper. Final location will be determined at pre-construction meeting. The air horns shall be powered by a 12-volt compressor & a dual air reservoir kit installed by the manufacturer. A check valve shall be installed between the air horns and the air reservoir to prevent depletion of the air reservoir. Air horn compressors and solenoids shall not be placed under the vehicle, they will be installed either in an exterior compartment or inside the vehicle to protect them from the elements of weather.

A horn ring three-position switch shall be provided to activate the air horn(s). It shall also activate the vehicle horn and siren.

BACKUP ALARM

An EC 250 backup alarm shall be installed on a floor structural member at the rear of the ambulance. This alarm shall activate whenever the ambulance is put into reverse gear. There shall be a momentary switch in the driver's switch console that will cancel the alarm. The system shall have an automatic reset to activate the alarm the next time the vehicle is placed into reverse. When activated, this alarm shall generate an intermittent warning tone at a minimum of 97 dB as prescribed by KKKK-1822E.

EXTERIOR LIGHTING

Exterior lighting shall conform to FMVSS 108 and consist of halogen headlights, ICC LED clearance lights, parking lights, hazard warning lights, license plate lights, tail, stop, and

backup lights. Tail and stoplights shall have red, clear, and amber lenses. Electrical wires for the taillights shall be sealed and or encapsulated to protect them from the elements of weather.

There shall be, included with the bid, evidence from the lighting manufacturer that all specified warning lights meet the photometric and chromaticity requirements of the current version of KKK-A-1822 as certified by a third party testing entity.

Fourteen (14) LED ICC/DOT lights shall be provided and installed on the upper ambulance module body. Each light shall be LED type with a protective chrome bezel if not built into the body. Two (2) each shall be installed on the side upper body corner extrusion areas. Five (5) shall be installed on the rear and front upper body corner extrusion area.

Tail and stoplights shall be red Whelen M6 Series Super LED with chrome Whelen flanges and red lens. The backup lights shall be clear Whelen M6 Series Super LED with chrome Whelen flanges and clear lens. Turn lights shall be amber Whelen M6 Series Super LED arrow turns with chrome Whelen flanges and amber lens. The tail/stoplights and backup lights shall be mounted on the rear kick plate. The amber turn lights shall be mounted low on the rear module body approximately 10" above the door grabbers. All LEDs and the electrical wires for the taillights and turn indicators shall be sealed and or encapsulated to protect them from the elements of weather.

Two (2) Red Whelen Super LED striplites (appx. 11.5" long) shall be mounted directly below the mid body mounted warning lights on the rear of the module body, one on each side. These shall be wired to the brake lights.

Amber Whelen M6 Series Super LED arrow turns with integral Whelen flanges shall also be installed on the front of the module body below the warning lights to indicate turns from the front.

SIDE BODY BRAKE/TAIL LIGHTS

Two (2) red Whelen M7 Series Super LED lights with red lenses and chrome flanges shall be installed on each side body at the rear. The lights shall have a steady-burn function in conjunction with the DOT lights and shall flash in conjunction with the turn signal lights.

FRONT WARNING LIGHTS

Four (4) Whelen M4 Series Super LED lights, each with a bezel or a chrome flange shall be provided in the front grille area, right side will be clear (white), left side will be red. Lens color shall be clear. These lights will double flash alternately. These lights may be mounted on the grille guard, exact location will be determined at pre-construction meeting.

Two (2) Whelen M4 Series Super LED intersection lights, each with a chrome flange shall be provided on the cab front fenders. These lights will be split red/clear with red forward. They shall have a clear lens and will flash alternately with the intersection lights mounted over the rear wheel wells.

FRONT WARNING LIGHTS

There shall be a series of seven (7) Whelen M9 Series Super LED lights provided and mounted across the upper front of the module body. These lights will replace the front lightbar. The color sequence from left to right will be as follows:

Red – White – Red – White – Red – White – Red

Lens colors shall be clear on all lighthoods. These lights shall have chrome flanges. Similar color lighthoods in the light row will flash alternately. LEDs will all double flash.

SIDE BODY WARNING LIGHTS

Four (4) Whelen M9 Series Super LED side body lights with chrome flanges shall be provided and mounted one (1) in each upper corner on both sides of the body. The lens colors shall be clear on both the streetside and curbside light sets. These lights will double flash alternately when viewed from one side of the body.

Two (2) Whelen M7 Series Super LED intersection lights, each with a chrome flange shall be provided and mounted one (1) directly above each rear wheel well. These lights will be split red/clear with red forward. They shall have a clear lens and will flash alternately with the intersection lights mounted on the front fenders.

SCENE LIGHTS

There shall be four (4) Whelen M9 Series Super LED scene lights and chrome flanges provided. Two shall be mounted on each side of the body. Each side shall be independently lighted and switched separately in the driver's switch console. These lights shall not be less than 75 inches above the ground and shall not be obstructed by any open doors.

The two (2) curbside scene lights shall activate when the side entry door is opened and the (2) rearmost scene lights shall activate when the vehicle is placed in reverse.

WHELEN PIONEER PLUS SCENE LIGHTS

There shall also be two (2) semi-recessed Whelen Pioneer Plus PFP2 Super LED recessed scene lights installed. One shall be mounted on each side of the module body equidistant between and at the same level as the Whelen scene lights. The housing shall have a chrome flange and shall facilitate a downward angle to the light. Each side shall be independently lighted and switched separately in the driver's switch console. There will be no activation from door opening or gear changes.

REAR WARNING LIGHTS / LOAD LIGHTS

There shall be a series of seven (7) Whelen M7 Series Super LED lights provided and mounted across the upper rear of the module body, these lights will replace the rear lightbar. Five (5) of these lights will be warning lights and two (2) will be white/clear Whelen Super LED scene/loading lights. The load lights shall illuminate the area surrounding the back loading and unloading doors. The lamps shall project downwards from the horizontal plane. 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.

All of these lights shall have chrome flanges. Lens color shall be clear. Similar color lights will flash alternately. The color sequence will be as follows from left to right:

Clear – Red - Clear load – Amber - Clear load – Red - Clear

Two (2) red Whelen M9 Series Super LED rear body lights with chrome flanges shall be provided and mounted in the mid-height position, one (1) on each side of the rear body so as to be visible through the rear door windows when the doors are open. The lens colors shall be clear. These lights will double flash alternately when viewed from the rear of the vehicle.

WHELEN LED ARROWSTICK

A Whelen 500 series Linear-LED Front load # TANF85 Eight Linear-LED 46 7/8" Arrowstick (Traffic Advisor) with TACTRLD1 LED control head shall be provided and flush mounted on the rear of the module body below the Whelen M7 Series warning lights. The control head shall be provided and mounted in the front console. It shall be wired to come on with the master emergency and set to "CENTER OUT" flash pattern.

WARNING LIGHT FLASH REQUIREMENTS

Within the flash pattern established for each light or light group by KKK-A-1822E, each emergency light shall flash on/off a minimum of 75 to 125 times per minute. Each light shall have a minimum of 20 square inches of illuminated viewing area. The flash pattern for the warning lights on these vehicles shall be as described in KKK-A-1822E, Section 3.8.2.1, Table 1. Compliance with this specification shall not be compromised in order to maintain a high level of conspicuity for 360-degrees around the vehicle.

LED FLASHER

Sufficient Whelen LED flasher capability with "Scan-Lock" technology shall be provided and mounted in an easy to service location to power and flash all LED lights as specified.

BODY CONSTRUCTION CHARACTERISTICS

The module body shall be a minimum of 150" long and 95" wide. All body panels, structures, and extrusions shall be fabricated of aluminum using alloys consistent with the load requirements of the vehicle. Unitized body construction will be accomplished by MIG welding all sheets, radius extrusions, corners, structural members, etc. together. All body surface aluminum side panels and roof panels shall be intermittently heliarc welded to body frame support members in such a manner as to provide maximum strength and durability without causing heat warp. All exterior metal-to-metal body seams or the area of attachment of one aluminum panel to another shall be heliarc welded. All such welds shall be ground smooth for proper paint adhesion and appearance.

The body structure shall be built and warranted by the vehicle manufacturer. **NO EXCEPTIONS WILL BE ALLOWED.**

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.

The manufacturer must have programs in place for continual modular body safety improvements. To this end, this agency requires proof that ongoing safety testing and evaluation of modular body safety programs are in place.

CERTIFIED WELDING PERSONNEL

To assure that the specified vehicle meets the letter, as well as the intent of the specification, the welding of body structure, chassis attachment points, doors, any aluminum or stainless steel components or attachments shall be performed by or directly supervised by personnel Certified by the American Standard Welding Association (ASWA). Those individuals shall have proof of current certification and shall make such proof available to the department upon reasonable demand.

CORNER EXTRUSIONS

To ensure weight support and structure durability in the event of an accident or impact, high strength corner posts must be used. A radius arched type aluminum extrusion is preferred. Corner posts that are a part of the exterior body skin will not be accepted as they may pull away at the point of impact. The extrusions must have a minimum strength of 29,000 psi.

ROOF

The roof shall be constructed of one-piece minimum .090" aluminum. This aluminum shall be a highly corrosion resistant alloy with a tensile strength range of a minimum of 28,000 to 33,000 psi. The roof substructure shall be constructed of a minimum of four (4) full-length sections welded to the roof for support. Those sections shall be a series of six (6) separate pieces running full length, front to back, bridging to the roof bow frame work. They shall be of equally spaced distance, inboard to outboard, of stair stepped sizes to form a crowned roof facilitating water runoff and ice build up.

The roof shall then be reinforced the entire length of the unit. For this reason, flat roofs shall be considered unacceptable.

There shall be in addition to the above supports, a minimum of twelve (12) cross members welded to the sections a maximum of 12" on center and be made of a highly corrosion resistant alloy with a tensile strength range of 31,000 to 35,000 psi. Aluminum plates shall be welded between the roof support channels to mount lighting fixtures, assist rails, hanging stretcher mounts, and IV holders. Corner gussets shall be heliarc welded to the roof extrusions to enhance roof load bearing characteristics. Horizontal corner extrusions shall be a minimum of .125" thickness and 2-1/2" radius. There shall be an integral drip rail formed into the extrusion. The horizontal extrusions shall use an interlocking method to secure the roof sheet into the envelope of the extrusion. Corner caps shall be a minimum of .125" cast aluminum and welded in place.

Only roof construction that meets or exceeds these specifications for strength and durability will be considered.

SIDES

The sides shall be constructed of a minimum of .125" aluminum sheets with a highly corrosion resistant alloy with a minimum tensile strength range of 28,000 to 33,000 psi.

The body shall have straight sides free of waves and welding warpage. Doorjamb shall be formed integral into the sidewall aluminum sheets. Each sidewall shall have a minimum of twelve (12) vertical wall studs a maximum of 12" on center and joined to the roof supports. The wall studs shall be a highly corrosion resistant .125 aluminum alloy with a

tensile strength range of 31,000 to 35,000 psi.

The body shall have core insulation in the walls and ceiling providing an insulation factor of minimally R-11. The insulation shall be fire retardant, non-settling, non-hydroscopic, and mildew and vermin proof.

Prior to installation of the insulation the entire interior body interior surface will be sprayed with a heavy protective coating of sprayed in latex rubber to provide sound deadening, vapor barrier and corrosion protection. Only side wall construction that meets or exceeds these specifications for strength and durability will be considered.

SIDE IMPACT PROTECTION REQUIREMENT

A continuous 8" x 2" side impact beam shall be welded to side body and sidewall extrusions to each side of the unit where the squad bench and CPR seats are located. This side impact beam shall allow for secure and customizable mounting points for the squad bench and CPR seat seatbelts. The side impact beam shall also provide additional structure and rigidity in these seating locations in the event of an accident. This side impact beam shall be constructed of minimum 8" x 2" x .250" thick 5052H32 aluminum. Seat belt backer plates welded or adhered in between the extrusions is unacceptable to this agency as this does not displace the energy of a side impact as effectively as a continuous side impact rail. Bidders must include a detailed description of their method of side impact protection for this department to adequately compare. **NO EXCEPTIONS.**

FLOOR

The body floor shall have a tubular frame structure with main members constructed of a minimum of .125" aluminum tubes, all being fully welded and gusseted. This framework shall be mounted using rubber gaskets to prevent contact of dissimilar metals. The tubular framing shall be an average of 12" on center. A minimum of a 3/4" thick aluminum plate shall be welded on top of the cushion rubber mounts installed full length of the body. This is necessary to add additional strength, ease in mounting, and ease in remounting the body later if necessary. There shall be plates welded into the floor structure to provide additional mounting support for the cot mounts and technician seat. The floor frame shall be plated the entire length with an aluminum moisture barrier mounted under the sub floor to act as a heat shield and vapor barrier.

The sub floor shall be a minimum of 3/4" plywood, sealed and fastened to the floor structure. This floor shall exceed the requirements set forth in AMD Standard 020 Floor Distributed Load Test for a bariatric cot (800 lbs.)

To further insulate and protect the patient compartment the ambulance manufacturer shall install 18 gage galvanized steel below the subfloor material to act as a heat shield. An 18 gauge galvanized steel sheet, with waterproof insulation laminated to it, shall be installed directly to the bottom of the floor tubes. This will create a sandwich style construction to further insulate the patient floor in the area of the muffler and exhaust system.

Only floor construction that meets or exceeds these specifications for strength and durability will be considered

DRIVE SHAFT GUARD

A square tube steel drive shaft loop or guard shall be installed just behind the front U-joint. This is designed to prevent the drive shaft from creating a dangerous situation such as hitting the ground or whipping in the event of a universal joint failure.

EXTERIOR COMPARTMENT DEPTH

All exterior compartments shall have a clear depth of approximately 18.5", except the backboard compartment which shall have an approximate depth of 20.5".

UNDERCOATING

There shall be a generous amount of undercoating applied throughout the undercarriage of the body and chassis. Undercoating must be applied according to chassis manufacturer guidelines.

FENDER INSULATOR

An additional insulator shall be provided and installed on top of the wheel well liner. This shall be a layered rubber and aluminum foil material to diminish the effects of noise created by road debris and provide additional thermal insulation for the patient compartment .

CAB CONNECTION - PASS THROUGH

The chassis cab shall be connected to the module through the use of an expanding closed cell EPDM rubber bellows covering the cab sliding window and the module sliding access window, which shall be approximately 14" high x 14" wide and shall have be trimmed in aluminum. The bellows shall be 2.75" wide in compressed state and capable of stretching to 4.250" without compromising its structural integrity. The bellows shall be held in place with integral 1050 cold rolled spring steel flexible cores on each edge. The water absorption rate of the material shall be less than 1% and have an operating temperature range of -40 degrees to +158 degrees F.

MOUNTING

The iso-mount technique shall be used to mount the ambulance body to the chassis frame. Mounting hardware shall consist of .750" x 6" 6061T6 aluminum bar stock body sill plates, ten (10) 7/16"-14 UNC threaded Grade 8 bolts, paired rubber isolators with steel cap and collared mounting nut for each mounting point. The bolts and rubber isolators are identical to the type used to mount the vehicle cab and are provided by the chassis manufacturer. Mounting holes in the top flange of chassis frame shall be those provided by the chassis manufacturer. The .750 " x 6" aluminum bar stock mounting plates shall be bolted through the upper mounting isolator above the upper frame flange with the OEM Grade 8 bolt. The bolt passes through and secures the second isolator below the flange with the collared nut. The body shall be lowered onto the sill plates and the body sub floor cross members shall be welded to the aluminum bar stock mounting plates. This combination of components provides the body a cushioned ride on top of the frame and

allows the body and frame to flex independently diminishing frame stress. This body-mounting configuration shall not prevent the vehicle from complying with the floor loading height requirement of KKKK-1822E for the specified type of emergency medical vehicle. Only mounting techniques that meet or exceed these specifications for strength and durability will be considered.

BODY DROP SKIRT

An appropriately sized drop skirt shall be incorporated into both sides of the module body to provide additional protection and an aesthetically pleasing appearance to the completed ambulance.

COMPARTMENT & ENTRY DOOR CONSTRUCTION

All exterior compartment and entry doors shall be constructed of a single piece of minimum .125" sheet aluminum. The use of extrusions for doors, doorjambes or door frames is not acceptable. The door profile shall be a double pan form of minimum 2.75" total thickness. In addition, for maximum rigidity, "C" channel bracing shall be added internally for additional door structural integrity. Each door shall have the seal installed on the outer door pan flange to assure maximum sealing surface and to protect the rotary latching mechanism from environmental damage. Access for maintenance to the latching mechanism shall be provided through minimum 2.0" holes located in the upper and lower outboard edges of the inner door pan panel. The inner door pan flange shall be formed to provide a recess in which the inner door liner panel is seated. Inner door liner panels shall be affixed to the flange with stainless steel, serrated spring washers and TX -25 Type F Torx-head machine screws. Each door shall be insulated with not less than 2.0" of spray foam. The insulation must be configured to prevent contact with or the fouling of the coated steel latch connecting rods. The interior door pan of each exterior door shall be stamped with a unique alphanumeric code denoting the specific size of that door. This code shall assure the quick and exact replacement of a damaged door. Only door construction that meets or exceeds these specifications for strength, durability and ease of maintenance will be considered.

COMPARTMENT DIMENSIONS

The following section represents the exterior compartment dimensions and accessories. The dimensions and accessories for these compartments were designed for the specific needs of this department. Minor exceptions may be taken in this section as not every manufacturer can meet each compartment to the exact inch. This department will require the dimensions of each compartment they are specifying if any exceptions are taken. If no exception is taken for the entirety of this section, it shall be expected by this department that the compartments will be as specified in this document.

**LEFT SIDE COMPARTMENTATION
FORWARD OF REAR WHEEL WELL - D1 AND D2**

A full height compartment (D1) shall be provided in the forward position ahead of the wheel well. It shall have approximate exterior dimensions of: 20" wide x 80" high.

The D1 compartment shall have a solid, flush mounted, vertically hinged door constructed of aluminum.

It shall have a single chrome, locking Tri-Mark paddle latch. The floor of the compartment shall be recessed downward to accommodate an oxygen and medical air bottle retention system.

An intermediate compartment (D2) shall be provided in the rearward position ahead of the

wheel well. It shall have approximate exterior dimensions of: 30" wide x 42" high.

The D2 compartment shall have a solid, flush mounted, vertically hinged door. Door shall be constructed of aluminum. It shall have a locking chrome, Tri-Mark paddle latch.

REAR OF WHEEL WELL - D4

An intermediate compartment (D4) shall be provided in the area rearward of the rear wheel well. It shall have the approximate exterior dimensions as follows: 35" wide x 60" high.

The D4 compartment shall have double solid, flush mounted, vertically hinged doors. The doors shall be constructed of aluminum. The D4 compartment shall have inside / outside access and two (2) adjustable shelves constructed of aluminum. A durable rubber floor mat shall be installed on the shelves. Each door shall have a single chrome, locking Tri-Mark paddle latch.

**RIGHT SIDE COMPARTMENTATION
FORWARD OF REAR WHEEL WELL - P1**

An intermediate compartment shall be provided in the upper, forward position ahead of the entry/egress door that allows easy access to the interior ALS cabinet. It shall have approximate exterior dimensions of: 18" wide x 65" high.

The P1 compartment shall have inside / outside access and two (2) adjustable shelves constructed of aluminum. A durable rubber floor mat shall be installed on the shelves.

The P1 compartment shall have a solid, flush mounted, vertically hinged door, constructed of aluminum. It shall have a single chrome, locking Tri-Mark paddle latch.

SIDE ENTRY DOOR

The entry/egress door shall be constructed of a minimum of .125" aluminum with a minimum .090" alloy aluminum diamond plate inner liner. Extruded doors and/or door frames/jamb are not acceptable. In addition, for maximum rigidity, bracing shall be added internally for additional door structural integrity. NO EXCEPTIONS WILL BE ALLOWED.

The door shall have a FMVSS approved chrome Tri-Mark rotary latch with a Tri-Mark locking handle and shall have a two-point rotary latch with adjustable Nader pins located on the side of the door. Each door shall have the seal installed on the outer door pan flange to assure maximum sealing surface and to protect the rotary latching mechanism from environmental influences. It shall also be equipped with a spring assisted two-directional cam-over door check. The door shall provide a clear opening of at least 32" wide and 68" high. When opened, the door shall activate the interior dome lights.

Each access door is to be stamped with an alphanumeric code, this will enable the exact replacement of a damaged door.

The inner door pan flange shall be formed to provide a recess in which the inner door liner panel is seated. Inner door liner panels shall be affixed to the flange with stainless steel, serrated spring washers and TX -25 Type F Torx-head machine screws. Each door shall

be insulated with not less than 2.0" of spray foam. The insulation must be configured to prevent contact with or the fouling of the coated steel latch connecting rods.

The door shall have two (2) Whelen 500 series Super-LED amber warning lights with flanges installed, one at the top and one at the bottom of the door. These lights shall be flush/surface mount, protrude no more than 1/2" from the door surface, be wired ignition hot only and activate and flash when the door is opened.

When open, a "patient door open" light shall illuminate on the drivers switching console and an audible signal shall sound. The highest quality available switches shall be used to activate lights.

STEPWELL

The patient compartment access door shall have a full aluminum diamond plate stepwell. The stepwell must have a full 18" deep step which allows for easy entry and egress, a 9" high riser and be 32" wide to match the width of the side entry patient compartment door. There shall be two (2) recessed, white LED lights installed that illuminate the stepwell when the side door and the rear entry doors are opened. Stepwell must be constructed to allow oxygen bottle storage without blocking the step.

SIDE ENTRY DOOR STEP

An automatic retractable step constructed of heavy duty Fire Grade cast aluminum with a non-skid surface shall be installed under the side entry door. The step shall be a Zico VS-24-9 and shall be wired into door interlock system to automatically extend with door opening and retract with door closing.

SIDE DOOR TRIM

The entry/egress door shall have a minimum .090" aluminum panel covered full height and full width with .028" formica, with color to match interior. It shall be impervious to moisture, easily cleaned, durable, and attractive. The door panels shall be designed to allow removal without disturbing the door latching hardware. Door panels must be flush fitting not overlay. The inner door panels shall be affixed to the flange with stainless steel serrated spring washers and TX-25 Type F Torx-head machine screws.

The lower 12" shall be faced with a bright finish aluminum diamond plate kick guard. The center shall have a reflective chevron covered stainless steel or aluminum section that is a minimum of 10" wide. The chevron colors shall be reflective red and orange. It shall be removable for ease of maintenance of interior door components.

The side entry/egress entrance door shall have a minimum 1" diameter polished or brushed stainless steel 45 degree ergonomic style assist handle.

SLIDING WINDOW

The entry/egress door shall be provided with an approximate 18" high x 19" wide horizontally sliding window. It shall have tempered, automotive, privacy tint safety glass and shall have a locking mechanism to keep the window panels in the desired position.

A screen shall be provided, to prevent airborne particles from entering the vehicle when

the window panels are in the open position.

REAR OF WHEEL WELL - P3 AND P4

A low compartment (P3) shall be provided in the forward area behind the rear wheel well. It shall have the approximate dimensions as follows: 24" wide x 21" high. The compartment shall have a removable 4" lip on the front edge of the compartment floor.

The P3 compartment shall have a solid, flush mounted, vertically hinged door constructed of aluminum. It shall have a single chrome, locking Tri-Mark paddle latch.

A full height compartment (P4) shall be provided in the rearward area behind the rear wheel well. It shall have the approximate dimensions as follows: 14" wide x 80" high.

The P4 compartment shall have a solid, flush mounted, vertically hinged door constructed of aluminum. It shall have a single, chrome, locking Tri-Mark paddle latch. The P4 compartment will include a minimum of two (2) dividers and a quality strap fastening system for backboards, scoop stretchers, etc.

REAR PATIENT ENTRANCE DOORS

Each rear patient entrance door shall be constructed of a minimum of .125" aluminum sheet with a minimum of a .090" alloy aluminum diamond plate inner liner. Extruded doors and/or door frames are not acceptable. In addition, for maximum rigidity, bracing shall be added internally for additional door structural integrity. The use of extrusions for doorjamb or doorjamb is not allowed. Each door shall have the seal installed on the outer door pan flange to assure maximum sealing surface and to protect the rotary latching mechanism from environmental influences. Access for maintenance to the latching mechanism shall be through 2.0" mounting holes located in the upper and lower outboard edges of the inner door pan panel. A rubber grommeted cap shall cover these access holes. The inner door pan flange shall be formed to provide a recess in which the inner door liner panel is seated. Inner door liner panels shall be affixed to the flange with stainless steel, serrated spring washers and TX -25 Type F Torx-head machine screws. Each door shall be insulated with not less than 2.0" of spray foam. The insulation must be configured to prevent contact with or the fouling of the coated steel latch connecting rods. The interior door pan of each exterior door shall be stamped with a unique alphanumeric code denoting the specific size of that door. This code shall assure the quick and exact replacement of a damaged door.

Each rear patient entrance door shall have a FMVSS approved chrome Tri-Mark locking handle keyed alike to the side entrance door. The rear streetside and curbside doors shall have two-point double rotary latches with adjustable Nader pins at the top and bottom with handles on the interior faces of the doors. When opened, the rear doors shall provide a clear opening of at least 59" high and 50" wide. Each rear door shall be equipped with a Cast Products "grabber" style door check, which shall be located at the bottom of the

door. When opened, the rear doors shall activate the interior dome lights and the rear exterior load lights. NO EXCEPTIONS.

Each door shall have two (2) Whelen 500 series Super-LED amber warning lights with flanges installed, one at the top and one at the bottom of the door. These lights shall be flush/surface mount, protrude no more than 1/2" from the door surface, be wired ignition hot

only and activate and flash when the door is opened.

When open, a "patient door open" light shall illuminate on the drivers switching console and an audible signal shall sound. The highest quality available switches shall be used to activate lights.

REAR DOOR TRIM

Each patient entrance door shall have a minimum .090" aluminum panel covered full height and full width with .028" formica, with color to match interior. It shall be impervious to moisture, easily cleaned, durable, and attractive. The door panels shall be designed to allow removal without disturbing the door latching hardware. Door panels must be flush fitting not overlay. The inner door panels shall be affixed to the flange with stainless steel serrated spring washers and TX-25 Type F Torx-head machine screws.

The lower 12" shall be faced with a bright finish aluminum diamond plate kick guard. The center shall have a reflective chevron covered stainless steel or aluminum section that is a minimum of 10" wide. The chevron colors shall be reflective red and orange. It shall be removable for ease of maintenance of interior door components.

The side entry/egress entrance door shall have a minimum 1" diameter polished or brushed stainless steel 45 degree ergonomic style assist handle.

FIXED WINDOWS

The rear patient entry doors shall each be provided with an approximately 18" high x 19" wide fixed window panel. Each window shall have tempered, automotive privacy tinted safety glass.

SIDE BODY WINDOW

A fixed, privacy tinted automotive safety glass window shall be provided in the right body side above the rear wheel well in the upper body side. It shall be approximately 36" wide x 18" high. This window shall have a sliding interior cover that is able to be closed to prevent the window from being seen through from the exterior. The cover shall have the ability to slide far enough open so the window is completely visible.

EXTERIOR COMPARTMENT FABRICATION

All exterior compartment walls and ceilings shall be constructed of a minimum of .090" smooth aluminum with .090" smooth aluminum floors, formed and heliarc welded. Exterior compartments are to be welded to both the inside wall vertical structure and floor structure components for strength and durability.

All exterior compartment floors, walls and ceilings shall be coated with LINE-X (or equivalent) commercial textured finish coating.

Color will be determined at the pre-construction meeting. Each floor shall have weep-hole baffles to prevent road water entry.

The P4 backboard compartment and dividers and D4 compartment interiors shall additionally be covered with a black cushioning material that will provide sound-deadening and prevent damage to backboards and equipment .

All exterior compartment doors shall be equipped with a high-quality gas charged hold open door check.

The floor and shelf of each exterior compartment shall be covered with Dri-Deck material that shall be black in color.

All exterior compartments will be provided with white recessed LED compartment lights that activate when the compartment door is opened. Compartments with shelves will have lights above and below the shelves.

EXTERIOR COMPARTMENT DOORS

Each exterior compartment door shall be constructed of a minimum of .125" aluminum sheet, with a minimum .063" alloy aluminum diamond plate interior liner. Extruded doors and/or door frames are not acceptable. In addition, for maximum rigidity, "C" channel bracing shall be added internally for additional door structural integrity.

The exterior face of the door and the door edges shall be formed from one [1] sheet of aluminum.

All doors shall be flush with the body side and shall be fully insulated.

When opened, the doors will activate their respective compartment lights. When any compartment door is opened, a "compartment door open" light shall illuminate on the drivers switching console and an audible signal shall sound. The highest quality available switches shall be used to activate lights.

All compartment doors shall be keyed alike.

Each access door is to be stamped with an alphanumeric code; this will enable the quick and exact replacement of a damaged door.

The inner door panels shall be affixed to the flange with stainless steel serrated spring washers and TX-25 Type F Torx-head machine screws (not Phillips head screws).

EXTERIOR COMPARTMENT DOOR HANDLES AND LATCHING

Door hinges shall be full length stainless steel #304-2B buffed and polished with a minimum of a 1/4" stainless pin and shall be fastened to the door and door frame with self-locking stainless steel screws. Hinges are to be of a slotted style with a round hole on each leaf of the hinge for permanent lifetime adjustment of the doors. Hinges shall be staked, not welded, every 4" to prevent pin from moving.

NO EXCEPTIONS ALLOWED.

The locking mechanism shall be a chrome Tri-Mark #13136 outside handle, a #13028 inside handle with a #12765-01 gasket for the external handle with #14229- 01 and

#14230-01 rotary latch and #10355U adjustable Nader pin. Latches shall be near flush with the door skin.

Each latch must be capable of being locked independently with an integral exterior key lock and a key matching the locks on the curbside and rear entry doors. The latch system is to be activated by the use of a plated steel rod with a single point threaded adjustment mechanism.

Systems operated by cables are unacceptable due to the tendency of cable to stretch or fatigue prematurely.

NO EXCEPTIONS WILL BE ALLOWED.

The latch and the Nader pin shall be mounted so as not to interrupt the continuous door seal. A hole shall be drilled into the edge of each door adjacent to the paddle handle. This lubrication access shall be sealed with a removable plastic cap for protection of the internal mechanism.

EXTERIOR OXYGEN COMPARTMENT VENT

One (1) #1031 Cast Products, polished aluminum exterior oxygen compartment vent shall be provided and installed on the door of the exterior compartment that houses the oxygen tank retention system. The vent hole shall be 3” in diameter and provide adequate ventilation for gaseous oxygen should a leak occur. A black plastic vent shall be provided and installed on the interior door liner covering the vent hole to protect it from intrusion by the elements when the door is open.

DOOR GRABBERS

A set of door Cast Products "Grabbers" shall be provided at the bottom of the rear patient entry doors. They shall be fastened to the door and module body with self-locking stainless steel screws. There will be sufficient “backing plate” material provided behind the doors and module body where the “Grabbers” are bolted to prevent any possibility of deformation of the sheet metal surface.

NO EXCEPTIONS WILL BE ALLOWED.

POWER DOOR LOCK SYSTEM - PATIENT AND SIDE ENTRY/EGRESS DOORS

The rear patient entry doors, side entry/egress door and ALS exterior door shall be equipped with a power lock that can be activated from within the cab. The switch shall be placed within easy reach of the driver.

HIDDEN POWER DOOR LOCK SWITCH

An additional heavy-duty, weatherproof power door lock switch shall be provided and installed in a front exterior location, hidden from obvious view. It shall be in addition to the switch installed in the cab to control the power door locks installed on designated compartment doors.

PATIENT COMPARTMENT POWER DOOR LOCK SWITCH

An additional power door lock switch shall be provided and installed in the patient compartment, within easy reach of the occupants. It shall be in addition to the switch installed in the cab to control the power door locks installed on designated compartment doors.

POWER DOOR LOCK ACTIVATION

The patient compartment door locks (rear patient entry and side entry/egress) shall be wired to the chassis power door locks.

STAINLESS STEEL DOOR SILL PROTECTION

There shall be a 20 gauge formed stainless steel compartment doorsill protection for all exterior compartments. The stainless protector shall be affixed with heavy duty double sided tape to the top surface of the doorsill and extend over the radius edge.

EXTERIOR COMPARTMENT ILLUMINATION

Each exterior compartment shall be illuminated with a recessed, white LED light module. These lights shall have clear lenses and be recessed into the compartment sides and/or ceiling above and below any specified shelf. Each door shall have an individual automatic switch to signal a "door or compartment open" condition and to turn on interior lighting when the door is opened. The switches shall be heavy duty, magnetic reed switches mounted in the door frame header interior inside of the protective door seal.

OXYGEN /MEDICAL AIR TANK MOUNT

Two (2) sets of fully adjustable stainless steel rings shall be provided to secure an "S" type oxygen tank and two (2) "Q" type Medical Air tanks in exterior compartment D1. (One system specifically designed to hold all tanks will be acceptable). The retention systems required shall consist of four (4) distinct sections including: (1) headpiece consisting of an angled, "U"-shaped plate with a retainer collar wing-nutted in place across the open "U" and one overlapping, hinged ring with wing-nut closure; (2) additional sets of hinged, overlapping rings; (1) fixed base plate with cylinder centering ring. The headpiece and ring sets shall be adjustable for height to accommodate cylinders of various dimensions. Vertical adjustment shall be accomplished by mounting these components with spring-nuts into an aluminum C-channel securely bolted to the wall of the compartment with Grade 8 bolts drilled and tapped into a minimum of a .250" aluminum plate welded to the inboard side of the compartment wall. This oxygen tank retention system must meet or exceed AMD Standard 003, Oxygen Retention System.

NO EXCEPTIONS ALLOWED.

ADJUSTABLE SHELF/FASTENING SYSTEM

Two (2) infinitely adjustable shelves shall be provided in the D4 compartment. They shall be easily adjusted to accommodate equipment/supply requirements. The D4 compartment shall also include a quality double strap fastening system to secure equipment stored in the lower half of the compartment

SAFETY REFLECTORS

A minimum of a 4.5" wide x 1" high red reflector shall be provided and installed on the inside, lower outboard area of each exterior door.

These reflectors shall warn oncoming traffic of an open door while on scene.

GRAB RAIL

An exterior style 16" polished stainless steel grab rail shall be installed on the curbside of the vehicle to the left of the side entry/egress door. The grab rail must be bolted to the aluminum side frame structure. A grab rail mounted to the body skin is unacceptable.

SIDE BODY SEAMS

All side center body seams are to be MIG welded, fully filled and body finished to create a smooth, blemish free surface for final finishing and painting.

REAR BUMPER

The rear step bumper shall be approximately 94" wide with a depth of approximately 10 1/2". The bumper shall be supported with a minimum of 3" steel angle subframe and have a minimum of 1/4" steel angle outer frame construction. The bumper shall be bolted to the chassis frame rails to reduce body damage and direct impact under the body, away from the patient area should a crash occur. 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 supports built into the bumper framing to reinforce the bumper end pods, which shall be removable, NO EXCEPTIONS. The height of the outer end pods shall be a minimum of 4" and have 3" radius corners. The top surface of the end pods shall be finished with a minimum of a 375" slip resistant raised pattern.

The center section of the bumper shall be approximately 8" x 46" x 2" of an open grate diamond back material and shall flip-up for ease in loading a cot. The aluminum step shall be bolted to the subframe with a minimum of 1/4" stainless steel bolts for ease of replacement.

The rear bumper shall meet the requirements set forth in the AMD Standard 018- Rear Step and Bumper Test. The bumper shall be able to accommodate a 500 lb. load with maximum deflection of 1-inch and no more than 1/4-inch permanent deformation

A minimum of a .125" alloy polished aluminum diamond plate kick plate shall be secured to the full width of the body between the step and the threshold. Two (2) heavy-duty cushioning bumpers shall be affixed to the kick plate to prevent damage from the flip-up section of the bumper. The kick panel shall be securely fastened with ceramic coated stainless steel screws to inhibit rust that could result from electro-lysis and run the full rear width of the module. The screws shall thread into threaded metal inserts in the body. Pop rivets or screws threaded into only the aluminum body are not acceptable.

One high-quality rubber dock bumper shall be installed on the rear face of each rear bumper pontoon.

TOW HOOKS

A pair of tow hooks shall be provided at the rear of the vehicle. They shall be frame mounted and shall meet or exceed all standards related to towing capacities and performance.

BODY HARDWARE

All lights and fixtures, all body hardware, all compartment and entry doors shall be mounted on the module body with stainless steel fasteners. All stainless mounting fasteners shall be dipped in or sprayed with electrolysis preventive solution before installation on the body. This is required to minimize the process of electrolysis.

NO EXCEPTIONS ALLOWED.

BODY PROTECTION

A full-length body rubrail shall be attached to both sides and extend at least 1-1/2" from the body below the compartment doors. This rubrail shall be a minimum of .100" alloy polished aluminum diamond plate. The rubrails shall be attached to the bottom of the body sill plate via a shearbolt system that will allow the rubrails to slide under the body and not damage the body sill plate should the vehicle be struck.

Two [2] heavy duty mudflaps shall be installed behind the rear dual wheels.

FUEL ENTRY

There shall be an approximate 7.75" x 7.75" cast aluminum fuel fill protector recessed into the body above and behind the streetside wheel well. Steel fuel fill protectors are not acceptable. This protective bezel shall be sealed to the body to prevent spilled fuel from seeping behind the bezel and shall have a rubber grommet hole to protect the fuel cap retention strap.

A "Diesel Fuel Only" decal shall be applied above the fuel filler.

RUNNING BOARDS AND GUARDS

To provide for increased road splash protection and ease of driver/technician entry and exit, polished aluminum diamond plate running boards shall be installed on the vehicle. The running boards shall incorporate front splash and stone guards and be tapered out to the edge of the chassis fenders and fastened. The material used must be a minimum of .090" alloy polished aluminum diamond plate.

Another slip resistant surface shall be incorporated on the raised diamond plates acting as double slip resistance in this potentially hazardous stepping area.

STONE GUARDS

The lower forward corners of the body shall have approximately 21" high minimum .063" alloy polished aluminum diamond plate rolled around the corner radius and terminated at the junction of the cab and the body.

The lower rear corners of the body shall have approximately 16.5" high minimum .063" alloy polished aluminum diamond plate rolled around the corner radius and terminated at the rear kick plate area.

FENDERETTES

Black rubber fenderettes shall be provided around each rear wheel well opening. They shall help diminish damage to the wheel well area of the body caused by stones and road debris

LICENSE PLATE

A Cast Products model #LP0002-1 rear license plate holder shall be recessed into the rear of the body on the driver's side between the kick plate and turn signal. It shall be constructed of polished cast aluminum and have two [2] top LED lights to illuminate the plate. The bezel shall be mounted to the body with stainless steel screws and include a .060" thick closed cell foam gasket to prevent moisture from seeping behind the bezel.

UNDERCOATING

Ziebart brand undercoating shall be liberally applied to the entire undercarriage of the chassis and vehicle body. Undercoating shall be applied according to QVM guidelines to a thickness between .062" to .125" as prescribed in KKK-A-1822E.

INTERIOR PATIENT COMPARTMENT COMPONENTS

Patient Compartment Sound Levels: This vehicle shall provide an interior working environment in which the ambient noise level is less than 80 dB as measured according to AMD Standard 006, Sound Level Test Code for Ambulance Compartment Interiors.

Patient Compartment Carbon Monoxide Levels: This vehicle shall provide an interior working environment in which the carbon monoxide level is less than 10 ppm as measured in accordance with AMD Standard 007, Carbon Monoxide Levels for Ambulance Compartment Interiors.

CABINET GLASS

All cabinet doors incorporating acrylic glass, as sliding or hinged doors/windows shall have a minimum of .250" thick smoked acrylic Plexiglas® as the standard material

CABINETRY

The cabinetry in the patient compartment shall have picture framed window face fronts fabricated from a minimum of 3/4" lightweight plywood material and laminated with a minimum .028" Formica. The shelves and the supporting structure shall be a minimum of 3/4" lightweight plywood material and laminated with a minimum of .028" Formica on both sides.

Non-supportive partitions shall be a minimum of 1/2" lightweight plywood material and laminated with a minimum of .028" Formica on both sides. Only cabinetry that meets or exceeds this specification for utility, durability, ease of clean-up and aesthetics will be considered.

All vertical outside corners and protruding edges of overhead storage shall be capped with a minimum of a 3" radius satin finish anodized aluminum moldings or color-keyed padded vinyl

NO EXCEPTIONS.

All interior Formica shall have a matte finish.

The interior corners of all cabinets will be sealed for ease of clean-up.

All cabinetry shall be sealed and molded to the floor with bright-anodized aluminum molding. All interior materials, cabinetry, vinyl, foam, and installation used shall meet or

exceed FMVSS 302 requirements on flammability of interior materials (where applicable).

LIGHTED CABINETS

All cabinets within the patient compartment shall be lighted. Cabinet lights shall be white low profile mini LED's and activated by a manual "on/off" switch in the rear switch panel. Cabinets with shelves will have lights above and below the shelves.

COUNTERTOPS

The countertop in the primary action area of the patient compartment shall be Corian brand material. It shall have a radius edge and shall be scratch and dent resistant. The countertop color in the primary action area shall be determined at a pre-construction meeting.

The countertop in the second action area of the patient compartment shall be Corian brand material. It shall have a radius edge and shall be scratch and dent resistant. The countertop color in the second action area shall be determined at a pre-construction meeting.

PATIENT COMPARTMENT LIGHTS

Patient compartment lighting shall consist of eight (8) dual intensity Whelen Super LED dome lights switched in the action area control panel. These lights shall have clear lenses, and shall be activated in separate banks. There shall be one bank of four (4) over the squad bench and one bank of four (4) over the primary cot.

Two (2) switches shall be provided in the action area console, (one [1] switch for each bank of lights) with high/off/low positions (no rheostats). There shall also be a switch in the drivers console that will activate the dome lights.

All seven (7) dome lights shall also be activated on "LOW" when either the side patient entry/egress door or rear patient entry doors are opened. There shall be a three-minute time delay to off system activated by the opening of the patient entry doors. This system shall be battery hot.

The entire light base shall be fastened securely to .090 aluminum backer plates located in the ceiling of the patient compartment. No ceiling light or attachment shall protrude into the patient compartment by more than 1-1/4".

Two flush mount (2) Thinlite brand 39" fluorescent lights shall also be provided and installed on the ceiling of the patient compartment. One (1) on/off position switch shall be provided in the action area console. The fluorescent lights will have the capability to be switched on when the ignition of the vehicle is off and the shoreline is plugged in. The exact location of these fluorescent lights will be determined at the pre-construction meeting.

An automatic timer system shall also be provided for the fluorescent lights. The system shall be preset to automatically turn the lights off after activating the on/off switch. The on/off switch shall be located on the patient compartment wall just inside and to the rear of the side entry/egress door. The timer shall be factory preset for deactivation after five or ten minutes. Deactivation time shall be determined at a pre-construction meeting after award of the bid.

CEILING HEADLINER

The patient compartment headliner shall be constructed of a durable, high-gloss white, plasticized Marlite, backed with a nonrigid plywood substrate material. The headliner shall be securely affixed to the roof bows and to the aluminum accessory plate welded to the roof structure. There shall be a full-length inspection access/wire race in the center of the ceiling, which provides access to the wiring harness and antennae bases/leads. The access shall have color-keyed easily removable padded vinyl covers.

Padded, color-keyed vinyl headliners may be accepted if the manufacturer proves that the headliner is durable, easily cleaned and free from stitching, seams, etc, that could trap blood-borne pathogens.

CONDUIT

A 1.5" flex conduit with pull wire and grommets stainless steel cover plate shall be supplied and mounted to the underside of the vehicle. It shall be run from the cab backward to the left side interior. Exact location of the conduit end plate shall be determined at the pre-construction meeting, depending upon final cabinet configurations.

FLOORING

The sub floor of the patient compartment shall be constructed of three (3) layers of different material each suited to a specific function in the floor structure. Over the aluminum structural floor tubes there shall be laid a single sheet of minimum .090 " smooth aluminum to function as a heat and vapor barrier. This sheet shall be sealed around its perimeter to prevent the incursion of environmental elements such as water and exhaust fumes. Over the vapor barrier there shall be laid a minimum of .750" 7-ply marine grade plywood. The marine grade plywood may be in two sections to accommodate the extended floor length of this vehicle. The small, added section shall be laid at the front of the floor and shall be in a low traffic area.

The plywood flooring and the underlying aluminum vapor barrier shall be attached to the structural floor tubes utilizing a minimum of 1.5"x 8 square drive floor screws. This attachment shall be made at a minimum of six (6) points across each floor tube and the width of the patient compartment floor. All screw insertion sites and the front panel juncture shall be filled and sanded to provide a smooth, solid surface for the vinyl top covering. Only floor construction that meets or exceeds these specifications for durability, sound deadening and exclusion to heat and vapor will be considered.

The final layer of the floor shall be commercial grade, heavy-duty, non-porous, non-skid flooring applied to the entire floor and roll-up in a one-piece seamless application utilizing a commercial grade contact adhesive recommended by the flooring manufacturer. This commercial flooring shall have minimums of nominal overall thickness of 2.03 mm.

This floor shall exceed the requirements set forth in AMD Standard 020 Floor Distributed Load Test for a bariatric cot (800 lbs.) Flooring structures not meeting this requirement will not be accepted by this department. **NO EXCEPTIONS**

There shall be a minimum 5" roll-up splash guard installed on the streetside cabinet wall and the squad bench face.

The 5" roll-up shall be supported by the installation of high-quality aluminum continuous extrusions along the floor at the base of the streetside cabinet wall and the squad bench base. The extrusion shall be radiused to form the curvature for the flooring and the flooring shall be terminated at the top of the extrusion.

All flooring and cabinet junctures shall be constructed so as not to easily allow any daily usage foot damage to the cabinet formica.

NO EXCEPTIONS.

A waterproof sealant shall be applied between the cabinetry and the floor at the cabinet and floor covering juncture.

REAR THRESHOLD

There shall be a minimum 6" wide, minimum 16 gauge formed, polished stainless steel threshold protector installed on the rear interior of the body. The protector shall run the entire width of the floor at the door opening and be sealed with a waterproof sealer to keep dirt and debris from accumulating under it. A 2" wide, adhesive-backed non-skid material shall be installed on the threshold piece to assist with safe entry and exit from the vehicle.

LOWER COLOR STRIPE

A lower accent stripe color on interior Formica shall be provided.

FLOORING TYPE AND COLOR

The flooring shall be LonCoin with a non-skid clear coat, color shall be determined at the pre-construction meeting. NO EXCEPTIONS.

SEATING SURFACE COLOR

Color of all seating surfaces within the patient compartment shall be determined at a pre-construction meeting.

CABINET DIMENSIONS

The following section represents the interior cabinet dimensions. The dimensions for these cabinets were designed for the specific needs of this department. Minor exceptions may be taken in this section as not every manufacturer can meet each cabinet dimension to the exact inch and vehicle manufacture parameters differ. This department will require the dimensions of each compartment being specified if any exceptions are taken. If no exception is taken for the entirety of this section, it shall be expected by this department that the compartments will be as specified in this document.

LEFT SIDE CABINERY

ACTION AREA

An efficient and accessible action area shall be located to the right of the attendant seat. Oxygen and suction/aspiration equipment outlets shall be readily accessible. It shall provide a counter for the technicians use. The countertop shall have a minimum of a 3/4"

lip to prevent items from falling or sliding off. The countertop in the action area Corian brand material. It shall have a radius edge (no foam padding) and shall be scratch and dent resistant.

The countertop color in the action area shall be determined at a pre-construction meeting.

For the technicians safety, the foremost vertical leading edge and top horizontal edge of the action area overhead cabinet shall be trimmed with fabric backed padded vinyl. The foam padding shall be a minimum of 3/8" high-density foam and shall have a R-factor of 0.25. All seams are to be machine stitched for proper fit and durability.

ACTION AREA LIGHTING

Two (2) white Whelen Super LED strip lights shall be installed underneath the upper cabinet in the primary action area. These lights shall have a manual "on/off/on" switch on the rear switch panel to activate the dual or single light feature.

A Federal Signal brand LF Series "Littlelite" LED gooseneck map light shall be provided and installed in the primary action area. This light shall have a manual "on/off" switch on the light itself.

ACTION AREA CONTROL PANEL

All patient compartment lighting , environmental equipment and other indicators and controls critical to the care of the patient shall be controlled from a switching console located to the right side of the rear facing technicians seat. The switch console shall be located in a cabinet face cut at an approximate 30-degree angle above the action area and below the overhead cabinet. The switch panel shall be designed to provide easy operation and high visibility from either the rear facing technicians seat or side mounted CPR seat.

To facilitate easy troubleshooting and maintenance or repair, the controls for all ambulance conversion functions shall be basic, automotive style, nonprogrammable type controls. This type of control mechanism can be easily repaired by department maintenance personnel and does not require electronic interaction with a third party for programming or problem solving.

The switches shall be, moisture resistant, Euro-style, rocker-type, and shall be UL listed and CSA approved. Each switch shall have one or more LED indicator lights integral to the switch rocker indicating the function status. Switches may be simple ON/OFF type or multi-position rockers or rotary, stepped-position switches, depending upon their specific function.

The switch function legends shall be engraved plastic inserts. The backlighting shall light the words themselves rather than the background.

Backlighting and switch perimeter lighting shall be accomplished with electro-luminescent light strips attached to the backside of the switch panel. This type of light source shall be used for consistent light output, low amp draw, and extended service life.

The switch panel shall contain at a minimum, the following switches and controls:

Heat/Cool Fan Speed Control: Rotary, stepped-position control selecting Hi, Med, Low, Off
Heat/Cool Mode Selector: Two-position rocker control selecting Heating or Cooling function
Left Dome Lights: Three-position rocker control selecting Low, Off, Hi for curbside dome lights
Right Dome Lights: Three-position rocker control selecting Low, Off, Hi for streetside dome lights
Fluorescent Lights
Action Area Lights
O2 Compartment Light
Suction Pump: ON/OFF control selecting Thomas suction pump
Spare Switch: (1) Spare switch and (3) Blank positions for future use
Patient Status Indicator Lights, (3) Locking push button controls, Red, Yellow, Green, selecting indication of patient status, signal to front switch panel
Exhaust Fan Control: Rotary, stepped-position control selecting Hi, Med, Low, Off for patient compartment exhaust fan

Additional switches and switch heads shall be added to the switch panel when specified in this document.

REAR RADIO HEAD

There shall be professional, quality installation of a Motorola rear radio head installed with microphone and connected to power and antennae. Details on this radio are noted in the "RADIOS" section below.

The exact location of this radio head shall be determined at the pre-construction meeting.

INVERTER SWITCH

An "on/off" switch shall be mounted in the action area that shall control the inverter.

OXYGEN COMPARTMENT LIGHT CONTROL

An "on/off" switch shall be mounted in the action area control panel that shall control the light in the exterior oxygen compartment.

EXHAUST FAN

There shall be a Detroit Marine power vent supplied and installed in the patient module. The power vent shall have a 3-speed fan switch installed in the action area switch panel. There shall be a chrome cover supplied where the vent exits the module body.

Note: All listed cabinet dimensions are approximate and may vary slightly due to vehicle construction features. Exact cabinet placement and dimensions shall be determined at the pre-construction meeting

ACTION AREA OVERHEAD CABINET

A cabinet approximately 15" high x 34" wide shall be installed above the action area and

shall be provided with one [1] infinitely adjustable shelf and a fixed divider. It shall have sliding Plexiglass doors and a tilt out "restocking" feature. It shall have a full length aluminum handle on each door. A Department supplied Smithworks floor mount IV warmer shall be installed in the right lower side of this cabinet and plugged into the 12V power point specified for this cabinet elsewhere in this document.

WRITING TRAY BELOW ACTION AREA

A pull-out writing tray shall be provided below the action area, in the rearward position. It shall have approximate dimensions of 1" high x 14" wide x 15" deep. In the closed position, it shall be flush with the front edge of the cabinetry.

CPR DOUBLE CABINET

There shall be a double cabinet above the CPR seat. It shall be approximately 24" wide x 12" high. It shall have double flip-up plexiglass doors with hold open devices. It shall have chrome "C" handles with roller ball catches on each door.

CPR SEAT

To the rear of the first action area, there shall be a bench type CPR seat with an approximate 24" width. This area is intended for use as a technician seat for administering aid to a patient when the center mount cot position is used. The seat shall have a fold-down backrest for use as additional counter space when seating is not required. The seat cushion must be a minimum of 3" thick x 18" deep x 22" wide.

STORAGE UNDER CPR SEAT

There will be a storage area under the CPR seat. Access to this area will be by tilting up the CPR seat cushion, which shall be hinged to tilt toward the center of the vehicle.

SECOND ACTION AREA

The 2nd Action Area, the technicians secondary work center, shall be an open countertop designed for efficiency and accessibility. The action area shall be located to the rear of the CPR seat in the streetside cabinet wall and shall be accessible from the Squad Bench also. The counter top shall have dimensions of approximately 23.5" wide x 18" deep with a minimum of a 3/4" lip to prevent items from sliding off the work surface.

The countertop in the second action area shall be Corian brand material. It shall have a radius edge (no foam padding) and shall be scratch and dent resistant. The countertop color in the second action area shall be determined at a pre-construction meeting.

The lower horizontal edge of the 2nd action area supply cabinet shall be trimmed with fabric backed padded vinyl for technicians safety. The color-keyed foam padding shall be a minimum of 3/8" high-density foam and shall have a R-factor of 0.25. All seams are to

be machine stitched for proper fit and durability. The overhead open area for the second action area shall be a minimum of 20" (from countertop to bottom of 2nd action area upper supply cabinet). The countertop area of this area may be lower than the primary action area countertop if necessary to accomplish the necessary open space.

2ND ACTION AREA LOWER SUPPLY CABINET

A roll-out supply cabinet with the dimensions of approximately 23" wide x 7" high x 10" deep shall be provided just below the second action area. It shall have hinges that do not allow it to pull out more that the depth of the cabinet unless required for cleaning.

It shall have a positive latching system and a handle that does not protrude into the patient compartment.

2ND ACTION AREA UPPER SUPPLY CABINET

An upper double supply cabinet shall be provided just above the second action area below the overhead cabinet. It shall have dimensions of approximately 24" wide x minimum 6" high and be the depth of the second action area. It shall have double flip-down Plexiglass doors with hold-open devices and a chrome pull handle with a roller ball catch provided on each door.

OVERHEAD CABINET

An overhead cabinet approximately 15" high x 40" wide shall be installed on the streetside interior above the 2nd action area supply cabinet and the rearward supply cabinet. It shall have one (1) infinitely adjustable shelf and a fixed divider. It shall have sliding double Plexiglass doors, a tilt out "restocking" feature and a full length, extruded full length aluminum handle on each door.

SUPPLY CABINET

A supply cabinet shall be provided in the rearward section of the streetside interior, below the overhead cabinet. It shall be approximately 24" wide x 18" high and shall be accessible from both the interior and the exterior (D4) compartment. It shall have center opening double color-matched formica covered wood doors with plexiglass inserts and chrome pull handle with Southco latches provided on each door. It shall have two (2) infinitely adjustable shelves.

RIGHT SIDE CABINetry

SQUAD BENCH

The squad bench shall be approximately 22" deep x 73" wide and have split lids with storage underneath both sections. The front face of the squad bench shall be fabricated from a minimum of 3/4" plywood.

The forward lid shall have a gas prop style hold-open device and a latch that automatically holds the lid closed (preventing opening in case of accident). The lid shall automatically open when the latch is released.

Three [3] sets of retractable seat belts are required for seated passengers and for securing a stretcher. The retractors and seatbelts shall be color-keyed high-quality automotive style with plastic housings.

The lid will be fitted with a removable cushion covered with a heavy grade fabric backed vinyl that meets FMVSS 302.

A matching full-length backrest will be mounted on the wall behind the squad bench. The squad bench backrests shall be comprised of two (2) full width x approximately 3" thick x 8" high protective pads. One (1) shall be mounted approximately 10" above the bench seat and be attached to the curbside wall by a minimum of five (5) sets of zinc-plated steel M/W clips. These clips shall be configured to allow for countersinking the heads of the mounting screws to maintain a near flush position on the wall. The second pad shall be affixed with high strength Velcro tabs to the upper curbside wall just below the overhead cabinetry. Both backrest pads shall be easily removed for cleaning and reinstalled without special tools.

SQUAD BENCH OVERHEAD CABINET

An overhead cabinet, approximately 8" high x 60" wide x 6' deep, shall be located over the squad bench at the ceiling level, rearward of the entry/egress door opening. The width of this cabinet shall be approximately the length of the crew bench, allowing for installation of an oxygen outlet in the forward area to the rear of the entry/egress door.

This cabinet shall be divided into three (3) separate sections. Any horizontal or vertical portions of this cabinet that protrude into the patient compartment shall be trimmed with fabric backed padded color-keyed vinyl that matches the standard of the rest of the patient compartment padding in this specification.

The forward section of this cabinet shall house a three (3) compartment glove box holder with plexiglass doors.

The rear 2 sections of the cabinet shall have two (2) flip-up Plexiglass doors. Each door shall have hold-open devices and chrome pull handles with roller ball catches.

ARMREST

A stainless steel "A" bar armrest and sharps/waste container shall be located at the head of the squad bench near the entry/egress door. The sharps/waste container shall be easily accessible from the front of the squad bench. The armrest shall have padding on the top and side facing the crew bench.

FRONT CABINERY

All front cabinetry that protrudes into the patient compartment shall have a minimum of 3" radius corners.

MEDI-KOOL DRAWER REFRIGERATION UNIT

A Medi-Kool brand 1.5 Drawer stainless steel locking refrigeration unit will be provided and installed in the upper right side of the forward wall. It shall be designed as a cooling unit and shall have inlet and outlet vents installed to vent the refrigeration cabinetry.

There shall be a minimum of one (1) additional 4" auxiliary fan installed to exhaust warm air from the refrigeration cabinetry. The fan will vent air from the unit to the exterior of the vehicle and one (1) chrome exterior compartment vent shall be provided and installed where the vent exits the vehicle body. The fan shall be wired in series to activate with the integral refrigerator fans. The exact location of this fan will be determined at a pre-construction meeting.

The refrigeration unit shall be configured to run on 12V or 110V power and will additionally be configured to auto change over from 12V to 110V when the unit senses 110V power. This refrigeration unit shall be wired to run only when ignition hot or plugged into shore power.

The digital control panel that controls the refrigeration unit will be installed in a location that is visible through the rear and side windows of the vehicle body. There shall be a small, green LED light installed in close proximity to the control panel that indicates and is labeled "power to refrigeration unit".

The installation of the refrigeration units shall be such that it appears built in, all walls will be finished to the side walls of the body.

ALS SUPPLY CABINET

A supply cabinet shall be provided and installed in the right side of the forward wall directly underneath the refrigeration unit. This cabinet shall be finished with the same material as the other cabinets.

It shall have approximate dimensions of 12" high x 26" wide and be the full depth to the cab bulkhead wall. It shall have a durable rubber floor mat provided on the bottom of the cabinet

This cabinet shall be accessible from the exterior corresponding compartment (P1).

This cabinet shall have a flip-down Plexiglass door. The door shall have a spring-strut hold-open device and chrome pull handles with roller ball catches.

ALS CABINET

A cabinet shall be provided and installed in the right side of the forward wall directly underneath the ALS supply cabinet. This cabinet shall be finished with the same material as the other cabinets.

It shall have approximate dimensions of 40" high x 26" wide and be the full depth to the cab bulkhead wall. (the height of this cabinet is approximate, this cabinet, the ALS supply cabinet above it and the refrigeration unit shall take up the full height of the bulkhead wall with minimal spacing between).

This cabinet shall be accessible from the exterior corresponding compartment (P1).

This cabinet shall have three [3] infinitely adjustable shelves running the full width and depth of the cabinet

A durable rubber floor mat shall be installed on the bottom floor and all shelves of this cabinet.

This cabinet shall have a roll-up tambour style metal door. In the event a roll-up door is not available from a particular manufacturer, dual color-matched formica covered wood doors with plexiglass inserts and full length stainless steel piano style hinges with either Southco style non-locking latches or non-locking paddle style latches will be acceptable.

PORTABLE OXYGEN BOTTLE STORAGE

A double oxygen bottle storage system shall be provided and installed on the left side of the interior of the side entry door stepwell. It shall provide vertical storage of two (2) "D" size oxygen bottles and each shall be mounted with a Cast Products base and ring. The oxygen bottle storage system shall not protrude into the stepwell space any farther than the A bar armrest.

NOTEBOOK STORAGE

There shall be an area constructed for notebook storage on the left side of the ALS cabinet over the portable O2 bottle storage area. This area shall be approximately at the same level as the sliding window on the bulkhead. This area shall have a minimum of three (3) dividers and be wide and deep enough for a 2" 3-ring binder. It shall be built in, constructed from cabinet material and plexiglass and angled downward so as to retain notebooks and similar materials when the vehicle is in motion.

PASS-THROUGH

There shall be a pass-through access between the chassis cab and body.

An aluminum partition wall framed with .125" x 2" x 2" aluminum tubing placed on 16" centers and plated with .060" aluminum formed and welded to the roof, both sides, and floor shall be installed. The patient compartment side of the partition shall be covered with 1/4" plywood laminated with a minimum of .028" plastic. The driver's side of the partition shall be covered with the OEM wall as well as a mildew resistant marine style carpet of a color that matches with the cab interior colors.

HEATING AND COOLING

The ambulance cab shall be equipped with the heaviest duty OEM supplied in-dash air conditioner and hot water heater.

The patient compartment shall be equipped with a combination hot water heater/air conditioner and a power exhaust vent.

Front and rear heaters and air conditioners shall operate as separate and independent environmental systems. The controls for the rear environmental systems shall be located in the action area switch panel.

The patient compartment heat and air conditioning shall be controlled and maintained through a standard, automatically controlled digital thermostat.

The addition of the rear HVAC system shall have no deleterious effect upon the chassis system and especially the windshield defroster system as described in FMVSS 103, Windshield Defrosting and Defogging System.

A combination heater/air conditioner having a minimum air output of 650 CFM at 0 static pressure, a minimum cooling capacity of 32,000 BTU and a minimum heating capacity of 35,000 BTU shall be installed over the sliding plexiglass window that replaces the walk-through. Alternatively installed systems that use ducting shall be acceptable. The manufacturer's highest quality module heating/air conditioning system shall be installed.

The fan shall be a dual squirrel cage permanent magnet type with a minimum three (3) year warranty. Two (2) automatically controlled liquid shut off valves shall be installed permitting use of the system.

The fan speed shall be controlled manually by a three speed fan switch located in the action area.

All heater hoses shall be EPDM Nomex material.

ELECTRICAL CABINET

A boxed style cabinet behind the rear facing technician seat shall house the electrical components. Solenoids, relays, circuit breakers, etc. shall be on a module disconnect panel behind a door measuring approximately 30" high x 15" wide. Ample venting shall be supplied.

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

The cabinet shall have a vertically hinged door and shall be provided with a locking Southco type latch. This door shall hinge on the left side for ease of maintenance and repair.

CABINETS UNDER ELECTRICAL CABINET

Two cabinets with removable doors shall be provided below the electrical cabinet. Each cabinet shall be approximately 15" high x 15" wide with removable doors and non-locking Southco latches.

Note: The noted approximate height of these cabinets may be varied, all available space underneath the electrical cabinet shall be used.

OXYGEN /MEDICAL AIR COMPARTMENT

The oxygen/medical air cylinder storage compartment shall be located in the streetside front compartment D1.

Access to the regulators, contents gauges, and cylinder shut-off valves from the interior of the vehicle shall be by means of a hinged minimum .250 " thick Plexiglass door in the forward wall of the action area. This opening shall be trimmed with a black, ABS formed bezel to protect the technicians hands and provide a finished opening. The oxygen/medical air compartment shall have two (2) recessed, white LED lights installed that are controlled by a switch in the action area panel as well as being activated when the compartment door is opened.

The compartment shall be vented through the exterior door with a minimum 28 square inch opening. The vent opening shall be covered with a polished aluminum or chrome vent cover attached with stainless screws.

The cylinder retention brackets shall be mounted to the wall of the compartment by Grade 8 bolts tapped into a minimum .250" aluminum plate welded onto the inboard side of the compartment wall. This retention brackets must meet or exceed AMD Standard 003, Oxygen Retention System. The finished oxygen and medical air systems including regulators, contents gauges, hoses, outlets and flowmeters must meet or exceed the requirements of AMD Standard 015, Ambulance Main Oxygen System Test.

OXYGEN SYSTEM

The medical oxygen system shall be capable of storing and supplying a minimum of 3000 liters of oxygen. A suitable high-pressure hose shall be provided.

The concealed oxygen supply hose shall be minimum .250" ID, .50" OD nylon base with polyester fiber reinforcing. This electrically conductive hose shall be certified to 1,875 psi and have a 7,500 pound burst rating. The fittings shall be DISS and flare, and be securely crimped to the barbed fittings by means of compressed copper sleeves.

Oxygen supply hose shall be routed through the ceiling of the ambulance body and be secured with non-abrasive plastic "C" clamps.

The entire oxygen system shall be subjected to a 155-psi leak test for 24-hours before installation of panels or covers that may obscure or hide the system components. After the vehicle is completed, a test as prescribed by AMD Standard 015 shall be conducted for a period of four (4) hours to insure system integrity. This test shall be performed using nitrogen gas to purge the lines of all moisture and foreign debris. Upon completion of the test, the lines shall be bled free of nitrogen and capped.

This medical oxygen system shall meet or exceed AMD Standard 015, Ambulance Main Oxygen System Test.

OXYGEN SUPPLY

The oxygen system shall have four (4) outlets, two (2) on the action area wall, one (1) on the ceiling over the patient cot area and one (1) over the squad bench. The outlets over the patient cot area and the squad bench shall be closer to the "head end" of the cot and squad bench area. The department shall specify the brand of quick-connectors to be used.

Oxygen outlets shall be Amvex brand with Ohio style fittings. These outlets shall be certified by the equipment manufacturer to meet the appropriate FDA standards for medical oxygen outlets.

One (1) gravity type Thorpe tube oxygen flowmeter shall be provided. This flowmeter shall be certified by the equipment manufacturer to meet the appropriate FDA standards for medical oxygen flow meters.

One (1) additional gravity type oxygen flowmeter shall be provided and installed within the primary action area.

OXYGEN REGULATOR

A 50 psi, preset medical oxygen regulator shall be provided and installed on the supply end of the oxygen system hose.

This regulator shall be certified by the equipment manufacturer to meet the appropriate FDA standards for medical oxygen regulators.

MEDICAL AIR SYSTEM

The medical air system shall be capable of storing and supplying a minimum of 3000 liters

of medical air. A suitable high-pressure hose shall be provided.

The concealed medical air supply hose shall be minimum .250" ID, .50" OD nylon base with polyester fiber reinforcing. This electrically conductive hose shall be certified to 1,875 psi and have a 7,500 pound burst rating. The fittings shall be DISS and flare, and be securely crimped to the barbed fittings by means of compressed copper sleeves.

Medical air supply hose shall be routed through the ceiling of the ambulance body and be secured with non-abrasive plastic "C" clamps.

The entire medical air system shall be subjected to a 155-psi leak test for 24-hours before installation of panels or covers that may obscure or hide the system components. After the vehicle is completed, a test as prescribed by AMD Standard 015 shall be conducted for a period of four (4) hours to insure system integrity. This test shall be performed using nitrogen gas to purge the lines of all moisture and foreign debris. Upon completion of the test, the lines shall be bled free of nitrogen and capped.

This medical air system shall meet or exceed AMD Standard 015, Ambulance Main Oxygen System Test.

MEDICAL AIR SUPPLY

The medical air system shall have one (1) outlet on the action area wall. The department shall specify the brand of quick-connectors to be used.

Medical air outlets shall be Amvex brand with Ohio style fittings. These outlets shall be certified by the equipment manufacturer to meet the appropriate FDA standards for medical air outlets.

MEDICAL AIR REGULATOR

A 50 psi, preset medical air regulator shall be provided and installed on the supply end of the medical air system hose.

This regulator shall be certified by the equipment manufacturer to meet the appropriate FDA standards for medical air regulators.

SUCTION AND ASPIRATION SYSTEMS

An SSCOR Model 20001/02 suction aspirator system with 1200 ml disposable canister, stainless steel bracket and wall-mounted vacuum control shall be supplied and installed in the primary action area.

A Thomas brand electric suction pump, Model 107CDC20 E, shall be supplied and installed either on a high shelf in streetside compartment D2 or in cabinetry underneath the primary action area or the electrical panel. If the D2 compartment is utilized, the pump shall be covered with a protective metal grating.

The self-sealing vacuum outlet shall be mounted on the action area wall next to the oxygen outlets. To prevent premature fatigue of the suction plumbing, the line from the

vacuum pump to the wall outlet shall be a minimum of .375" I.D. double braided neoprene hose.

This suction aspirator system shall have the capability of attaining a vacuum of 300 millimeters of mercury within four (4) seconds.

The vacuum control regulator panel shall be installed on the action area wall adjacent to the vacuum outlet and the oxygen outlets. This control panel shall contain a vacuum gauge calibrated on a dual scale, to read vacuum pressure in increments from 0 millimeters of Mercury or 0 inches of Mercury to 750 mmHg or 30 inHg. A quarter-turn adjustment vacuum control and shut-off valve to adjust the vacuum levels or to discontinue suction immediately shall be integral to the control panel housing the vacuum gauge.

The system as provided, shall include one (1) 10-foot length of transparent non-kinking clear plastic tubing and an operator's manual. This suction aspirator system shall be certified by the equipment manufacturer to meet the appropriate FDA standards for medical suction aspirator systems.

ATTENDANT SEAT

Seating for the attendant shall consist of a contoured high back padded EVS bucket seat. The seat covering shall be an easy to 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. 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/cabinet base with a brushed stainless steel tilt down door and a Southco or chrome paddle latch and be capable of swiveling and locking securely in place.

VACUUM FORMED UPHOLSTRY

All seating and backrests (including the technicians seat) in the patient compartment shall be constructed of 60 ounce vacuumed formed, seamless vinyl.

IV HOLDERS

Four (4) ceiling mounted, recessed Cast Products 2008-1 IV holders shall be supplied. They shall be located at the patient head and foot areas, two (2) over the squad bench and two (2) over the primary cot. The fold-down structure shall be a flexible rubber material to prevent injury to technicians moving in the patient compartment. When not in use, the rubber fold-down shall flip up for flush storage in the recessed ceiling housing.

Each holder must have the capacity to hold two (2) bags of solution and have Velcro securing straps to prevent excessive movement of the bags during transport.

ASSIST RAILS

One [1] 1" diameter, polished stainless steel overhead assist rail shall be provided and securely fastened to the ceiling over the primary cot. It shall be a minimum of 90" long.

One [1] 1" diameter, polished stainless steel overhead assist rail shall be provided and securely fastened over the squad bench. It shall be a minimum of 60" long.

Both assist rails shall be long enough to provide grab rail assistance from both ends of the interior of the module body.

Assist rails fastened with self-tapping machine screws will not be acceptable. These assist rails must meet or exceed AMD Standard 008, Load Test for Ambulance Patient Compartment Grab Rail.

AMBULANCE COT

A new, Stryker Power-Pro XT ambulance cot shall be provided. The Stryker cot shall be provided with the following options:

Dual wheel locks
Base storage net
2-stage IV pole (left side mount)
Foot mount O2 bottle holder
Battery(s) and charger

COT MOUNT

A new Stryker #6370 single position, floor cot mount shall be provided and installed. This cot mount system must meet or exceed AMD Standard 004, Litter Retention System. Location of the cot mount will be center mount and its exact location shall be determined at a pre-construction meeting.

SIGNS

Self adhesive "NO SMOKING OXYGEN EQUIPPED" and "FASTEN SEATBELT" signs shall be installed in the primary action area.

RADIO(S)

A Motorola XTL 5000 digital radio with a dual control head shall be provided and installed. The primary control head shall be installed in the cab console. The secondary control head shall be installed in the Action Area in the module body as noted above. The radio system shall be ordered with the following options:

Motorola XTL 5000 VHF Mobile 10-50 Watt 136	M20KSS9PW1 N
Software Astro Digital CAI	G806
3600 Smartzone Operation	G51
Enhanced Digital ID Display	G114
¼ Wave Broadband Antennae 146-174	G629
XTL 5000 05 Control Head	G442
Control Head Software	G444
Dual-Control Hardware	GA00092
Remote Mount Cable 17ft.	G628
Remote Mount	G67
Auxiliary Speaker Spectra Motor	B18
Standard Palm Microphone (1 front, 1 back)	HMN1090

All power, ground and antennae connections shall be made to the radio system and the system shall be tested for continuity and function by a qualified radio installation facility prior to vehicle being delivered. **The Motorola antennae cable must be used that is supplied with radio in the length it is supplied.**

Both the primary and secondary radio head shall be wired to include the Motorola auxiliary speaker.

All radio installations shall be professionally done and appear as "built in" as possible while still allowing ease of radio maintenance.

The location of all radios and their speakers shall be determined at the pre-construction meeting.

RADIO EQUIPMENT POWER

Three (3) 10 gauge power (battery hot) wires, three (3) switched ignition wires, three (3) ground wires, three (3) RG58U coax cables, and three (3) PL 259 connectors shall be provided and installed. All provided ground wires shall be grounded on the non-equipment end in a manner consistent with specifications for ground wires noted elsewhere in this specification. All power, ground and coax cables shall be run in appropriate protective loom, raceway, grommets, etc. to prevent them from being damaged NO EXCEPTIONS.

All antenna coax shall be run through the wiring raceway in the ceiling of the module body to the area of the roof where antenna bases are to be installed.

Two (2) Motorola antenna bases shall be installed in the roof of the module body and all coax connections made at the antenna base and at the radios.

One (1) set of power, ground, switched ignition and coax cables shall be connected to the secondary radio head in the Action Area in the module body (coax connections shall be made at the radio heads as necessary per manufacturer specifications).

Two (2) sets of power, ground, switched ignition and coax cables shall be run to the cab chassis.

One set shall be connected to the radio in the cab console, one shall terminate behind the passenger seat with a 36" service loop at the termination. The set that terminates behind the passenger seat shall not be hooked to live power (antenna coax will be connected to antenna bases), but tagged, clearly identified and secured on the opposite end. Location of these tagged and secured ends shall be noted in the wiring schematic and operators manual for the vehicle. Ground connections shall be made on the opposite end.

All power and antenna connections will be tested for continuity and function prior to vehicles being delivered.

PHONE EQUIPMENT

One (1) department supplied Motorola cellular phone car kit, one (1) 10 gauge power, one (1) ground wire, one (1) switched ignition wire, one (1) RG58U coax cable and one (1) PL

259 connector shall be installed.

Antenna coax will be run through the wiring raceway in the ceiling of the module body to the area of the roof where cellular phone antenna base is to be installed.

A commercial, high-quality cellular phone antenna and base shall be installed in the roof of the module body and all coax connections made at the antenna base.

Cellular phone car kit (speaker, mic, hang-up cup, power box and cables) shall be installed in an area to be determined at a pre-construction meeting. All power, ground and coax connections shall be made and the system shall be tested for continuity and function prior to vehicles being delivered.

GARMIN GPS

There shall be a Garmin model 1490T GPS unit supplied with a high quality Garmin adhesive dash mount and an external antenna. The GPS unit will be mounted in a fixed location of the Departments choice (to be determined at pre-construction meeting) and have antennae and power connections run in an unobtrusive location so as not to be susceptible to damage.

LOW VOLTAGE DISCONNECT

A Newmar model LVD 12-30 low voltage disconnect module shall be supplied and installed. The module will be wired to disconnect the refrigeration unit when battery voltage falls to a point specified by the department. The module shall be installed in a location that makes it easy to service and adjust.

COMPUTER MOUNT

A department supplied Mobile Data Terminal mount will be installed in the vehicle cab between the driver and passenger seat. The exact location of this mount will be determined at a pre- construction meeting.

GRILLE GUARD / WINCH

A heavy duty Warn Gen II grill guard and winch platform specified for the exact chassis used will be supplied and installed. The grille guard will be frame mounted and powder coated black. The grille guard will include uprights and cross bars only, no brush guards over headlights will be used.

An electric heavy duty Warn recovery winch with a minimum capacity of 15,000 pounds will be supplied and installed in the grille guard mounting system specifically designed for the grille guard and winch. The electrical system of the vehicle will be upgraded and changed as necessary to include a third battery if necessary, to facilitate the appropriate winch wiring.

A wired remote control for the winch and a heavy duty winch accessory kit shall be included. A heavy-duty, high quality rip-stop nylon cover for the winch shall also be provided.

FIRE EXTINGUISHERS

Two (2) 5 pound rated ABC fire extinguishers with mounting brackets shall be furnished

with the ambulances. These shall be shipped loose to allow the department to install in the desired locations.

SHARPS/BIO-HAZARD

A sharps container with a crash stable mounting bracket shall be supplied and shipped loose. A biohazard container with lid and twelve [12] red biohazard bags shall be shipped loose for installation by the department.

CHASSIS PAINT

The chassis shall be repainted a single color, **Pierce #90** (Sikkens FLNA3042 or equivalent), utilizing a high quality base coat/clear coat paint system (Sikkens or equivalent) using the paint process standards noted below.

MODULE SURFACE PREPARATION

A corrosion inhibitor shall be used on specified exterior surfaces and on specified fasteners, hinges and accessories that are subject to the effects of corrosion due to the electrolytic process that occurs between dissimilar metals. The product, designated as ECK, is a petroleum-based substance with a very slow rate of desiccation. The substance functions as a barrier to water thus minimizes the electrolytic process. It shall be applied in the following conditions and to the following accessories and fasteners:

1. Behind stone guards or any other surface area where there is direct contact between dissimilar metals.
2. On light assemblies utilizing self-tapping mounting screws that penetrate the body.
3. On screws and screw holes for any accessory whose holes are drilled and tapped.
4. On the body surface when any accessory without a rubber or composite gasket is to be mounted; i.e. entry or compartment door hinges or light assemblies without gaskets.

NO EXCEPTIONS

ECK shall not be applied in the following conditions:

1. When mounting any accessory that has a rubber or composite gasket.
 2. On light assemblies, which have, plastic inserts for mount screws.
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PAINT

To produce a high quality paint finish and to comply with the requirements for support of a ten (10) year/50,000 mile warranty the preparation and painting process described below, shall be used.

Prior to initiating the surface preparation process, all hardware, weather stripping, handles, light fixtures, door hinges, corner trim, etc. shall be removed from the body.

Additionally, any portion of the chassis, which does not require refinishing, shall be protected from the ensuing process.

To rid the aluminum body of any extraneous materials or material impurities the entire surface shall be washed and wiped dry with a certified wax and grease remover. Excess weld material shall be removed by grinding all welds, seams, and any other body imperfections. The entire surface shall then be sanded with 80 - 150 grit dry sandpaper to

provide good adhesion for any fillers and primers. The required areas will be filled with approved premium lightweight filler and sanded smooth. A premium polysurfacer will be applied directly over these areas to ensure adequate base for application of primers.

The entire surface shall be cleaned again with certified wax and grease remover before application of any primers. A self etching primer shall be applied to provide a base for adequate adherence of materials to be applied in subsequent steps of this process. A high quality urethane primer surfacer shall then be applied. The entire surface to receive topcoat will be sanded smooth to ensure a level and defect free surface.

Door edges and doorjambes shall be prepared similarly to other body surfaces and finish painted with a certified topcoat paint. The entire surface of vehicle body shall be DA finish sanded with no coarser than 320 grit dry sandpaper. The surface shall be washed and wiped once again with certified wax and grease remover and tacked for application of urethane sealer. A full wet coat of urethane primer sealer shall be applied and allowed to flash per specifications. Base coat color will be applied to ensure color correctness then clear coated with a minimum of 2 full wet coats of qualified urethane clear coat and baked at 140 degrees for 30 minutes.

Body shall then be color sanded, compounded, buffed and polished to a smooth defect free finish.

Upon final assembly, door hinges, hinge side of doorjambes and all stainless steel mounting hardware shall be coated with ECK, a corrosion inhibitor and permanently mounted to vehicle.

BODY PAINT COLOR

The body shall be painted a single color of **Pierce #90** (Sikkens FLNA3042 or equivalent), utilizing a high quality base coat/clear coat paint system (Sikkens or equivalent) using the same paint process standards as noted above.

MODULE BODY ROOF COLOR

The module body roof from the drip rail up shall be painted white (GM Summit White base coat/clear coat or equivalent) utilizing a high quality base coat/clear coat paint system (Sikkens or equivalent) using the same paint process standards as noted above.

LETTERING AND GRAPHICS

Lettering and graphics shall be applied per the RCFD Ambulance Lettering and Graphics specification. Exact RCFD Ambulance Lettering and Graphics specifications shall be supplied when the successful bidder supplies line drawings. 3M Scotchlite brand vinyl shall be used for all lettering, stripes and graphics. Lettering requiring shading shall be shaded down and to the right.

MAIN SCOTCHLITE STRIPE

The main Scotchlite body stripe shall be a reflective, white in color, "straight" design on the chassis and body sides. It shall start at the side of the cab and run along each side of the cab and body, just under the cab window. The stripe will angle upwards approximately 5 inches when it meets the module body and continue straight across the body terminating at the rear of the sides of the body. The main stripe shall not exceed 9 inches in width, it shall have a white 1/2" accent stripe above and below it. Scotchlite color,

stripe dimension and layout shall be as noted per the RCFD Ambulance Lettering and Graphics specification. Exact location will be determined at a pre-construction meeting.

NFPA 1901 REAR REFLECTIVE STRIPING

The rear of the module body shall be striped with reflective red and orange stripes in a chevron pattern sloping downward from the center of the vehicle at a 45-degree angle. The stripes shall be a minimum of 6 in wide. The striping pattern shall interface with the other graphics and be as noted and in the RCFD Ambulance Lettering and Graphics specification.

OPERATOR'S MANUAL

A vehicle owner's manual (reference handbook) shall be provided in an 8 1/2" x 11" three-ring, hard cover, loose-leaf binder. It shall contain copies of the chassis manufacturer's warranties and chassis owner's manual, copies of the ambulance manufacturer's warranties and New Vehicle Owners Manual, component manufacturer's equipment information, installation, operating, service instructions, warranties, etc., and a complete set of wiring diagrams or schematics with circuits and components clearly and accurately labeled. Verification of the chassis predelivery inspection, and a copy of the ambulance manufacturer's quality assurance form with results of the final vehicle release inspection shall be supplied upon the request of the department.

OPERATING INSTRUCTIONS

To provide a safe working environment for emergency medical technicians to provide care of patients, this emergency vehicle must be operated in the safest manner possible. To provide proper training for all operators of this emergency vehicle, a professionally produced operations videotape or DVD shall be included with the vehicle at the time of delivery. The videotape shall present all aspects of the operation of the vehicle including front and rear switch panel operation; daily check-out and maintenance procedures; location of and precautions about the main electrical panel and components. The authorized representative of the manufacturer shall present the videotape and review its contents with the potential operators of the vehicle and shall answer any questions regarding its optional features and safe and correct operation.

ELECTRICAL SCHEMATICS CD

To provide for continued quality operations of the new ambulance and timely information regarding the vehicles electrical system, the manufacturer shall provide a compact disc with the basic electrical schematics for this emergency vehicle. This CD shall be delivered to this department as an item included in the New Vehicle Owners Manual.

PAINT WARRANTY

The manufacturer shall warranty the paint on each new ambulance for a period of ten (10) years or fifty thousand miles, whichever occurs first, from the date of manufacturers certification. The finished areas shall be covered for the following failures:

A. Durability and Appearance of the Topcoat

Gloss, color retention and cracking will be covered one hundred percent

Loss of gloss

Clear coat, for the entire one hundred and twenty months the gloss will not fall below sixty gloss units. Gloss measurements will be taken at a twenty-degree geometry.

Poor color retention

Clear coat for the entire one hundred and twenty months the color shift will be no greater than a Delta E of 3.0.

Cracking , cracking of the paint system (as set out in ASTM D661-86).

B. Integrity of the Entire Coating System

Items related to the integrity of the entire coating system (adhesion) will be covered one hundred percent (100%) for the first thirty-six (36) months; from the thirty-seventh (37) month to the eight-fourth (84) month coverage will be fifty percent (50%); from the eighty-fifth (85) month to the one hundred and twentieth (120) month coverage will be twenty-five percent (25%).

Loss of Adhesion, bad adhesion of any element of the Paint System resulting in appearance below the standards set out in ASTM 1654-79a, Table 2, rating 6 or lower.

Exclusions:

The vehicle undercarriage, or the cab or body interior, or compartment interiors.

Hazing, chalking, or loss of gloss caused by improper care, abrasive polishes, cleaning agents, heavy-duty pressure washing, or aggressive mechanical wash systems.

Paint deterioration caused by abuse, accidents, acid rain, chemical fallout or acts of nature. Accidents, scratches, chips, bruises, and gloss reduction due to normal vehicle use and maintenance.

Custom finishes, exotic finishes or any other finish than standard refinish procedure.

Failures resulting from product misuse or abuse.

Repairs done to previously refinished areas unless stripped to bare metal or appropriate substrate. Claims presented without proper documentation.

Application and removal of stickers from a painted surface.

Should repairs become necessary under the terms of this warranty, the extent of that repair shall be determined solely by the manufacturer and shall be performed solely by the manufacturer or a Commercial Repair Facility designated by the manufacturer. The expense of any transportation to or from such repair facility shall be that of the purchaser and shall not an item covered by this warranty.

C. Corrosion

The manufacturer warrants each new ambulance against corrosion damage and damage caused by electrolysis for a period of five (5) years, from the date of manufacturers certification.

Coverage for damage due to corrosion and electrolysis damage shall be administered according to the following prorated schedule:

Year 1- 100% of repair cost

Year 2- 80% of repair cost

Year 3- 60% of repair cost

Year 4- 40% of repair cost

Year 5- 20% of repair cost

VEHICLE TRADE-IN

The successful bidder shall include as part of their bid, accepting one (1) of the Departments present Medtec Type III "mini-mod" ambulance as trade-in. The value of the trade-ins shall

be noted as a separate figure in the bid document but shall be included in the over-all bid price.