MEDIX Specialty Vehicles, Inc.
Ambulance Bid Specifications

EMERGENCY MEDICAL VEHICLE – Type II Ford Transit Medium Roof
Gasoline Type II Van

Table of Contents

1.0 SCOPE & GENERAL REQUIREMENTS
2.0 CHASSIS
3.0 BODY CONFIGURATION
4.0 BODY CONSTRUCTIONION – GENERAL
5.0 FLOOR STRUCTURE
6.0 SIDE STRUCTURE
7.0 ROOF STRUCTURE
8.0 DOOR STRUCTURE
9.0 CORROSION: Anti-electrolysis procedures
10.0 REAR BUMPER
11.0 BODY PROTECTION
12.0 CABINETRY
13.0 CABINET CONFIGURATION
14.0 UPHOLSTERY
15.0 INTERIOR HARDWARE
16.0 OXYGEN, VACUUM SYSTEMS
17.0 ELECTRICAL SYSTEM - 12-Volt Direct Current
18.0 ELECTRICAL SYSTEM - 125-Volt Alternating Current
19.0 ENVIRONMENTAL
20.0 CONSOLES, SWITCH PANELS
21.0 VISUAL CONSPICUITY - EXTERIOR LIGHTING
22.0 AUDIBLE CONSPICUITY
23.0 INTERIOR LIGHTING
24.0 COMMUNICATIONS EQUIPMENT
25.0 PAINT, LETTERING, DECALS, MISCELLANEOUS

APPENDIX STANDARD MODEL DRAWINGS
MEDIX Specialty Vehicles, Inc.
Ambulance Bid Specifications

EMERGENCY MEDICAL VEHICLE – Type II Ford Transit Medium Roof
Diesel Type II Van

1.0 SCOPE & GENERAL REQUIREMENTS

This specification describes a commercial cargo van chassis converted into a Type II, 4X2 ambulance configuration as defined in the FEDERAL SPECIFICATION FOR STAR-OF-LIFE AMBULANCE, KKK-A-1822F, dated August 1, 2007. Unless otherwise specified, this vehicle shall be manufactured in accordance with the ambulance design criteria of the National Highway Traffic Administration, U.S. Department of Transportation in Washington D.C and the GSA - Federal Ambulance Specification KKK-A-1822F. Documentation shall be submitted with the bid that validates the manufacturer's current and full compliance with KKK-A-1822F or submits proof of the manufacturer's intent to have this testing completed prior to delivery of the proposed new ambulance. The ambulance described herein shall be type and model tested to and in compliance with the National Truck Equipment Association's Ambulance Manufacturing Division, Standards 001 - 025. Certifications must be current to manufacturer's most recent manufacturing/engineering design criteria.

The manufacturer of this vehicle:

1.1 Shall be a modified vehicle upfitter approved by the OEM chassis manufacturer whose chassis is used to complete this Specified vehicle. Additionally, the manufacturer shall hold current certification as a Sprinter Approved Upfitter, and shall submit a copy of the list of Approved Upfitters as published by Sprinter Engineering of Daimler-Benz USA, as part of the bid proposal. This certification insures the integrity of the “conversion” of a vehicle into an ambulance regardless of chassis make.


1.3 Shall carry not less than five million dollars ($10,000,000.00) in product liability insurance.

1.4 Shall employ full-time Parts personnel.

1.5 Shall employ a full-time Electrical Troubleshooter.

1.6 Shall employ a full-time Service/Warranty Representative.
1.7 Shall furnish custom Computer Aided Design (CAD) interior and exterior construction drawings specific to the vehicle to be produced under this Specification. Drawing dimensions must comply with AMD Standard 019- Measuring Guidelines: Cabinets and Compartments

1.8 Shall furnish custom CAD electrical illustrations (including physical layouts of switch panels and electrical component mounts) and electrical schematics specific to the vehicle to be produced under this Specification.

1.9 Shall offer factory refurbishing and/or remounting services for purchased units at pricing current at the time such services are requested.
1.10 Shall furnish proof of manufacturing complete ambulance packages for a minimum of 10 years.

Does Your Bid Comply? Yes ____ No ____

2.0 CHASSIS

2.1 TYPE II ABULANCE: The chassis shall be completed as a Type II, Class 1 ambulance utilizing a, 5-door, Ford Medium-Roof Van specially configured for conversion to an Emergency Medical Vehicle.

Does your bid comply? Yes_____ No_____

2.2 AMBULANCE PREPARATION PACKAGE: The chassis provided shall be equipped with components as recommended by the OEM as suitable for ambulance operation. These components shall be installed by the OEM or its authorized service center. The package shall be designed to meet the demands and duty cycles inherent in Emergency Medical Vehicles.

Does your bid comply? Yes_____ No_____

2.3 THROTTLE – HIGH IDLE: A high idle throttle control shall be provided. The throttle control shall be integral into the chassis electrical system.

Does your bid comply? Yes_____ No_____

2.4 GROSS VEHICLE WEIGHT RATING (GVWR): The GVWR of the chassis supplied shall be at least 9,000 pounds.

Does your bid comply? Yes_____ No_____

2.5 FRONT AXLE WEIGHT RATING (GAWR-F): The GAWR-F shall be rated at no less than 4,130 pounds. The front suspension shall be a McPherson strut system with OEM stabilizer bar.
Does your bid comply?  Yes_____  No_____

2.6  REAR AXLE WEIGHT RATING (GAWR-R): The GAWR-R shall be rated at no less than 5,515 pounds. The rear suspension shall be a solid axle with OEM leaf springs and HD gas shock absorbers.

Does your bid comply?  Yes_____  No_____

2.7  REAR AXLE TYPE AND RATIO: The axle type shall be limited slip differential with a 3.73:1 gear ratio.

Does your bid comply?  Yes_____  No_____

2.8  ENGINE: A 3.5L EcoBoost V6 gasoline engine shall be provided with 275HP @ 6,000RPM and 260 lb.-ft. Torque @ 4,000RPM. The engine performance shall comply with or exceed KKK-A-1822F and AMD Standards 005- 12-Volt DC Electrical System Test, 014- Engine Cooling System Test, 017- Road Test and 022- Cold Engine Start Test. The vehicle shall be equipped with a Diesel Exhaust Fluid (DEF) system in compliance with the Environmental Protection Agency (EPA) requirements for diesel engine exhaust emissions.

Does your bid comply?  Yes_____  No_____

2.9  TRANSMISSION: A 6-speed, electronic automatic transmission with overdrive w/SelectShift™ shall be provided.

Does your bid comply?  Yes_____  No_____

2.10  ALTERNATOR / BATTERIES: An OEM supplied alternator with a rated output of 230-Amps shall be installed. Two batteries shall be OEM mounted beneath the driver’s seat to provide access for servicing. The batteries shall be heavy-duty 78-Amp Hr. each.

Does your bid comply?  Yes_____  No_____

2.11  BRAKES / STABILITY CONTROL: 4-wheel disc w/4-wheel anti-lock, power assisted hydraulic brakes shall be supplied by the O.E.M. The brakes shall be 4-wheel Disc type and be integrated into the Electronic Stability Control system. The parking brake shall be an independent mechanical brake, provided by the O.E.M.

Does your bid comply?  Yes_____  No_____

2.12  TIRES: All tires shall be identical make, tread type, size and load range. For aforementioned GVWR the tires shall be LT235/65R16C. In compliance with FMVSS 138.
2.13 SPARE TIRE: One (1) spare tire and wheel assembly shall be supplied. When
the tire is to be carried on the unit, the tire shall be mounted between the OEM frame rails
under the rear of the vehicle and OEM jack and tire tools shall be provided.

Does your bid comply? Yes____ No____

2.14 OCCUPANT RESTRAINT SYSTEM: The front, forward facing cab seats shall
be equipped with O.E.M. installed Type II lap and shoulder belt assemblies.

The seat belts shall have pre-tensioners built into the seatbelt assembly to take up belt
slack during a frontal collision. The seat belt assemblies shall meet or exceed F.M.V.S.S.
208 and 209. Any transition trim panels installed in the cab shall not interfere with the
swivel arc of the shoulder rings.

Does your bid comply? Yes____ No____

2.15 SUPPLEMENTAL RESTRAINT SYSTEM: O.E.M. air bags shall be installed on
the driver and passenger side. Permanent or quick release ambulance conversion
components shall not interfere with air bag deployment. The air bags must be
completely operational. Modifications by the secondary manufacturer are not acceptable.

Does your bid comply? Yes____ No____

2.16 FUEL TANK: The fuel capacity shall be at least 25 U.S. gallons. The fuel range
shall be at least 250 miles per KKK-A-1822F 3.4.8.

Does your bid comply? Yes____ No____

2.17 CAB SEATS: O.E.M. High back, stain-resistant cloth covered bucket type seats
shall be provided in the cab. The seats shall adjust forward and aft. Seat base must be
OEM. After-market seats and/or bases are not acceptable due to certification
requirements regarding S.R.S. (Air bag) deployment geometry. The seats shall have
external moisture repellant in case of contact with blood or body fluids.

Does your bid comply? Yes____ No____

2.18 CAB STEREO: An O.E.M. AM/FM/CD in dash radio shall be included with the
chassis and shall drive four (4) radio speakers.

Does your bid comply? Yes____ No____

2.19 MIRRORS: Dual electrically controlled power mirrors.

Does your bid comply? Yes____ No____
2.20 DOOR LOCKS: The cab doors shall have O.E.M. power door locks. A momentary rocker type switch shall activate (Lock/Unlock) both cab doors. A minimum of two (2) key fobs for remote lock/unlock shall be provided.

Does your bid comply? Yes____ No____

2.21 TRIM PACKAGE: The highest level trim package shall be supplied from the O.E.M. The package shall include high quality chrome-like bright work on the grille face. Bumpers shall also be standard equipment as supplied by the O.E.M. The O.E.M. grille work shall remain O.E.M.

Does your bid comply? Yes____ No____

2.22 UNDERCOATING: Chassis shall be fully undercoated as supplied by OEM chassis manufacturer.

Does your bid comply? Yes____ No____

2.23 WINDSHIELD SUN VISORS: OEM, stain resistant cloth covered sun visors shall be installed over the driver and passenger sides of the windshield.

Does your bid comply? Yes____ No____

2.24 RUNNING BOARD: Running boards shall be installed below the curbside sliding entrance door.

Does your bid comply? Yes____ No____

3.0 BODY CONFIGURATION

3.1 OVERALL LENGTH: The overall length of the vehicle shall not exceed two hundred forty inches (250") including any add on step bumper. The finished vehicle shall meet or exceed KKK-A-1822F 3.4.10.4 for Angle of Departure, Ramp Break Over and Angle of Approach.

Does your bid comply? Yes____ No____

3.2 BODY WIDTH: The body width shall comply with State requirements regarding width of vehicles permitted on its roads and highways. The body shall be approximately seventy (70.2") inches wide as provided by the O.E.M. chassis manufacturer, excluding mirrors, lights and accessories. Overall width including mirrors shall be approximately ninety seven (97.4") inches wide.

Does your bid comply? Yes____ No____
3.3 PATIENT COMPARTMENT HEADROOM: The headroom within the patient area of the ambulance shall be sixty eight and one half (68.5”) inches. The measurement shall be taken from the center of the patient compartment floor to the ceiling panel.

Does your bid comply? Yes_____ No_____

3.4 BULKHEAD CONFIGURATION: The bulkhead shall be a solid wall broken only by an 14”W x 18”H pass-through opening. There shall be a sliding Lexan window with at least 150 square inches of viewing area. The window shall be transparent, shatterproof and shall have a full-length extruded handle along the leading edge.

The bulkhead shall be ¾” CNC cut single piece plywood with a single piece CNC cut and formed .0625 stainless steel panel laminate on the patient side of the bulkhead wall and a ¼” gray carpet material on the cab side. The bulkhead shall be secured at the floor and at the ceiling.

Does your bid comply? Yes_____ No_____

3.5 COMPARTMENT CONFIGURATION: The minimum compartment dimensions are shown in the CAD drawings attached to the Specification.

Does your bid comply? Yes_____ No_____

3.6 SPARE TIRE STORAGE: A full size, fully inflated spare tire matching the wheels and tires mounted on the chassis shall be mounted in the spare tire carrier located under the rear of the vehicle. An O.E.M. jack and tire tools shall also be provided and shipped loose.

Does your bid comply? Yes_____ No_____

4.0 BODY CONSTRUCTION - GENERAL

The ambulance body shall be all steel as provided by the OEM chassis manufacturer. The body sheet metal shall be designed to resist deflection and penetration and withstand conditions as per Federal Specification KKK-A-1822F 3.10.5 and AMD Standards 001- Ambulance Body Structure Static Load Test, 002- Body Door Retention Components Test. These requirements shall be tested by the OEM chassis manufacturer and passed through to the ambulance manufacturer. The following testing requirements shall be the responsibility of the ambulance manufacturer and be part of the certification documentation for KKK-A-1822F: AMD 007- Patient Compartment Carbon Monoxide Level Test, AMD-010- Water Spray Test, and AMD-013- Weight Distribution Guidelines.

Does your bid comply? Yes_____ No_____

4.1 BODY STRUCTURE: The continuity of the body structure shall not be broken by removing sections of the roof panel to install a raised roof cap. The OEM
medium roof, standard configuration shall be provided and compliance with the requirements of AMD-001 testing as described in Section 4.0 shall be passed through from the OEM chassis manufacturer to the ambulance manufacturer. Any additional structural members for support of seat belts, lighting, overhead grab rails, cargo net or other devices shall be MIG (metal inert gas shielded) welded into the existing OEM body structure at junction points acceptable to and approved by the OEM.

Does your bid comply?    Yes_____ No_____

4.2 BODY WARRANTY: The body shall carry the OEM chassis manufacturer’s Standard Warranty as described in the OEM documents included with the vehicle.

Does your bid comply?    Yes_____ No_____

4.3 BODY INSULATION: The insulation material shall be 2” thick, fiberglass batting securely glued in place between the outer body wall and the inner wall of the patient compartment. The insulation shall cover all of the area between the outer skin and the interior of the unit.

Does your bid comply?    Yes_____ No_____

4.4 WELD QUALITY: All welds performed by the ambulance manufacturer within the OEM body shall meet American Welding Society codes for structural and sheet welding. All weld sites shall be cleaned prior to welding. All welds shall be free of cracks, cavitations, oxidation and foreign substances. All MIG welds shall be shielded with Argon, during the process.

Does your bid comply?    Yes_____ No_____

4.5 PREPARATION FOR SURFACE COATING: Should the customer require the body to be painted a different color than the OEM paint or require paint striping or graphics, all skin surfaces destined to be painted shall be resurfaced and primed with chromate etching primer prior to assembly following the warranted procedure as established by the paint supplier.

Does your bid comply?    Yes_____ No_____

5.0 FLOOR STRUCTURE

5.1 FLOOR MEMBERS: The floor shall be at the lowest level permitted by clearances and shall meet the floor height requirements of KKK-A-1822F, 3.4.10.6. The floor structure shall consist of the structure provided by the OEM chassis manufacturer. There shall be 3/8” steel plates placed outboard of and under the OEM floor structure to facilitate mounting of the Technician’s seat base. A 3/8” plate shall also be installed below the OEM floor to support the cot retention front antler hardware. The floor weight bearing capability shall be compliant with AMD Standard 020- Floor Distributed Load Test, S4.3 Bariatric Load.
5.2 CARBON MONOXIDE PROTECTION: To prevent carbon monoxide penetration into the patient compartment, it is imperative that the entire underside of the modular body be sealed. All hollow corners shall be sealed with either expansion foam or sealed metal plates screwed into place. This completed vehicle shall be compliant with AMD Standard 007- Patient Compartment Carbon Monoxide Test.

Does your bid comply? Yes_____ No_____

6.0 SIDE STRUCTURE

SIDE STRUCTURAL MEMBERS: The side structure of the body shall be as provided by the OEM chassis manufacturer with additions by the ambulance manufacturer for purposes of providing adequate seat belt mounting structures as required by KKK-A-1822F and associated AMD Standards. There shall be a 1.5” x 1.5” x .250” wall steel tube frame with 3/8” support plates welded into the curbside wall structure to facilitate the mounting of the seat belt assemblies. This structure shall be MIG welded into the OEM body structure. This mounting frame shall be pull tested at two positions for standard lap belts and at two position for four, five or six point seat belt assemblies. The testing shall be done in compliance with the latest AMD/SAE standards for these mounting devices.

Does your bid comply? Yes_____ No_____
Does your bid comply?   Yes_____   No_____

8.3  WINDOWS: All entry doors shall be equipped with an OEM windows. All glass shall be tinted safety glass compliant with FMVSS 205.

Does your bid comply?   Yes_____   No_____

8.4  DOOR CHECKS: All doors shall be equipped with OEM supplied door checks (hold-opens). The curbside sliding entry door shall have a hold-open stop integral to the sliding door track. Release of this stop shall be accomplished by squeezing the exterior door handle and pulling the door forward to close. Door checks for the rear doors shall be hinged, sliding guides and shall be removable from the rear door posts to allow the doors to open to 180-degrees.

Does your bid comply?   Yes_____   No_____

9.0  CORROSION: Anti-electrolysis procedures

9.1  EXTERIOR FASTENERS: Dissimilar metal contact is known to cause corrosion at fastener sites. All exterior device fasteners, especially light fasteners, shall not contact the painted aluminum surface. All fasteners that are NOT stainless steel or plastic bodied are considered dissimilar. Each hole drilled after the prime and paint process shall be treated with an Electrolysis Corrosion Control compound prior to installation of the mounting screws. All mounting screws shall be stainless steel and shall be coated with the Electrolysis Corrosion Control compound prior to installation.

Does your bid comply?   Yes_____   No_____

10.0  REAR BUMPER

10.1  FRAMING: The rear step bumper shall meet or exceed KKK-A-1822F 3.9.6 and be compliant with AMD Standard 018. The bumper shall be bolted directly to the chassis frame. In addition the top of the bumper shall be mounted below the OEM rear bumper, to facilitate entry into the rear of the ambulance. The steel bumper frame shall be powder coated black for a durable, rust-free finish.

Does your bid comply?   Yes_____   No_____

10.2  CENTER STEP: A flip up step shall be provided to allow closer access to the patient compartment floor. The step shall have a grip strut surface for aggressive traction. Snow and ice shall not compromise the level of traction on the center step. A stainless steel piano hinge shall have a staked in, ¼”diameter pin, one inch knuckles and Type-F ¼”-20 stainless steel bolts every four inches.

Does your bid comply?   Yes_____   No_____
10.3 OUTER BUMPER PODS: The step bumper shall have an aesthetically pleasing appearance. The outer bumper pods shall be covered in polished aluminum diamond plate. The outer corners shall be rounded to eliminate sharp corners around the working area.

Does your bid comply? Yes_____ No_____

11.0 BODY PROTECTION

11.1 REAR ENTRY DOOR JAMB: In addition to the OEM formed steel frame and the OEM composite door sill/step at the rear entry doors there shall be a full width, formed, stainless steel threshold installed to protect the floor to provide a smooth transition between the OEM components and the vinyl floor.

Does your bid comply? Yes_____ No_____

12.0 CABINETRY

12.1 SUBSTRATES: The interior cabinets and components shall be constructed of high quality, domestic, B-C or A-C CNC cut plywood. The exposed layers shall be hard wood on both sides of the sheet. The lower cabinet shall be covered with a single sheet of CNC cut .0625 stainless steel extending all the way to the vinyl floor. The upper cabinet shall be covered with a single sheet of CNC cut .0625 stainless steel that is break formed over the top edge of the cabinet and extending beyond the back of the 3/4” substrate with CNC penetrations provided for securing the cabinet top at each OEM framing point.

Does your bid comply? Yes_____ No_____

12.2 CABINET INTERIOR FINISH: The cabinet interior cases shall be made from HD vacuum formed ABS fitted with a HD back plate on each end for securing the tracking for the adjustable shelves. The formed ABS shall be secured around the entire perimeter of the cabinet opening prior to installation of the cabinet glass track framing.

Does your bid comply? Yes_____ No_____

12.3 FLOOR AND SUBSTRATE: The patient compartment subfloor shall be 3/4” thick, 7-ply, exterior grade, A-C plywood. The vinyl floor covering shall be Mannington Insight Gray or a Lonseal product of the customer’s choice.

Does your bid comply? Yes_____ No_____

12.4 STAINLESS STEEL LAMINATE: The streetside cabinet wall upper and lower cabinet sections along with the bulkhead wall shall be laminated with .0625 stainless steel laminate to provide a permanent, wear resistant finish that will not be subject to cracking. The A/C-heat plenum chase shall be covered with a CNC cut and formed black, powder coated steel cover.
12.5 CABINET ASSEMBLY: To maximize fastener bite, cabinet substrate parts shall be stapled with pneumatic fired equipment. The length of the fastener shall be at least 2.25 times the thickness of the material being pierced. Staples shall be placed on two-inch intervals along the corner joints. In addition to staples, the entire cabinet assembly must be screwed together with a minimum #8 screw size and a length not less than 2.25 times the thickness of the pierced substrate. Screw heads shall be counter-sink type and driven flush.

12.6 CABINET TRIM: All trim throughout the interior conversion shall be anodized aluminum or formed stainless steel. All exposed corners within the patient compartment shall have either padded or rounded corners. The anodized and stainless trim materials shall be installed with a high strength adhesive with any excess adhesive-sealant removed. To facilitate cleaning and reduce the propensity for fluid borne contamination, the use of screws is not acceptable.

12.7 FIT AND FINISH: Mitered joints throughout the interior conversion shall have a gap-less, hairline fit. Openings and misalignments at the corners are not acceptable. Doors shall be warp free. The anodized aluminum glass track for the cabinet openings shall be reinforced and back welded to provide a strong and consistent finish. Sliding Lexan door assemblies shall be scratch free and all edges shall be smooth and free of saw marks and sharp edges. Cabinets shall fit tightly against the ceiling without the use of vinyl covered trim pieces to cover the seam between cabinets and ceiling.

12.8 FUNCTION: Doors shall fit the opening. Flush fitting doors shall have even door-to-opening spacing around the perimeter. All doors shall open and close bind-free. All hinged wood, powder coated metal or 3/8” polycarbonate doors shall have positive latches where latches are required.

12.9 SLIDING POLYCARBONATE DOORS: Polycarbonate shall hereinafter be identified as “Lexan”. All interior cabinets requiring the sliding, transparent Lexan door assemblies shall have a mitered, anodized aluminum frame. The Lexan shall be a minimum of 3/16 inch thick.

Each door shall be fitted with a full height, extruded aluminum door handle. The door pull extrusion shall also stiffen the ends of the doors. The door track/frame extrusion shall incorporate a flocked natural rubber track insert to prevent the doors from sliding free during transit. All extrusions shall be anodized.
13.0 CABINET CONFIGURATION

13.1 STREET SIDE: A Full Wall of cabinetry shall be provided on the street side. The cabinets shall be easily accessible over the primary cot. The cabinet configuration and dimensions are described in the CAD drawings attached to this specification. The streetside cabinet shall be divided into three sections including upper storage, the A/C-heat plenum and the lower cabinet. The upper cabinet shall include two long upper storage cabinets, the rear exhaust vent and the electrical control and distribution cabinet at the front. The upper/center cabinet shall be designed to provide balanced airflow through a ducted plenum. The lower cabinet shall include four large storage cabinets, the forward action area work area, lower access to a storage area for the standard inverter prewire, the return air for the A/C-heater unit and rear access to the horizontal storage area for the backboards.

13.2 CURB SIDE: A CNC cut, formed and welded .090” aluminum squad bench base shall be provided. The squad bench base shall be powder coated prior to installation and a 6” stainless steel kick plate shall be installed extending from the floor up along the full length of the squad bench base. The squad bench top and lid shall be CNC cut and full perimeter routed ¾” HDPE and the hinged lid portion shall be attached with four HD stainless steel hinges that are through bolted for security. There shall be a TriMark powder coated black latch recessed into the face of the squad bench base for securing the squad bench lid.

The squad bench shall provide seating for two-positions. Two sets of Type I lap belts shall be supplied. The belts shall restrain two seated occupants or one secondary patient, on a backboard. All seat belts and anchorage shall comply with F.M.V.S.S. 209 and 210. A padded back and headrest shall be supplied for all seated personnel along the squad bench. The cabinet configuration and dimensions shall comply with the drawings attached.

The curbside wall shall be a single piece formed fiberglass wall. The wall shall include recess-mounting areas for the O2 receptacle, the 125VAC/12VDC receptacles and the mounting points for the cargo net. The fiberglass shall follow the contour of the OEM sidewall and structural frame support, will follow the contour of the OEM side entry door and terminate in an aesthetically pleasing form and be finished with a high gloss gray gel coat finish.

Located at the head of the squad bench shall be a separate hinged door with “BIOHAZARD” symbol for access to drop-in sharps and waste containers. Access to these containers shall be by raising the squad bench lid.
13.3 CARGO NET: A cargo net-type restraint device shall be installed at the head of the Squad Bench to assist in retaining equipment being carried on the squad bench. The net shall be attached through ¼ steel taping plates at two points on the ceiling and two points on the wall with ANCRA quick connect cargo fittings and to the floor with seat belt quick release style fittings bolted through ¼” plates installed below the OEM floor.

13.4 SOFTNET STORAGE: Elasticized netting shall be installed above the head pad over the Squad Bench to provide storage area for “soft” supplies like oxygen masks, tubing, etc. This netting shall extend the full length of the curbside wall from the oxygen outlet to the rear door head pad.

13.5 RIGHT FRONT CABINET: The right front cabinet is hereinafter known as “ALS Cabinet”. The ALS cabinet shall be constructed of CNC cut gray HDPE material. There shall be a lower open storage area and a mid-level 747 locking storage area with a fixed upper shelf. There shall be a 125VAC/12VDC receptacle mounted in the left hand corner just above the fixed upper shelf. Installed forward of this cabinet shall be a partitioned area nine (9”) inches wide to accommodate a vertically positioned stair chair storage area. There shall be a locking drug storage cabinet located above the stair chair storage area. All areas in the ALS Cabinet shall be accessible from the interior of the vehicle or with the curbside door in the open position.

13.6 ACTION AREA COUNTERTOP: The countertop surface shall be laminated and color-coordinated with the cabinetry. The edge of the action area shall have a lip to prevent items from sliding to the floor. The Action Area will have the dimensions as shown on the attached CAD drawings. Above the action area there shall be installed in a recessed cabinet, three glove holder boxes. The glove holder cabinet shall have a slotted, hinged, access door.

13.7 TECHNICIAN’S SEAT: The Technician’s seat shall be steel framed, high back EVS 1769 chair with an integral Type II lap/shoulder belt. The seat shall be color matched to other upholstery within the patient compartment. The seat base shall be a black, powder coated steel box designed to facilitate mounting the seat and to accommodate the horizontal/transverse O2 storage track. The Technician’s seat shall be fastened with Grade 8 fasteners through the top of the seat base. The seat base shall be
secured with Grade 8 fasteners through the OEM floor at the outboard ends to avoid any OEM no-drill zones with 3/8” steel mounting plates located below the OEM floor. The seat base shall also be bolted through the solid bulkhead wall into a custom ¼” powder coated steel support frame that is also bolted through the OEM floor at the outboard ends of the support frame. The manufacturer shall provide evidence that the seat and mounting base have been tested by a third party testing facility and that the mounting configuration is in full compliance with current AMD/SAE/FMVSS test standards.

Does your bid comply? Yes_____ No_____  

13.8 OCCUPANT HEAD CLEARANCE ZONES: All designated occupant seating positions in the vehicle described in the Specification shall comply with AMD Standard 025- Measuring Guidelines: Occupant Head Clearance Zones.

The patient compartment headliner shall be a single piece, polished fiberglass liner. The headliner shall include recessed mounting points for eight (8) Whelen 8” round LED dome lights, a recessed mounting race for the overhead grab rail and a designated mounting points for the cargo net. The headliner shall follow the contour of the OEM ceiling meeting the form of the OEM side entry door and rear doorjamb assemblies in an aesthetically pleasing form.

Does your bid comply? Yes_____ No_____  

14.0 UPHOLSTERY

14.1 UPHOLSTERY MATERIALS: All padding and upholstered seating shall be covered in vacuum formed vinyl. Sewn, exposed seams in the seat covers and cushions are not acceptable.

The color shall be selected by the purchaser to coordinate with the laminate selected.

Does your bid comply? Yes_____ No_____  


Does your bid comply? Yes_____ No_____  

15.0 INTERIOR HARDWARE

15.1 OVERHEAD ASSIST RAIL: This rail shall be naturally accessible to assist working attendants in maintaining their balance. The rail shall meet or exceed Federal Specification KKK-A-1822F and comply with AMD Standard 008- Patient Compartment Grab Rail Static Load Test. The rail shall be 1.25” diameter, formed stainless steel and 72” long. The rail shall be located over the primary patient.
15.2 COT RETENTION DEVICE & PRIMARY COT: The main cot retention device shall be Ferno Washington 175-3 or Stryker 6371 single position mount with the fixed wall mount secured through the lower main into a formed ¼” steel frame that is bolted through the floor and the mount for the removable antlers bolted through the OEM floor and into 3/8” taping plates. The purchaser shall specify the model of mount and cot to be retained by the device. The installed cot retention device shall be tested in compliance with the current AMD/SAE testing standards.

Does your bid comply? Yes_____ No_____

16.0 OXYGEN, VACUUM SYSTEMS

16.1 MAIN OXYGEN SUPPLY: Accommodation shall be made to carry and secure one (1) M-sized oxygen cylinder. The cylinder and its retention components shall be located in the space along the bulkhead wall at the floor. This transverse mounting configuration shall include a slide out tray specifically designed and tested to accommodate this configuration.

The oxygen system shall include a 50 PSI, pre-set Oxygen Regulator. Additionally, an electric valve control with a manual by-pass device shall be installed with the On-Off switch on the rear switch panel and the manual by-pass beside the oxygen outlet on the Action Area panel.

Does your bid comply? Yes_____ No_____

16.2 OXYGEN OUTLETS: Two (2) Oxygen outlets shall be provided in the Action area panel. The outlet latches shall be Ohio style, quick connects.

One (1) Oxygen outlet shall be located on the wall above the forward section of the squad bench. Outlet latch shall be Ohio style, quick-connect.

Does your bid comply? Yes_____ No_____

16.3 OXYGEN HOSES: All oxygen system service hoses, fittings and devices shall be made of non-ferrous materials. Hoses used to pipe Medical Oxygen shall be ¼” inside diameter with an abrasion resistant, green colored, electrically conductive outer jacket. All hoses shall withstand a system test pressure of 200 PSI test as prescribed in Federal Specification KKK-A-1822F 4.4.1 and AMD Standard 015- Ambulance Main Oxygen System Test. Each ambulance shall be tested. “Type Testing/Certification” is not acceptable.

Does your bid comply? Yes_____ No_____

Page 16 of 24
16.4 **VACUUM (SUCTION) SYSTEM:** A 12-Volt DC electric vacuum pump shall be installed in the lower Main cabinet wall forward of the HVAC unit and behind a black, louvered, powder coated access panel. The pump shall meet performance guidelines set forth by Federal Specification KKK-A-1822F 3.12.2 and AMD Standard 021- Aspirator System Test, Primary Patient. A variable vacuum regulator and gauge panel shall be installed in the action area control panel. The vacuum regulator shall control the vacuum pressure delivered to a Rico RS-4X collection system with a disposable collection canister. The Vacuum gauge shall not be mounted on the collection canister but on the Action Area wall and be hard-plumbed to the electric vacuum pump. Each ambulance shall be tested. “Type Testing/Certification: is not acceptable.

Does your bid comply?  Yes_____  No_____  

17.0 **ELECTRICAL SYSTEM – 12-Volt Direct Current**

The 12 VDC Electrical system installed in this vehicle must comply with AMD Standard 005- 12-Volt DC Electrical System Test. This electrical System shall be covered under the manufacturer’s Warranty for a period of 72 months (6 yrs) or 72,000 miles which ever shall occur first. The electrical distribution panel shall be housed in a dedicated cabinet located on the front bulkhead. This cabinet shall have a black, powder coated aluminum door, louvered for ventilation and with a locking latch for security of the system.

17.1 **GENERAL GROUNDS:** To comply with federal specification KKK-A-1822F 3.7.12 plus enhance ground quality and reduce trouble-shooting time, all devices wired within the ambulance conversion shall be centrally grounded on a ground bar located in the Electrical Cabinet. The ground bar is grounded to the chassis frame by a 2AWG cable and attached in the same manner as the braided body ground cables. Each device shall have a separate ground wire routed to a central buss bar then grounded via fine strand cable to the module body.

Does your bid comply?  Yes_____  No_____  

17.2 **12 VOLT WIRE:** All wires within the ambulance harnesses shall meet Federal Specification KKK-A-1822F 3.7.2 and 3.7.2.1. All wire insulation shall be GXL cross-linked polyethylene.

Permanent wire identification and wire function shall be stamped on 4” centers along the full length of the wire. Wire conductors shall be stranded copper. Single strand copper conductors are not acceptable due to vibration concerns and stiffness that promotes loosening of the terminals.

Does your bid comply?  Yes_____  No_____  

17.3 **WIRE PROTECTION:** All wire within the conversion shall be protected and run in split-convoluted loom with a melting temperature of 300 degrees Fahrenheit. All wire harnesses shall be clamped and routed to eliminate possibility of damage due to
cut/chaffed wire. Grommets made of rubber or plastic shall be used where harnesses pass through metal or wood. Large holes and irregular shaped wire passages shall use automotive edge trim to protect the wire conduit/loom. Wire harnesses shall be neatly clamped into protective routing areas away from heat sources, unfriendly edges or moving devices.

Does your bid comply? Yes_____ No_____

17.4 CIRCUIT BREAKERS: All conversion 12VDC circuits shall be protected by non-proprietary, automatic reset, circuit breakers. The trip value for the breaker shall not exceed 80% of the amperage rating of the weakest component in the circuit. Branch circuit wire sizes shall be rated 125% of the expected load per KKK-A-1822F 3.7.2.1.

Does your bid comply? Yes_____ No_____

17.5 12 VOLT DC OUTLETS: Two 12 Volt DC, 20 Ampere, cigarette style outlets shall be supplied in the action area, (1) on the ALS cabinet wall and (1) on the curbside wall above the squad bench. Each outlet shall be separately protected and shall be electrically isolated from other electrical functions on the vehicle. The outlets shall be wired per Federal Specification KKK-A-1822F 3.7.7.3.

Does your bid comply? Yes_____ No_____

18.0 ELECTRICAL SYSTEM- 125 VOLT Alternating Current

18.1 The 125 VAC Electrical System described in this Specification shall comply with AMD Standard 009- 125-Volt AC Electrical Systems Test. This electrical System shall be covered under the manufacturer’s Warranty for a period of 72 months (6 yrs) or 72,000 miles which ever shall occur first.

18.2 PRIMARY SHORELINE INLET: A 125 volt, 20 amp (20A), 60 Hz shoreline inlet shall be provided on the module streetside, positioned rearward of the streetside front compartment.

This inlet shall supply power to all interior 125VAC outlets. The inlet shall be grounded to keep continuity with the G.F.I. breaker in the building in which the vehicle is housed or where it is most frequently connected to shore power. The inlet shall have a spring-loaded, weatherproof cover. The inlet must be a “male” plug configuration to accommodate the “female” plug on the shoreline cord. A permanent, aluminized vinyl label, stating voltage and amperage shall be located above the inlet in compliance with KKK-A-1822F 3.7.8, 3.7.8.1.

Does your bid comply? Yes_____ No_____

18.3 INVERTER PRE-WIRE: Accommodation for future installation of an inverter/battery charger shall be made and located behind an access panel located in the lower main cabinet. The accommodation shall include a pre-wired connection to the shoreline
inlet and output wiring to all 125 Volt AC outlets provided in the vehicle. There shall be a single on/off switch located on the rear action panel. This pre-wiring shall be in accordance to KKK-A-1822F 3.7.8.3 and Section 250-6 (Portable and Vehicle Mounted Generators) of the National Electrical Code (NEC).

Does your bid comply? Yes______ No______

18.4 BATTERY CHARGER: To provide protection for the vehicle’s battery system a 12 VDC, 45-amp battery charger shall be installed in the lower area behind the main wall with access through a removable access panel.

Does your bid comply? Yes______ No______

18.5 125 OUTLET: A 125 Volt, hospital grade, straight blade outlets shall be provided (1) on the wall of the main action area, (1) on the ALS cabinet and (1) on the curbside wall at the head of the squad bench. The outlets must be grounded and protected by a G.F.I. (Ground Fault Interrupter) breaker. The outlets must be illuminated by a green indicator light when power is applied to each outlet.

Does your bid comply? Yes______ No______

19.0 ENVIRONMENTAL

19.1 REAR HEATING/AIR CONDITIONING: Air Conditioning is hereinafter referred to as A/C. The module shall have an additional, self-contained A/C evaporator unit complete with dual blower motor driven, high output fans. The fans shall be three speeds and shall contain a 600 CFM fan. The A/C unit shall also incorporate a hot water heater core for heat. Both discharge and return heater hoses shall have automatic, vacuum operated shut-off valves to prevent water/coolant flow through the coil during A/C operation. Heated or cooled air shall be delivered through a ducted system with five adjustable, louvered vents located in an angled panel between the streetside overhead cabinets and the lower main cabinets. The HVAC unit shall be housed in a dedicated space in the lower main cabinet wall and be accessible through a black, powder coated, louvered aluminum panel.

The valves shall operate with the heater/defrost controls. The unit shall be rated at least 32,000 British Thermal Units (BTU) in A/C Mode and 36,000 BTU in Heater Mode. The Vehicle A/C – Heater system must meet or exceed federal specification KKK-A-1822F 3.13.1 thru 3.13.3 and must be compliant with AMD Standards 011- Equipment Temperature Test, 012- Interior Climate Control Test.

Does your bid comply? Yes______ No______

19.2 REAR HEAT/AC CONTROLS: A three-way ON/OFF switch shall be located in the action area and the cab console. The aforementioned switches will not control fan speed, but indicate the selection of Heat/Off/Cool. A separate three-speed fan speed control switch shall be located in the action area control panel. Temperature settings shall be controlled by a simple thermostatic control mounted on the Action Area switch panel.
19.3 HVAC SYSTEM INSTALLATION & WARRANTY:
The auxiliary heating and air conditioning system shall be installed in the ambulance at the ambulance manufacturer’s facilities by technicians employed by the manufacturer of the HVAC equipment. Said technicians shall document the installation on forms provided by the HVAC manufacturer and on forms required by the ambulance manufacturer. Warranty on the installation of, and the equipment content and performance of the equipment, shall be the sole responsibility of the HVAC manufacturer.

Does your bid comply? Yes______ No______

20.0 CONSOLES, SWITCH PANELS

20.1 CAB CONSOLE: The ambulance conversion control console shall be ergonomically designed, formed ABS matching the contours of the OEM dash panel. The console shall be easily removed from the engine cover to facilitate maintenance and service. The console shall include an electronic siren and a contoured switch panel.

The siren control head and contoured switch panel shall be within easy reach of the passenger and driver.

Does your bid comply? Yes______ No______

20.2 SWITCH PANEL, CAB CONSOLE: A switch panel made from a thick, translucent, acrylic sheet shall be installed on the outboard wall of the Action Area. The panel shall be coated with a black colored, rigid plastic film that evenly disperses label and indicator illumination. All switches and controls shall have backlighted legends indication function and status. The Switch Panel shall have the following minimum controls and indicators:

1. Door Open indicator
2. Battery On indicator
3. MASTER Emergency Switch, red bezel
4. Primary/Secondary Mode Switch
5. Light Bar Switch
6. Siren/Horn Switch
7. Left Flood Switch
8. Right Flood Switch
9. Rear Flood Switch
10. Back UP Alarm Switch
11. Module Disconnect Swch
12. Digital Volt/Amp Meter

Does your bid comply? Yes______ No______

20.4 SWITCH PANEL, ACTION AREA: A switch panel made from a thick, translucent, acrylic sheet shall be installed on the outboard wall of the Action Area. The panel shall be coated with a black colored, rigid plastic film that evenly disperses label and indicator illumination. All switches and controls shall have backlighted legends indication function and status. The Switch Panel shall have the following minimum controls and indicators:
1. Dome Lights, Cot Switch    7. AC/Heat Fan Switch
2. Dome Lights, Bench Switch (Hi/Lo)  8. Electric O2 Valve w/By-Pass
4. Exhaust Vent Switch       10. Fan Rheostat (Lo-Med-Hi)
5. Inverter (optional)       11. Thermostat
6. AC/Heat Selector Switch    12. Auxiliary Switch

Does your bid comply?    Yes______ No______

21.0 VISUAL CONSPICUITY - EXTERIOR LIGHTING

21.1 WARNING LIGHTS: The warning light system shall meet or exceed KKK-A-1822F as demonstrated with the documentation provided by the lighting manufacturer.

The prescribed warning lights shall be configured like, and flash in compliance with, KKK-A-1822F 3.8.2.1, and Table 1. All of the exterior warning lights shall be LED light heads.

A. A low profile fiberglass fairing shall provide a flush vertical mounting surface for (4) Whelen 7x3 Red LEDs and one (1) Whelen 7x3 White LED. The fiberglass fairing shall be mounted above the cab on the OEM roof in such a manner that there are “no” visible or external mounting devices and will be full perimeter sealed to provide a smooth, leak resistant transition between the chassis body and the fairing. The two outer Red LEDs and the center Clear LED shall flash in accordance with KKK-A-1822F on the front of the body. The two inboard RED LEDs shall be wired on a separate switch.

B. The side body warning lights shall include (2) Whelen M9V2 combination emergency/scene lights mounted with polished chrome bezels on each side of the van body. The polished chrome bezels shall be designed to fit the contour of the OEM van body and will include a rubber-mounting gasket. These light heads will be wired to Deutsch connectors on the light heads with waterproof Deutsch bulkhead connectors permanently mounted to the OEM body to prevent water penetration.

C. The upper rear warning lights shall consist of (1) Whelen 7x3 Red LED and (1) Whelen 7x3 Amber LED mounted on a Cast Products housing at the top of each rear door. When the doors are open, there shall be (2) Whelen Red/Amber Micron LEDs mounted on the upper rear doorjamb.

D. GRILLE LIGHTS: Grille lights shall be Whelen LINZ6R LED light heads mounted in the OEM grille. These LEDs shall flash in accordance with KKK-A-1822 F.

E. INTERSECTION LIGHTS: Intersection Lights shall be surface mounted Whelen M2WR wide-angle red LED w/chrome bezels mounted on the front fenders of the vehicle.
F. SCENE LIGHTS: Two scene lights shall be provided on each side of the module. The lights shall be an integral part of each M9V2C LED combination light providing downward illumination. The curbside lights shall come on when the curbside entry door is opened.

G. LOAD LIGHTS: Two load lights shall illuminate the rear of the module when the rear doors are open. The lights shall be Whelen PELCC LED illumination lights mounted to provide illumination. Both rear lights shall come on with the opening of the leading rear access door. These rear load lights will also activate when the rear load switch in the cab console Switch Panel is activated. These lights are contained in an angled chrome bezel located at the top of the rear entry doors.

21.2 DUAL MODE FLASHER: A dual mode Primary/Secondary flasher shall be provided for the vehicle emergency warning light system as required in KKK-A-1822F.

Does your bid comply? Yes_____ No_____

21.3 TAIL LIGHTS: Tail light configuration shall be as provided by the OEM chassis manufacturer and be compliant with FMVSS 208 and functioning as Tail/Brake, Turn Signals and Back-up Lights.

Does your bid comply? Yes_____ No_____

21.4 LICENSE PLATE LIGHT: The license plate holder shall provide illumination to the license plate with the chassis park light circuit on.

Does your bid comply? Yes_____ No_____

21.5 PERIMETER LIGHTING CERTIFICATION: To assure that the exterior work lighting is adequate to perform EMS functions in a variety of settings that may require exterior illumination, the Scene and Load lights installed on this vehicle shall comply with AMD Standard 024- Perimeter Illumination Test.

Does your bid comply? Yes_____ No_____

21.6 SPOT LIGHT: A hand held 400,000 candlepower, blue-eye spotlight shall be provided in the cab. A chromed hook with spring retainer shall be included to stow the light.

Does your bid comply? Yes_____ No_____

22.0 AUDIBLE CONSPICUITY
22.1 ELECTRONIC SIREN: The siren shall be a 200 watt Whelen WS295HFSA7 mounted in the engine cover console.

The siren speakers shall be dual 100-watt drivers and shall emit selected tones through cast aluminum speakers located through the front bumper. The siren speakers shall not block airflow into the grille per the OEM chassis manufacturer’s guidelines. The siren and speakers shall meet or exceed KKK-A-1822F 3.14.4 and be compliant with AMD Standard 023- Siren Performance Test and AMD Standard 006- Patient Compartment Sound Level Test.

Does your bid comply? Yes_____ No_____

22.2 BACK UP ALARM: The apparatus shall include a minimum 97 decibel back up alarm device. The alarm shall be automatically activated by shifting the vehicle transmission into reverse. The backup alarm shall include a rocker type cut-off switch located in the cab console Switch Panel. The alarm device shall be provided as required in KKK-A-1822F 3.15.2 and shall be compliant with SAE Standard J994.

Does your bid comply? Yes_____ No_____

23.0 INTERIOR LIGHTING

23.1 ACTION AREA LIGHTING: A 12-volt LED bar light shall be provided directly over the forward, street side work surface. A near flush, 16-inch type fixture shall be provided. The light shall have an on-off rocker switch on the rear control panel.

Does your bid comply? Yes_____ No_____

23.2 PATIENT COMPARTMENT DOME LIGHTS: The patient compartment shall have eight dual intensity Whelen LED dome lights in the ceiling. The domes centers shall be installed in two, four-light banks recessed into the fiberglass headliner. The streetside bank shall provide light directly over the patient; the curbside bank shall provide light directly over the aisle and squad bench. The dome lights and configuration shall meet KKK-A-1822F 3.8.4, 3.8.4.1 and be compliant with AMD Standard 016-Patient Compartment Lighting Level Test.

Does your bid comply? Yes_____ No_____

23.3 CHECK-OUT TIMER: A 5-minute checkout timer shall activate by opening the rear or side entry door when the battery switch is off. The curbside bank of dome lights shall turn on in the “low” mode. Following the first 5-minute cycle, the lights will deactivate. The cycle can be reactivated by closing, then re-opening the side or rear entry door.

Does your bid comply? Yes_____ No_____
24.0 COMMUNICATIONS EQUIPMENT

24.1 COMMUNICATIONS RADIO ANTENNA PRE-COAX: Two (2) RG58-U coaxial cables shall be supplied, terminated behind the driver’s seat. 12VDC power and ground leads shall be provide for each coaxial cable. There shall be an 18” service loop at the starting point and a 36” termination loop. A tag shall identify each coax provided.

Does your bid comply? Yes_____ No_____

25.0 PAINT, LETTERING, DECALS, MISCELLANEOUS

25.1 100% PAINTFILM COVERAGE: The body shall be painted OEM white.

Does your bid comply? Yes_____ No_____

25.2 PAINT AND COLORS: Should the customer require the body to be painted a different color than the OEM paint or require paint striping or graphics, all skin surfaces destined to be painted shall be resurfaced and primed with chromate etching primer prior to assembly following the warranted procedure as established by the paint supplier. Any painting performed by the ambulance manufacturer shall be covered under warranty for a period of not less than forty-eight (48) months (4yrs), and shall be sanctioned and warranted by the paint manufacturer.

Does your bid comply? Yes_____ No_____

25.3 LETTERING & DECALS: Federal Specification KKK-A-1822F “Star-of-Life” and “Ambulance” lettering shall be optionally provided and shipped loose with the exception of the roof mounted Star-of-Life decal, which shall be installed.

Does your bid comply? Yes_____ No_____

25.4 FIRE EXTINGUISHERS: In compliance with the Federal Specification KKK-A-1822F, there shall be two (2) 5lb. ABC rated fire extinguishers with mounting brackets. These extinguishers shall be shipped loose with the completed ambulance for installation by this agency.