Guilford County
STATE of NORTH CAROLINA

# Formal Bid Request
# For
# Three Ambulance Modules
# Event 511

Guilford County is seeking competitive Formal bids to establish a Price Only Contract for the purchase of Ambulances. The initial purchase will be for three (3), Type One - Configuration ambulance modules (s) for Guilford County Emergency Services, 1002 Meadowood Street Greensboro, NC. The purpose of this bid package is, therefore, to obtain competitive bids in accordance with the North Carolina Purchasing Laws and the Guilford County Purchasing Policies. Guilford County reserves the right to reject any and/or all bids. Guilford County also reserves the right to accept the bid most advantageous to Guilford County Emergency Services.

This Price Only Contract shall be for two (2) years with the option to renew for two (2) additional, one (1) year periods. This is a Price Only Contract, which means there are no guarantees as to the minimum amount of ambulance modules purchased or dollar amount expended.

No bid deposit or performance bond will be required for this bid process.

There will not be a Pre-Bid Conference held in connection with this bid package in that it is considered the specifications contained herein fully cover the purchase intent.

**ALL Bids are to be submitted online** via www.myguilford.com by the event close date and time. Also, please be advised that any additional information may be attached online or delivered hard copy to the Guilford County Purchasing Department, located in the Old County Courthouse, Suite B-32, 301 West Market Street Greensboro, NC 27401 by the event close date and time, **2:00 pm on Thursday, February 25, 2016** per the date and time stamp located in the Guilford County Purchasing Department.

**ALL QUESTIONS** must be submitted electronically by means of the Q & A Feature included within this bidding event. NO QUESTIONS will be answered by telephone, email, written correspondence or other means except as described herein. Answers to electronic questions properly submitted will be sent out electronically by means of the above described Q & A feature to all properly registered suppliers who received the Initial Notification of bidding event. Those suppliers who registered after the Event Preview date and time will not receive electronic correspondence relative to this Event. There shall be **no communication** with any Guilford County employees other than by means of the Q & A feature. Violation of this requirement may invalidate your proposal.

Terms and Conditions and the Non-Collusion Affidavit are attached to the event and should be reviewed.

The attached specification defines a heavy-duty, commercial emergency medical vehicle, built to withstand adverse driving conditions. The vehicle shall meet or exceed the latest revision to federal specification KKK-A-1822, Federal Motor Vehicle Safety Standards (FMVS.), National Truck Equipment Association (NTEA) Ambulance Manufacturer's Division (AMD) standards and Ford Qualified Vehicle Modifier (QVM) Program Truck Guidelines and SAE (Society of Automotive Engineers) Standards as well as all CAAS Vehicle Standards Development- CAAS GVS 2015.

This invitation is extended to all qualified vendors/manufacturers that are specifically in the business of building emergency medical vehicles and/or equipment.

This invitation is issued by:
Guilford County Purchasing Department
301 W. Market St., Basement Room 32
Greensboro, NC 27401

Contact Person: Shayla Parker, Buyer/Diversity Coordinator
Guilford County

Schedule of Events Applying to this Procurement

GENERAL CONDITIONS:

PARTY IDENTIFICATION:

AGENCY: "Agency" is hereinafter defined as the customer. The customer is an individual or a group of individuals whom represent the interest of the city, borough, county, parish, state or private enterprise and has been charged with the responsibility of purchasing one or more emergency medical vehicle(s).

BIDDER: "Bidder" is hereinafter defined as the vehicle manufacturer and/or its authorized representative. The bidder is an assigned representative who is authorized to commit to a contract with the "Agency".

VENDOR: "Vendor" is synonymous with "Bidder".
NOTICE TO BIDDERS: Bidders shall thoroughly examine any drawings, specifications, schedule, instructions and any other documents supplied as part of this invitation to bid.

Bidders shall make all investigations necessary to thoroughly inform themselves regarding the content of the written specifications, drawings and instructions supplied herein. No pleas of ignorance by the bidder pertaining to the content of the specifications, drawings, schedule or instructions will be considered by the agency once the deadline for bid submission has occurred. Failure or omission on the part of the bidder to make the necessary examinations and investigations into the content of the specifications shall not be accepted as a basis for making variations to the spec. Failure or omission by the bidder to make all clarifications or

explanations of exceptions and conditions that exist or that may exist hereafter shall NOT be accepted as a basis for making variations to the requirements of the agency or compensation to the bidder.

DEFINITIONS:

CLARIFICATIONS: Clarifications shall be written correspondence between the bidder, the agency and all other qualified bidders. A Clarification shall include the paragraph number, page number, the text with unclear content (as written in the specification) and the definition of the clarification requested. Verbal clarifications shall be documented in writing and distributed to all other qualified bidders at least two business days prior to the deadline for bid submission.

EXPLANATION OF EXCEPTIONS: Bidders may take exceptions to any part of the bid contained herein with a written itemized schedule. The schedule shall include the paragraph number(s), the text that the bidder feels he can not comply with an explanation why the bidder feels that the requirement is not in the best interest of the agency and/or an alternate bidder solution. Alternate bidder solutions may be considered by the agency, if the bidder can show the agency that the alternate solution is, in quality and quantity, equal to OR better than the specified item. This agency will share the exception/alternate solution with all other Qualified Bidders. Explanation of exceptions shall be documented in writing at least two business days prior to the deadline for bid submission.

CORE DESIGN INTENT: The core design intent of the specifications supplied herein is to purchase an ambulance with the highest level of engineering excellence. The "Core Design" intent of this vehicle shall be centered on the patient's need for pre-hospital care, in conjunction with a safe working environment for the Emergency Medical Personnel.

BID PACKAGES SHALL NOT TAKE TOTAL EXCEPTIONS: Bidders are required under this bid invitation to give, for the consideration of the agency, a proposal that will comply with the written specifications, drawings and schedules supplied herein. The specifications supplied represent a compilation of input from all disciplines of users, patients, maintenance and management personnel who are directly affected by the vehicle's performance.

Careful consideration pertaining to safety, configuration, construction, and workmanship are based on working experiences by all the personnel who have direct, working contact with the subject vehicle specified herein. The "core design" of this ambulance was created as a result of resolving issues and improvement suggestions that have originated from the personnel most QUALIFIED to make such input.

This agency makes no claim that ALL potential issues or improvements are included in the specifications supplied herein. This agency will consider any VALID concern by any bidder and will consider minor specification exceptions or alternates of equal or better performance, provided that the exception(s) are steered toward meeting the "Core design" intent AND the exception(s) are cleared up not less than two days prior to the bid opening date.

**Caution:**

A bidder who submits a bid that takes "Total Exception" and makes an offering of some "Standard" or "Stock" unit will be viewed by the agency as a bidder who did not make, and is not prepared to make, a valid bid, and is not qualified to manufacture the ambulance as specified herein. Alternate bids will NOT be considered.

AMBULANCE BOX QUANTITY: THIS AGENCY is currently seeking to purchase three (3) ambulance boxes per the specifications set forth in this solicitation for bid for Fiscal Year 2016. THIS AGENCY AND/OR other government or private agencies that qualify to purchase under this contract will reserve the right to increase the number of ambulance boxes purchased without incurring an obligation to obtain bids from other vendors for a period of one (1) year. An option for two (2) one (1) year renewals of this contract is requested with terms not to exceed CPI (Consumer Price Index) may be provided to the successful, qualified vendor who has performed satisfactorily to the original contract.

VENDOR QUALIFICATIONS:

FORD QVM: All Bidders shall be members in good standing of the Ford Motor Company's Qualified Vehicle Modifier Program (QVM). Each bidder shall supply a copy of their valid QVM Certification with their bid package. If for any reason the QVM Certification has been withdrawn or suspended by Ford Motor Company within the past five years, the bidder shall supply a full written explanation as to why it was withdrawn. The written explanation shall include any corrective actions taken to regain the QVM Certification.

PRODUCT LIABILITY INSURANCE: Proof of current liability insurance shall be supplied. The proof of insurance shall bear the insurance carrier's name, address and phone number. The proof shall also bear the name and address of the insured. This document shall contain the coverage schedule, explaining the type of insurance, the policy number, the effective date of coverage, the policy expiration date and the individual limits. The minimum amount of coverage shall be as follows:

Commercial General Liability - as follows:
Each Occurrence: $1,000,000
Damage to rented premises, each occurrence: $300,000
Medical Expenses: $50,000
Personal and Adv Injury: $1,000,000
General Aggregate: $4,000,000
Products - Comp/OP Agg: $4,000,000
Automotive Liability - Combined Single Limit: $1,000,000
Comp/Coll Ded: $1,000
Excess Liability - Umbrella Form
Each occurrence: $5,000,000
Aggregate: $5,000,000
Excess Liability: $20,000,000
Workers Compensation and Employers' Liability
E.L. Each Accident: $1,000,000
E.L. Disease policy - Each Employee: $1,000,000
E.L. Disease - Policy Limit: $1,000,000

NON-DISCRIMINATION AND EQUAL OPPORTUNITY: The Bidder/Contractor agrees to comply with all federal statutes relating to non-discrimination. These include but are not limited to:

(a) Title VI of the civil rights act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin;

(b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. 16811683, and 1685-1686), which prohibits discrimination on the basis of sex;

(c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), which prohibits discrimination on the basis of handicaps and the Americans with Disabilities Act of 1990;

(d) The Age Discrimination Act of 1974, as amended (42 U.S.C. 6101-6107), which prohibits discrimination on the basis of age;

(e) The Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse;

(f) The Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism;

(g) 523 and 527 of the Public Health Service Act of 1912 (U.S.C. 290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records;

(h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing;

(i) Any other nondiscrimination provisions in any specific statute(s) applicable to any Federal funding for this Agreement;

(j) The requirements of any other nondiscrimination statute(s) which may apply to this agreement.

DRUG FREE WORK PLACE: The Bidder shall conduct business as a Drug Free Workplace. The Bidder/Manufacturer and ALL of its sub-contractors shall provide notice to their employees and sub-contractors as required under the Drug-Free Workplace Act of 1988. A copy of Bidder's Drug-Free Workplace Policy shall be furnished to this agency upon request.

QUALITY MANAGEMENT SYSTEM REGISTERED: The manufacturer shall have a registration for ISO 9001: 2008 for their Quality Management System (QMS). The QMS provides establishment, documentation, implementation, maintenance and improvement of management systems that impact the final quality of the product. Registration of the vendor's QMS demonstrates an enduring commitment to quality, a sharp focus on the customer, and robust communication throughout the product process chain to the customer. This registration provides for oversight with routine inspection of the QMS to maintain certification status. Proof of certification shall be readily available upon demand. Proof of Certification shall be provided with bid during initial bid process

**NATIONAL TRUCK EQUIPMENT ASSOCIATION TESTING**

**AMD 001 - AMBULANCE BODY STRUCTURE STATIC LOAD TEST**: The ambulance described herein shall be type tested to the National Truck Equipment Association's Ambulance Manufacturing Division, Standard 001 - Ambulance Body Structure Static Load Test except the test weight shall be a minimum of 55,000 pounds. The test shall be conducted by an independent testing laboratory. The module body bid herein shall contain extrusion shapes and general structural layout identical to the test body used in the test.

**AMD 002 - BODY DOOR RETENTION COMPONENTS TEST:** The ambulance described herein shall be type tested to the National Truck Equipment Association Ambulance Manufacturing Division, Standard 002 - Body Door Retention Components Test. The test shall be conducted by an independent testing laboratory. The module body bid herein shall contain identical door extrusion shapes, door skin configuration and general structural layout as the test body used in the test.

Safety is this Agency's first concern. Entry and compartment door integrity is crucial to the safety of the patient, public, passengers and crew. If the Bidder has experienced any of the following door conditions as a result of collision, roll over or other accidental impact, then the Bidder shall supply the Agency with a report containing the date, a full explanation of the incident and corrective actions taken.

A) Any entry door rendered inoperative.
B) Any door that has come open.
C) Foreign object penetration into patient cabin through the body structure.

Catastrophic door failure during a collision indicates mechanical defects in the design, hardware and/or the direct construction of the modular door. Any AMD Standard 002 testing prior to the incident is deemed invalid, regardless of the expiration date of the original test.

**AMD 003 - OXYGEN TANK RETENTION SYSTEM STATIC TEST**: The ambulance described herein shall be type tested to the National Truck Equipment Association Ambulance Manufacturing Division, Standard 003 - Oxygen Tank Retention System Static Test. The test shall be conducted by an independent testing laboratory.

Safety is this Agency's first concern. Main cylinder control is extremely important and is crucial to the safety of the patient, public, passengers and crew. If the Bidder has experienced a cylinder rack separation from the oxygen compartment wall, OR if the cylinder has come loose from the cylinder restraining device, then the Bidder shall supply the Agency with a report containing the date, a full explanation of the incident and corrective actions taken to prevent future failures. Main Oxygen/Air Cylinders that come loose during a collision indicate mechanical defects in the design of the restraining device or the mounting method. Any AMD Standard 003 testing prior to the incident is deemed invalid, regardless of the expiration date of the original test.

**AMD 004 - LITTER RETENTION SYSTEM STATIC TEST:** The cot/litter retention system described herein shall be tested to the National Truck Equipment Association, Ambulance Manufacturing Division Standard 004 - Litter Retention System Static Test. The cot mount hardware, mounting method and floor reinforcement areas shall exceed the test as described in AMD 004. This test shall be conducted by an independent testing laboratory.

Safety is this Agency's first concern. Main cot/litter retention is critical to patient care. If the Bidder has experienced a litter ejection due to a hardware defect or a defect in the mounting method, then the Bidder shall supply the Agency with a report containing the date, a full explanation of the incident and corrective actions taken to prevent future ejections. Main Cot/Litter ejection's that occur during a collision indicates mechanical defects in the design of the restraining device or the mounting method; Therefore ALL Bidder AMD Standard 004 testing dated prior to the incident is deemed invalid, regardless of the expiration date of the original test.

**AMD 005 - 12-VOLT DC ELECTRICAL SYSTEMS TEST:** The 12-Volt DC Electrical System described herein shall be tested to the National Truck Equipment Association, Ambulance Manufacturing Division Standard 005 - 12-Volt DC Electrical System s Test. This test is valid for the test article vehicle ONLY. The test shall be conducted on EACH ambulance. The results of the test shall be recorded on an electrical system performance sheet and shall be included with the delivery documents. This test shall be conducted by a qualified quality control electrician at the ambulance manufacturing plant.

Reliability and Safety is this Agency's first concern. The 12-volt electrical system must be functional under all normal or adverse driving and operating conditions. Each electrical device, electrical component, wire, wire route and connection quality shall be tested for reliability as a "SYSTEM" on each vehicle sold. If the Bidder has experienced an electrical fire or an electrical failure resulting in a disabled ambulance going to an emergency call or during transportation, shall supply the Agency with a report containing the date, a full explanation of the incident and corrective actions taken to prevent future electrical failures.

**Low Voltage Electrical System Test- 2014**
When performing the AMD005 test in conjunction with the Federal of Star Ambulance Specification, KKK-A-1822, as the governing standard, the minimum electrical load shall consist of the following electrical equipment and systems:
1. Engine/transmission control system.
2. Headlights (low beam).
3. All FMVSS 108 lights.
4. Windshield wipers (low speed).
5. Cab air conditioning (at coldest setting with highest blower speed).
6. Radio in receiving mode (or equal load, if not equipped).
7. Patient module dome lighting (in the high intensity setting).
8. Patient module air conditioning (at coldest setting with highest blower speed).
9. Emergency warning lighting system (in the daytime “primary” mode).
10. 20 amp medical load or equal.

**AMD 006 - PATIENT COMPARTMENT SOUND LEVEL TEST:** The ambulance described herein shall meet or exceed the National Truck Equipment Association Ambulance Manufacturing Division Standard 006 - Patient Compartment Sound Level Test. The sound level in the driver or patient cabin shall be eighty decibels or less under the conditions described in AMD Standard 006.

**AMD 007 - PATIENT COMPARTMENT CARBON MONOXIDE LEVEL TEST:** The ambulance described herein shall meet or exceed the National Truck Equipment Association, Ambulance Manufacturing Division Standard 007 - Patient Compartment Carbon Monoxide Level Test. The patient and driver cabin shall be environmentally sealed from carbon monoxide gases that are emitted from internal combustion engines. The ambulance specified herein shall have safe carbon monoxide levels of ten parts per million or less while the vehicle is exposed to the conditions described in AMD Standard 007.

**AMD 008 - PATIENT COMPARTMENT GRAB RAIL STATIC LOAD TEST:** The patient cabin grab rails shall be tested to the National Truck Equipment Association, Ambulance Manufacturing Division Standard

008 - Patient Compartment Grab Rail Static Load Test. The ceiling mounted grab rails shall be subject to a three axis load of three hundred pounds.

The ceiling mounted grab rail shall not come loose from the ceiling or permanently deform. All mounting fasteners shall be threaded into metal structure not less than .125 inches thick.

**AMD 009 - 125-VOLT AC ELECTRICAL SYSTEMS TEST:** The patient cabin shall be wired per the National Truck Equipment Association, Ambulance Manufacturing Division Standard 009 - 125 -Volt AC Electrical Systems Test.

The ambulance wiring shall comply with the National Electric Code in effect at the time of manufacture of the ambulance. The system specified herein shall be a 2-wire system with a ground. All outlets and 120-volt hard wired devices, on the ambulance, shall have ground fault interrupter protection.

**AMD 010 - WATER SPRAY TEST:** The ambulance specified herein shall be water spray tested for water leakage into the patient's and driver's cabins. The door to jamb seal, window installation and seals shall be tested against leakage per the National Truck Equipment Association, Ambulance Manufacturing Division Standard 010 - Water Spray Test. This test shall be conducted on EACH ambulance by the quality assurance department.

**AMD 011 - EQUIPMENT TEMPERATURE TEST:** The ambulance and equipment specified herein shall operate satisfactorily operate between 30 degrees and 125 degrees Fahrenheit per the National Truck Equipment Association, Ambulance Manufacturing Division Standard 011 - Equipment Temperature Test. This standard must be type certified by an independent testing laboratory on a like test model.

**AMD 012 - INTERIOR CLIMATE CONTROL TEST:** The ambulance and equipment specified herein shall be equipped with a HVAC (Heating, Ventilation, and Air Conditioning) System that will meet or exceed the performance criteria set forth in the National Truck Equipment Association, Ambulance Manufacturing Division Standard 012 - Interior Climate Control Test. This standard must be type certified by an independent testing laboratory on a like test model.

**AMD 013 - WEIGHT DISTRIBUTION GUIDELINES:** The ambulance specified herein shall be weighed at the end of the ambulance manufacturer's production cycle to assure compliance with the National Truck Equipment Association, Ambulance Manufacturing Division Standard 013 - Weight Distribution Guidelines.

The vehicle specified herein must be weighed on a four point scale that measures the weight imposed on EACH wheel. The side to side weight difference tolerance shall not exceed five percent (5%).

The total weight imposed on the FRONT axle shall not exceed the chassis manufacturer's gross axle weight rating minus three hundred pounds.

The total weight imposed on the REAR axle shall not exceed the chassis manufacturer's gross axle weight rating minus one thousand pounds.

The aggregate total of all four points shall not exceed the gross vehicle weight rating minus eleven hundred pounds regardless of customer specified equipment.

**AMD 014 - ENGINE COOLING SYSTEM TEST:** The cooling system in the ambulance specified herein shall be tested to assure compliance with the National Truck Equipment Association, Ambulance Manufacturing Division Standard 014 - Engine Cooling System Test. The vehicle specified herein must be tested at the end of the ambulance manufacturers manufacturing cycle to determine if the cooling system capacity is adequate to maintain safe engine operating temperature at ninety five degrees, ambient temperature for one hour. EACH ambulance shall be checked to assure a leak and trouble free cooling system performance.

**AMD 015 - AMBULANCE MAIN OXYGEN SYSTEM TEST:** Each ambulance's main Oxygen System shall be tested to assure compliance with the National Truck Equipment Association, Ambulance Manufacturing Division Standard 015 - Ambulance Main Oxygen System Test. The subject vehicle specified herein must be equipped with an Oxygen system that can withstand a 150 PSI charge of dry air or Nitrogen for a period of four hours without a loss exceeding five pounds per square inch of pressure. The results of this test shall be posted inside the oxygen tank stowage compartment. A certificate shall be supplied, describing the test conditions, the initial test pressure, the final pressure (after four hours) and the name of the inspector who performed the test.

**AMD 016 - PATIENT COMPARTMENT LIGHTING LEVEL TEST:** The ambulance and equipment specified herein shall be equipped with patient compartment lighting that will meet or exceed the performance criteria set forth in the National Truck Equipment Association, Ambulance Manufacturing Division Standard 016 - Patient Compartment Lighting Level Test. This standard must be type certified by an independent testing laboratory on a like test model.

**AMD 017 - ROAD TEST:** The ambulance and equipment specified herein will meet or exceed the performance criteria set forth in the National Truck Equipment Association, Ambulance Manufacturing Division Standard 017 - Road Test. This standard must be type certified by an independent testing laboratory on a like test model.

**AMD 018 - REAR STEP AND BUMPER STATIC LOAD TEST:** The rear step and bumper shall be type tested to the National Truck Equipment Association, Ambulance Manufacturing Division Standard 018 - Rear Step and Bumper Static Load Test. This standard must be type certified by an independent testing laboratory on a like test model.

**AMD 019 - MEASURING GUIDELINES: COMPARTMENTS AND CABINETS:** The ambulance specified herein shall be in compliance with the National Truck Equipment Association, Ambulance Manufacturing Division Standard 019 - Measuring Guidelines: Compartments and Cabinets.

**AMD 020 - FLOOR DISTRIBUTED LOAD TEST:** The ambulance specified herein shall be type tested to the National Truck Equipment Association, Ambulance Manufacturing Division Standard 0 20 - Floor Distributed Load Test. This standard must be type certified by an independent testing laboratory on a like test model.

**AMD 021 - ASPIRATOR SYSTEM TEST, PRIMARY PATIENT:** Each ambulance's primary patient aspirator system shall be tested to assure compliance with the National Truck Equipment Association, Ambulance Manufacturing Division Standard 021 - Aspirator System Test, Primary Patient.

**AMD 022 - COLD ENGINE START TEST:** The ambulance specified herein shall be type tested to the National Truck Equipment Association, Ambulance Manufacturing Division Standard 022 - Cold Engine Start Test.

**AMD 023 - SIREN PERFORMANCE TEST:** The ambulance siren system shall be type tested to the National Truck Equipment Association, Ambulance Manufacturing Division Standard 0 23 - Siren Performance Test.

**AMD 024 - PERIMETER ILLUMINATION TEST:** The ambulance and equipment specified herein shall be equipped with perimeter lighting that will meet or exceed the performance criteria set forth in the National Truck Equipment Association, Ambulance Manufacturing Division Standard 016 - Perimeter Illumination Test. This standard must be type certified by an independent testing laboratory on a like test model.

**AMD 025 - MEASURING GUIDELINES: OCCUPANT HEAD CLEARANCE ZONES:** The ambulance specified herein shall be in compliance with the National Truck Equipment Association, Ambulance Manufacturing Division Standard 025 - Measuring Guidelines: Occupant Head Clearance Zones.

**AMD 026 - AMBULANCE EMERGENCY LIGHTING SYSTEM**
The ambulance specified shall meet all standards or exceed the performance requirements for ambulance emergency lighting systems under this standard. This standard validates performance requirements for ambulance emergency lighting systems. The purpose of this standard is to establish testing and certification procedures for the ambulance emergency lighting system. Each finished vehicle shall be tested.

**AMD 027 - Line Voltage Electrical Systems Test- 2014**
This standard establishes test requirements for ambulances and equipment installed within or on ambulances and the conductors that connect ambulances to 125 volt, nominal, AC electrical supply system(s).

**SAE – J3026 - Ambulance Patient Compartment Seating Integrity and Occupant Restraint:** This SAE Recommended Practice describes the testing procedures that may be used to evaluate the integrity of ground ambulance-based occupant seating and occupant restraint systems for workers and civilians transported in the patient compartment of an ambulance when exposed to a frontal or side impact. This Recommended Practice was based on ambulance patient compartment dynamics and is not applicable to other vehicle applications or seating positions. This Recommended Practice is structured to accommodate seating systems installed in multiple attitudes including but not limited to side-facing, rear-facing, and forward-facing. Its purpose is to provide ambulance seating manufacturers, ambulance occupant restraint manufacturers, ambulance builders, and end-users with testing procedures and, where appropriate, acceptance criteria that, to a great extent ensures the occupant seating and occupant restraint system meet similar performance criteria as FMVSS 208 requires for seat belted passengers in light vehicles. The test conditions utilized are standardized orientations that do not reflect potential conditions that may exist prior to impact such as braking and/or steering and their effects on the initial positions of the occupants and surfaces relative to the occupants.

**SAE – J3027 – AMBULANCE LITTER INTEGRITY, RETENTION, AND PATIENT RESTRAINT:** This SAE Recommended Practice describes the testing procedures required to evaluate the integrity of a ground ambulance-based patient litter, litter retention system, and patient restraint when exposed to a frontal or side impact. Its purpose is to provide litter manufacturers, ambulance builders, and end-users with testing procedures and, where appropriate, acceptance criteria that, to a great extent ensures the patient litter, litter retention system, and patient restraint utilizes a similar dynamic performance test methodology to that which is applied to other vehicle seating and occupant restraint systems

**SAE – J3043 - Ambulance Equipment Mount Device or Systems:** This SAE Recommended Practice describes the dynamic and static testing procedures required to evaluate the integrity of an equipment mount device or system when exposed to a frontal or side impact (i.e. a crash impact). Its purpose is to provide equipment manufacturers, ambulance builders, and end-users with testing procedures and, where appropriate, acceptance criteria that, to a great extent, ensure equipment mount devices or systems meet the same performance criteria across the industry. Prospective equipment mount manufacturers or vendors have the option of performing either dynamic testing or static testing.

CRASHWORTHINESS: Safety is a primary objective for modular ambulance vehicles produced under this specification. In addition to compliance with design criteria incorporated herein, manufacturer shall also provide certified documentation to provide proof of crash worthiness of vehicle(s) proposed.

Crash worthiness of vehicle shall be demonstrated through a minimum of two actual crash tests of modular body ambulance under laboratory conditions. These crash tests will be similar in scope to testing performed by the National Highway Traffic Safety Administration and the Insurance Institute for Automobile Safety to verify the crash worthiness of passenger vehicles. An independent test laboratory accepted and utilized by the National Highway Traffic Safety Administration for their crash tests shall perform this testing and provide certification. Testing shall be performed and verified by SAE Member Engineers.

Test criteria shall be defined as a minimum of two actual high-speed impact crash tests between an ambulance and mid-size passenger vehicles. Collisions shall be into each side of manufacturer's standard production modular ambulance body mounted on a chassis, struck by an actual bullet vehicle. Crash energy at impact shall be a minimum of 3,000 pounds at 42 miles per hour.

Reports from crash testing shall be certified by testing lab, and shall include the following minimum results:

1) The required six-point medic restraint system shall hold all attendants in their seats. There shall be no head contact with anything except head rests. There shall be no excessive excursion of the attendants in their seats regardless of which way they were facing.
2) The ambulance body structure shall remain intact after both impacts. Bending of body shall be localized to point of impact, and doors adjacent to the actual crash point shall continue to operate. There shall be no intrusion into the patient compartment.
3) The body mount and pucks shall remain intact as a result of the impacts. There shall be no visual damage to body mounts or floor structure.

4) All interior cabinetry and fixtures shall remain in place and undamaged.

This provision requires actual crash testing of an ambulance by high-speed moving vehicles to validate safety and crash worthiness. Crash simulations, acceleration testing, sled testing; barrier testing or other theoretical tests are not sufficient to meet this requirement. Certified documentation from a qualified independent testing laboratory shall be provided with the bid in order to validate compliance with this requirement.

QUALITY ASSURANCE: The vendor shall inspect and test all systems, electrical loads, per current Federal specification KKK-A-1822 Section 4. Testing results shall be documented and displayed in the Oxygen compartment and/or supplied with the delivery handbook.

QUALITY/COMPLIANCE ASSURANCE: A thorough quality/compliance inspection by this agency's employees or this agency's hired representative shall compare the Ambulance to the specifications within 10 calendar days of written notice of vehicle completion by the successful bidder. The notice may be emailed to the Agency's designee, followed by phone contact. The agency reserves the right to authorize the bidder's DEALER to conduct the inspection provided the DEALER is authorized and qualified to correct quality/compliance issues at the DEALER site.

NON-COLLUSIVE BID CERTIFICATION:
By submission of this bid response, the Bidder and/or the Bidder's authorized representatives certify under penalty of perjury, that to the best of their knowledge and belief the following:

A) The prices in the bid response have been arrived at independently without collusion, consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other Bidder or with any competitor, and;

B) Unless otherwise required by law, the prices which have been quoted in the bid response have not knowingly been disclosed by the Bidder and will not knowingly be disclosed by the bidder, prior to the public bid opening, either directly or indirectly to any competitor, and;

C) No attempt has been made or will be made by the Bidder, for the purpose of restricting competition, to induce any person, partnership or corporation not to submit a bid response.

**DEBARMENT STATUS:**
By submission of this bid response, the Bidder and/or its authorized representatives, certify under penalty of perjury, that to the best of their knowledge and belief they are not currently debarred from submitting bids or bid on contracts by any agency within the home state of THIS AGENCY, nor are they an agent of any person or entity that is currently debarred from submitting bids on contracts by any agency within the home state of THIS AGENCY.

**WARNING:**
This agency will not tolerate Vendors who state compliance to specifications but deliver an incomplete product and/or sub-standard materials and workmanship. Vendors who have made delivery of such an ambulance without making every reasonable effort to remedy the defects found at the time of delivery or within the

warranty period will be notified that they are DEBARRED from submitting bids to this agency in the future. This agency will not waste valuable time (more than once) trying to recover legal costs and deal with lost in-service time of new apparatus, working with vendors who are unresponsive to the needs of this agency.

**CHASSIS**

**Chassis will be purchased by the agency and supplied to the awarded vendor. The vehicle will be a Ford F-550 4x4 with Ambulance Prep Package added. The cab configuration will be a regular cab or super cab configuration depending on need by the bidding agency.**

TYPE I AMBULANCE: The apparatus shall be a 2-door, Super Cab with a CA – Cab to Axle length of eighty-four (84") inch chassis. The Agency would also request a bid on a transferable, modular, ambulance body as well as a regular cab with a CA – Cab to Axle length of one hundred and eight (108") inch and chassis with a transferable, modular, ambulance body. The modular ambulance body would be one hundred and fifty seven inches (157") for a Super cab and one hundred and seventy two inches (172") for a regular cab.

CHASSIS MAKE: The apparatus shall be mounted on a commercially available cab and chassis manufactured by Ford Motor Company. The chassis manufacturer shall be the vehicle's point of origin. The chassis shall be supplied by Ford as an incomplete vehicle to the successful ambulance manufacturer. The chassis supplied shall conform to all applicable Federal Motor Vehicle Safety Standards in force at the time of manufacture. A statement of conformity shall be supplied with the chassis in an "Incomplete Vehicle Manual".

CHASSIS MODEL: The apparatus shall be mounted on a 2016 or newer F-550, Regular cab or Super Cab, dual rear wheel, four wheel drive chassis equipped as follows below. The "Ambulance Prep Package" offered by Ford shall be included on this chassis.

WHEEL BASE: The wheel base shall be one hundred eighty-eight point eight inches (188.8") with a cab to axle dimension of 108 inches and the regular cab. The Super cab shall have a wheel base of one hundred eighty five point eight inches (185.8") with a cab to axle dimension of eighty four inches (84"). The wheel base shall be factory supplied by the OEM Modified wheel bases made from chassis with shorter or longer wheel bases are not acceptable.

OEM: The acronym OEM is Original Equipment Manufacturer. The OEM is the chassis manufacturer and the vehicles Maker and Origin.

TRIM LEVEL: The cab shall be equipped with an "XLT" Trim level with tilt steering wheel, cruise control, power windows and door locks. The front bumper and grill shall be accented with chrome. The OEM grille work shall remain OEM Aftermarket vacuum formed, proprietary grille work made by the ambulance manufacturer is not acceptable due to replacement part cost and lack of immediate availability.

ENGINE: A V-8, Turbo-Charged Diesel engine shall be provided with a minimum displacement of 6.7 liters (402 cu in). The engine output shall be 390 horsepower at 2,800 revolutions per minute and deliver 735 foot pounds of torque at 1,600 revolutions per minute. The compression ratio of the engine is 16.2:1 with a high pressure common rail fuel injection system. Engine performance shall comply with or exceed the most current revision of KKK-A-1822.

TRANSMISSION: There shall be a Ford, Heavy Duty Torque shift, 6-speed, automatic transmission with overdrive provided. The Heavy Duty towing package shall be included which is offered by Ford Motor Co.

TURN DIAMETER: The F-series chassis with 188.8 inch wheelbase will have a curb to curb turn diameter of 54.8 feet.

CAB SEATS: OEM high back, velour 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 violations regarding SRS (Air Bag) deployment geometry and Ford QVM Guidelines.

OCCUPANT RESTRAINT SYSTEM: The front, forward facing cab seats shall be equipped with OEM installed three point seat belts. The seat belt assemblies shall meet or exceed FMVS. 208 and 209. The inside conversion panels shall not interfere with the swivel arc of the shoulder rings.

SUPPLEMENTAL RESTRAINT SYSTEM: An OEM air bag 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.

GROSS VEHICLE WEIGHT RATING (GVWR): The GVWR of the chassis supplied shall be at least 19,500 pounds.

FRONT AXLE WEIGHT RATING (FAWR): The FAWR shall be rated no less than 7,000 pounds.

REAR AXLE WEIGHT RATING (RAWR): The RAWR shall be rated no less than 14,700 pounds.

TRANSFER CASE: There shall be an aluminum closed coupled, part-time, 2-speed transfer case provided by the OEM. The case shall feature 3 modes of operation; 2-wheel drive HIGH, 4-wheel drive HIGH, 4-wheel drive LOW. The high range two wheel and four wheel drive ratio shall be 1.00:1 and the low range shall be 2.72:1. The drive mode shall be manually selected by a rotary type electronic switch on the OEM dash. A 4 x 4 shift indicator shall illuminate on the dash when the transfer case is engaged in 4 x 4. After market or a divorced style transfer case is not acceptable.

SPARE TIRE: One (1) spare tire and wheel assembly shall be supplied. When the tire is to be carried on the unit, the tire hold down shall meet current KKK-A-1822

JACK AND SPARE TIRE TOOLS: The vehicle jack and tools associated with the spare tire and jack shall be installed behind the passenger's seat

**WHEEL/RIM APPEARANCE: All four outside chassis wheels shall Forged Polished Aluminum with bright hub covers/center ornaments from Ford.**

BRAKES: 4-wheel anti-lock, power assisted hydraulic brakes shall be supplied by the OEM. The brakes shall be 4-wheel Disc type with Dual piston, Pin slider calipers. The front disc diameter shall be 14.53 inches in diameter and the rear disc shall be 15.55 inches in diameter. The parking brake shall be a foot operated, hand release independent mechanical brake, provided by the OEM

BRAKE BOOSTER / ANTI LOCK SYSTEM: The brake pedal effort shall be reduced by a hydro-boost power assist unit. The booster shall be installed on the fire wall and linked directly to the foot pedal. Hydraulic brake pressure shall route through a 3-channel, 4-Wheel anti-lock brake system that prevents wheel lock-up.

INTERIOR UPGRADE PACKAGE: Ford interior upgrade package shall be ordered and supplied on the chassis. This package shall include:
Cloth Headliner
High trim door panels
Ford option code 21A high back bucket seats
Cloth sun visors
Power Door locks
Power Windows
Insulation package

FLOOR PEDALS: The chassis shall have OEM adjustable floor pedals, option 62M.

DAYTIME RUNNING LIGHTS: Daytime running light option No 942 shall be supplied and installed by the OEM. Both headlights shall come on with the ignition switch.

SHOCK ABSORBERS: The chassis supplied shall be equipped with one shock absorber for each side of each axle. An OEM selected one and three eighth (1-3/8") inch gas type shock shall control vehicle spring oscillation and dampen road related jounce and harshness. Ambulance related shields, floor members or other devices shall not interfere with shock replacement. The rear suspension will be replaced by the awarded bidder with a Liquid Spring Suspension which is written out within this bid under: REAR KNEELING SUSPENSION

FRONT STABILIZER BAR: A computer selected, one inch diameter anti-sway bar shall be supplied. The bar shall regulate body shift and enhance drivability, handling and control. The solid torsion spring steel bar shall be attached to the vehicle frame utilizing natural rubber bushings and removable steel bushing housings. The ends of the bar shall be inserted into natural rubber bushings, located near the front wheels. Both axle attachment points shall be cast into the forged steel, I-beam front axle.

FUEL TANK: The fuel capacity shall be at least 40 US gallons. The fuel range shall be at least 250 miles per KKK-A-1822.

REAR AXLE TYPE AND RATIO: The axle shall be Limited Slip Differential with a 4.10:1 gear ratio. Ford Code XG8.

TIRES: All mounted, active tires shall be identical make, tread type, size and load range. For aforementioned GVWR the tires shall be LT225/70R19.5 load range F. A label with the recommended tire pressure shall be

located above each wheel opening, unless specified otherwise by the purchaser. All tires shall be balanced per KKK-A-1822 3.6.12.

AMBULANCE PREPARATON PACKAGE: The chassis provided shall be equipped with an ambulance preparation package designed and installed by the OEM The 47L allows operator commanded regeneration down to 30% DPF capacity. The 47A had to have at least 70% DPF capacity to do a manual regeneration. The low DEF fluid will not cause the vehicles speed limiting or forced idle. It will still give you the warning lights, chimes and message. The 47L is a Federal Emissions compliant package. It is not certified in California or the Green States. California has declared to NTEA/AMD that they do not regulate emergency vehicles. The package shall be designed to hold up to the demands and duty cycles inherent with Emergency Medical Vehicles.

ALTERNATOR - CHARGING SYSTEM: Two alternators shall be supplied and installed by the OEM. The alternators shall be as supplied by Ford under the 47L/A Ford Ambulance Prep option. Both alternators shall be controlled by the vehicles on board computer. The ambulance manufacturer shall not modify the OEM computer's functional control of the alternators. The alternators' output cable, originally connected directly to the positive post of the under hood battery, shall be rerouted to a 3/8" diameter, solid brass junction post. A 2/O positive battery cable shall reconnect the alternators to the batteries from the junction post. The ambulance load cable shall connect under the hood to the aforementioned junction post.

THROTTLE HIGH IDLE: A programmable OEM throttle control shall be provided. The throttle shall be programmed for charge protect. The throttle control module shall be located in the ambulance manufacturer’s center cab console. The throttle shall be easily accessible through removable face panels. Program buttons shall not be readily accessible to end users.

CAB STEREO: An OEM Ford AM/FM/CD in dash radio and four cab mounted speakers shall be included with the chassis.

CHASSIS VOICE CONTROL SYNCH (FORD ONLY): The chassis manufacturer shall include a FORD SYNCH option which will allow for greater safety of the vehicle driver. The driver shall be able to voice control connect to multiple wireless systems. The driver of the vehicle shall refer to the owner’s manual for details of operation.

MIRRORS: Dual OEM, Power adjusted mirror glass, manually telescoping Black mirrors, shall be mounted to the forward, lower corner of the cab door window. Both mirrors shall feature a bi-directional break-away function to permit folding the mirror heads against body in close quarters. The mirrors shall be seven inches wide by eight inches high and flat on both right and left sides.

REAR KNEELING SUSPENSION: A Liquid Spring rear hydraulic strut suspension shall be installed in lieu of the standard rear OEM single stage leaf springs. The suspension company shall be QS 9000 and ISO 9001 certified for excellence. The liquid suspension shall be rated at 13,660 pounds GAWR and installed per Liquid Spring Directions. Suspension Installation instructions and drawings shall be followed. All guidelines regarding chassis and axle capacity ratings as published by Ford Motor Corporation shall be adhered to.

MECHANICAL SUSPENSION COMPONENTS: The control arms shall be connected to a replacement front hanger that features upper and lower control arm pivot points and a connection point for a heavy duty sway bar. Both Liquid Spring struts shall be positioned directly aft of the axle and outboard of frame rails. The designed ride height shall maintain original suspension's drive-line geometry.

TRACKING BAR: The suspension shall utilize a lateral control rod (tracking bar) to maintain side to side axle position related to the chassis frame. Wear shoes, mounted to the sides of the frame rails are not acceptable.

HYDRAULIC SYSTEM: All hydraulic lines, fittings, reservoirs and valves shall be protected against "stone pecking". Abrasion covers, such as nylon convolute loom over the lines are required. The entire assembled system shall be tested for leaks at every fitting connection point.

MECHANICAL QUALITY ASSURANCE: All fasteners related to the suspension assembly are considered critical. All fasteners shall be tightened to the manufacturer’s recommended torque by the primary installation mechanic. A secondary mechanic shall "put a wrench" and re-torque ALL of the fasteners and then spray a contrasting color of paint onto the heads and nuts of each fastener.

SUSPENSION JOUNCE STUDY: A suspension jounce clearance study shall be performed throughout the full range of suspension travel to ensure adequate clearance of suspension, frame and brake components. Test results shall be documented and supplied in the owner's manual.

REAR STABILIZER BAR: The rear sway bar shall remain OEM.

KNEELING FEATURE ENABLE: The rear suspension shall kneel when the triggering device is activated AND an enable switch, located in the cab console is activated.

KNEELING FEATURE ACTIVATION: The kneeling feature shall activate in PARK position only. The kneeling feature shall NOT activate in any forward or reverse gear. The above rear suspension shall kneel when the trailing rear access door is opened.

VACUUM PUMP: There shall be a vacuum pump to activate the Patient Area "Heater Control Valves" when the patient area heater is energized. The electrical layout shall be shown on the custom wiring schematics at the time of delivery.

Body Builder Wiring: The chassis is to have circuits at the end of the frame for the tail, stop and turn signals along with two additional wires from the cab to the end of the frame for the second stage manufacturer to utilize.

TAIL LIGHT DELETE: The chassis manufacturer is to delete the tail lights at the rear of the frame, but does not omit the wiring mentioned above.

BATTERIES: The chassis shall be ordered with Two Motorcraft 900CCA (Cold Cranking Ampere) Batteries. They shall be wired in parallel for maximum starting capability. The batteries shall be located in a module

battery drawer along with a third 900CCA battery that will be isolated from the starting capability and be used for computer and IT equipment. This is described further under Battery Isolator within this bid.

NC Inspection Required

MODULE CONSTRUCTION - GENERAL

SERVICE INTENT: The ambulance body shall be all aluminum. The body sheet shall be reinforced with structural members designed to resist deflection and hold up to extreme ambulance service per the latest revision of federal specification KKK-A-1822.

BODY MEMBER ALLOY: The side, roof, front and rear sheet shall be derived from .125", 5052-H-32 aluminum sheet. The roof sheet shall be one (1) piece, .125", from roof rail to roof rail. The side structure and structural shapes shall be extruded of 6105-T5 aluminum.

STRUCTURAL INTEGRITY: The body shall be capable of providing impact, deformation and penetration resistance in the event of a collision. The body structure shall be capable of passing a standalone static load test on a type-tested body. The test shall be conducted in accordance to AMD-001 except the test weight shall be a minimum of 55,000 pounds. The same unit shall be subjected to the same test with the body turned on its side. A complete copy of the testing documents with photos must be supplied upon bid review if requested by this agency. Non-compliant bids will be rejected.

WELD QUALITY: All welds within the modular body shall meet American Welding Society codes for structural and sheet welding. Compliance documentation must be supplied upon bid review if requested by this agency.

CREVICE PREPARATION: All skin and extrusion surfaces destine to be mated together shall be primed with epoxy, etching primer prior to assembly. All over lapping extrusion to skin surfaces shall be bedded with a two part acrylic high strength bonding adhesive.

SIDE STRUCTURAL MEMBERS: The sheet edges will be fit into slots designed within a proprietary, double hollow, corner post extrusion in addition to the two part acrylic bonding agent. The sheet will be MIG welded and structurally bonded to the extrusion. Double-hollow designed corner post extrusions shall be used to weld side and end assemblies together. Horizontally oriented, adjoining structural box tubes shall be welded to the corner post with a minimum 50% surface weld. The intermediate structural members of the side grid shall be two (2) inch by two (2) inch 6105-T5 aluminum, architectural box tubing. All entry and compartment door adjacent members shall be one quarter (1/4") inch, two (2) inch by two (2) inch proprietary extruded shape. The main structure shall surround the compartment openings and provide intermediate skin support. The intermediate structure spacing shall have a nominal dimension of twelve (12) inches. All grid structure shall be welded together with a minimum of 75% of available mating surface. The side skin shall be bonded to the structural grid using (1.75") wide, VHB (Very High Bond) adhesive tape. The edges of the tube that touch the skin will be sealed with Bostik Brand, Simson ISR 70-03 Construction Adhesive.

SIDE IMPACT RAILS: There shall be four (4) side impact rails, located in the upper and lower sections of the side walls. They shall consist of 6105-T5 aluminum, that is solid half (1/2) inch thick by four (4) inch plate on the curbside and one-half (1/2) inch by four (4) inch plates on the street side that are continuously MIG welded or Huck structurally fastened to the structural grid. Since this is a safety item, no exceptions will be accepted

SEAT BELT ANCHORAGE: Occupant seat belts shall be drilled and tapped through one-half (1/2) inch by four (4) inch plate on the curbside and one-half (1/2) inch by four (4) inch plates on the street side that are continuously MIG welded to the structural grid. Since this is a safety item, no exceptions will be accepted.

SIDE SHEET: The side sheet shall be .125 thick, 5052-H32 aluminum. The side sheet compartment opening cut outs shall be cut with CNC controlled, gantry mounted plasma or high speed routing equipment. The door opening shall be cut to allow for the skin to be molded into the jamb opening to create a crevice free jamb with a smooth paint finish. The machine formed skin shall return into the body at least 3/4" to meet the jamb extrusion. This method will encourage square openings to receive the door assemblies and maintain critical structural locations. The door jamb shall have a full structure frame behind the jamb skin return. It shall not rely strictly on the skin for the compartment jamb. Pre-determined ventilation louvers shall be formed into the body sheet, where specified. A seamless door jamb exterior is required to minimize corrosion. Extruded type exposed door jambs do not meet this specification. The skin shall completely conceal the door-jamb from view. The only visible seams on the body sheet shall be at the corner posts. The skin shall extend .688" below the skirt rail extrusion to a drip edge to keep moisture from collecting underneath where the skin meets the skirt rail extrusion.

CORNER POST EXTRUSION: The corners of the modular body shall be made from an extruded aluminum structure that has an alloy of 6063-T6. The corner post extrusion shall be 3.25” x 3.25” with a 2” radius on the outer corner. The corner post extrusion shall have an internal web member that runs on a 45 degree angle to the front and side of the modular body. Where the internal web meets the exterior extrusion wall the internal web shall flair into a .125” radius giving a .25” wall thickness at the exterior wall of the extrusion. There shall be a .75” flange on each side of the corner post extrusion that is a side skin receiver. The side skin receiver shall be funnel shaped to allow the exterior side skin to fully seat into the corner post extrusion. The interior walls of the corner post extrusion shall be .125” thick and they shall incorporate a 45 degree weld bevel on the interior corners.

REAR SILL EXTRUSIONS: The rear body and floor substructure shall be constructed of a dual proprietary aluminum extrusion with mating joints. The lower floor extrusion is a combination continuous extrusion with an incorporated L mating surface. The lower door extrusion is a multi-chamber construction with matching radius corner and surfaces to the floor sill. This combination of extrusion and joint structure provides for strong joint strengths, and continuous contact surface between the floor sill and the outer-body door extrusion.

FRONT AND SIDE WALL GUSSET PLATES: The front wall and side wall structural members shall have additional support with a fully welded gusset system that shall be made of 5052-H32 aluminum plate, one quarter (1/4) inch thick by four (4) inch by four (4) inch.

REAR AND SIDE WALL GUSSET PLATES: The rear wall and side wall structural members shall have additional support with a fully welded gusset system that shall be made of 5052-H32 aluminum plate, one quarter (1/4) inch thick by four (4) inch by four (4) inch.

ROOF RAIL EXTRUSIONS: The roof corners of the modular body shall be made from an extruded aluminum structure that has an alloy of 6063-T6. The roof rail extrusion shall be 4.55” x 3.5” with a 2” radius on the outer corner. A full length drip rail shall be incorporated into the roof rail corner post extrusion, drip rails at the top of the modular body that are not inclusive of the roof rail extrusion do not meet the intent of the specification and are deemed non-compliant to this specification. The roof rail extrusion shall have an internal web member that runs on a 45 degree angle to the front and side of the modular body. Where the internal web meets the exterior extrusion wall the internal web shall flair into a .125” radius giving a .25” wall thickness at the exterior wall of the extrusion. There shall be a .75” flange on the lower side of the roof rail extrusion that is a side skin receiver. The side skin receiver shall be funnel shaped to allow the exterior side skin to fully seat into the roof rail extrusion. There shall be a .75” x .125” recess into the roof side of the extrusion for locating the roof sheeting. This recess shall have a 45 degree weld bevel. The interior wall of the roof rail extrusion that is in-board of the side skin funnel shall be 2” wide so that they line up with the exterior side wall. The interior wall of the roof rail extrusion that is in-board of the roof sheeting recess shall be 2.25” wide so that they line up with the 2.25” roof bows. The interior walls of the roof rail extrusion shall be .125” thick and they shall incorporate a 45 degree weld bevel on the interior corners.

ROOF SHEET: The four (4) edges of the sheet shall be continuously welded to the roof rail extrusion to prevent leaks. All perimeter welds shall be ground smooth and worked smooth prior to the overall body paint and finish. Non-fully welded roof sheets to the roof rail extrusions do not meet the intent of this specification and are deems non-compliance to this specification. The roof sheeting shall be continuous and .125” thick.

ROOF BOWS: The roof sheet shall be supported by full width .125” x 2” x 2.25” architectural box tubing. The roof bows shall be located on twelve (12) inch centers. The roof bows shall be MIG welded to the roof rail extrusions with no less than four (4) and one-half (1/2) inches of continuous weld per end. The roof sheet shall be bonded to the roof bows with VHB (Very High Bond) adhesive tape.

LATERAL ROOF SUPPORTS: If this agency requires ducted ceiling HVAC, additional structural support will be added as a result of the 2" ducted heat and A/C delivery system. 2” x 2” three sided extruded channel with two sides being .125” thick and the bottom surface for fastener acceptance to be .160” shall be full length of the body.

ROOF CORNERS: The roof rail extrusions shall be welded together along the roof bow mating walls at the corners. In addition, the outer surfaces of the roof rail extrusions shall be 100% continuously TIG welded to cast aluminum corner castings. The castings shall have internal mating flanges that extend horizontally inside the upper roof rail extrusion and vertically down the corner post extrusions.

FLOOR MEMBERS: Floor structures shall be 6105-T5 aluminum, one-quarter (1/4) inch by 1.500 by 3.000 aluminum, architectural proprietary shape with bevels built into the extrusion die to allow for full

weld penetration on the edge of the extrusions. The die must be designed so that the inside of the corner has the same thickness of aluminum as the remaining four sides.

FLOOR GUSSET PLATES: The floor member to side wall fully welded gusset system shall be made of 5052-H32 aluminum plate, one quarter (1/4) inch thick by four (4) by four (4) inch and quarter (1/4) inch x six (6) inch x six (6) inch. A minimum of 12 gussets shall be located, dual gusset plates at each main cross member site.

FULL WIDTH CROSS MEMBERS: The module floor shall provide core support for the side assemblies and shall incorporate a minimum of three (3) full body width floor members shall connect to and support the side wall assemblies. Each member shall be made of 6063-T6 aluminum. The front floor tube is to be a minimum of 3.000 x 1.500 x .250 thick 6105-T5 aluminum tube which is fully MIG welded into the front corner post at each side of the vehicle. On top of the tube is to be a minimum .188 thick 5052 aluminum front sill running full width of the body. One of the members located just forward and/or rear of the rear wheel housing shall be one-quarter (1/4) inch by 1.500 by 3.000 rectangular architectural box tubing. The last floor cross-member shall be a 1.625 x 2.188 x .250 6105-T5 aluminum tube on the rear wall which is fully MIG welded into the rear corner posts at each side of the vehicle. This tube is butted up and welded to a 2.000 x 1.000 x .125 thick 6105-T5 tube which is also fully MIG welded to the rear corner post. A minimum of eight (8) total 6” gussets, (1/4) inch thick will be installed to reinforce two (2) at each cross member and sidewall tubes directly fore and aft of the axle.

WATER TIGHT PATIENT CABIN: The sub floor shall be shielded from moisture. A forty (40) mil thick aluminum sub sheet shall be sealed to the floor structure with silicone sealant. Additional aluminum plates shall be intermittent welded between compartments, wheel well liners, step wells and fuel filler housings. All of the areas shall be thoroughly sealed from one to the other, creating a sealed patient cabin from the outside. Extrusion hollows shall be filled with expandable foam sealant to prevent fumes and moisture from entering.

DOOR CONSTRUCTION

DOOR SKIN: No welded seams are allowed, only one piece formed corners. The door skin shall be .090 thick, 5052-H32 aluminum sheet formed on all four sides utilizing an ACF Multiflex Corner Former Model MF 25 to create a crevice free surface for best paint adhesion and corrosion resistance. The formed edges shall not have elongation cracks due to forming and shall maintain material thickness uniformly over the entire sheet. The formed edges uniformly round off seamless for better paint adhesion and aesthetic appeal that does not require cutting and welding in the corners.

DOOR FRAMING: The door frame shall reinforce the perimeter of the skin pan. The extrusion shall incorporate a T-slot to receive an extruded, hollow, dual durometer closed cell UV protected TPV gaskets with relief holes for even compression for a proper and complete seal from the door to the door jamb. The gasket corners shall be welded without using adhesives for bonding. The door frame extrusion shall also add torsion resistance to the door assembly. The door jamb extrusion and frame extrusion shall be cut 45 degree on each corner. Each of the four corners shall incorporate a key way

and spline that is designed to drive into each corner and maintain a perfect 90 degree angle prior to welding. The door castings shall include gusset plates for additional support for the door construction. The door frame shall also incorporate a clearance way for UNF threaded blind fasteners for the door panels. The door panel shall not rest on the body of the blind fasteners.

FINAL DOOR ASSEMBLY: The door skin shall be bonded to the frame assembly with an adhesive sealant in addition to intermittent welding. For entry doors: Additional, horizontal structure shall be added to maintain door skin flatness as well as penetration resistance in the event of a collision. The horizontal members are extruded J-channel, 0.150” thick. A minimum of two (2) horizontal members shall be welded in. A vertically oriented 0.150” thick formed hat-channel shall be welded to the webs of both horizontal channels for additional buckling resistance. Compartment doors shall have a reinforcement system of horizontal or horizontal/vertical structure added to maintain skin flatness and impact resistance.

ENTRY DOOR WINDOW(S) OPENINGS: The entry door(s) shall incorporate recessed areas that are stamped into the outer door skin to allow for a flush window appearance and shall not protrude with a lip on the outer door skin of the modular body.

DOOR PANELS: The inside entry door panels shall be made of (.080”) thick aluminum plate and shall be finished per these specifications later in this document. The center panel shall be removable for easy lock service/lubrication. The inside of the compartment door panels shall be made of (.080") thick polished aluminum diamond plate. The edges of the door panel shall be recessed into the door frame extrusion. The panels shall be fastened to the door frame with stainless steel, #10-32 UNF machine screws threaded into aircraft quality blind fasteners. Each fastener shall have an internal tooth lock washer to preclude loosening.

DOOR JAMB: The door jamb shall accommodate rigid fastening of compartment door hinges. The jamb shall include a hollow cell that shall conceal wiring for the non-mechanical door switch. The door jamb frame shall be cut 45 degree on each corner from the door edge corner, each of the four corners shall consist of a key way and spline that is designed to drive into each corner and maintain a perfect 90 degree angle prior to welding. Additionally, the jamb shall be continuously MIG welded on the inside and the outside corners. A seamless door jamb exterior is required to minimize corrosion - extruded type door jambs do not meet this specification. The skin shall completely conceal the door-jamb from view. "No Exterior Door Extrusions Allowed".

HINGE: All doors shall have stainless steel, continuous, piano hinge. The pin diameter shall be .250 and staked into place to prevent drifting out of the hinge leaf. The knuckle lengths shall be one inch. The hinge attachment bolts shall be one quarter inch diameter by one inch long stainless steel Type TT (Thread Rolling Screws) hex head bolts. All tapped holes for hinge bolts shall be treated with an anticorrosion compound prior to installation of each hinge bolt. Thread cutting screws are not acceptable. Each hinge leaf shall have a Mylar insulation strip (3M Scotch No 8411) between the leaf and the Jamb/Door.

LATCHES: The latches shall meet FMVSS 206. All latches shall be two-stage, rotary- type. The latches shall be through bolted to the door frame extrusion. All entry doors shall have two rotary latches per door. To assure uniform latch timing and functional door reliability, only straight, one-quarter (1/4) inch diameter rods shall connect the latches to the handle. All double hung compartment doors shall have two rotary latches per door.

NADER PINS: All Nader pins shall be headed to prevent the door(s) from opening under impact. They shall be hex headed Grade-8 fully adjustable with a 5/16” thick knurled stainless steel retainer plate to keep the Nader pin from moving after adjusted. The opening in the door jamb extrusion shall be large enough to allow full adjustment with the Nader pin washer covering the hole.

Body Build Information

BUILD TO SPEC VARIATION: The actual build unit may have a variation in actual sizing at any point of up to 1/4" from quoted spec sizing. Where an actual size is deemed to be important as it impacts the fit of an article, it must be clearly noted with confirmation received from the manufacturer of ability to build.

MOUNTING

MOUNTING SYSTEM: The outside dimension, across the frame rails on this chassis is thirty four (34) inches. Twelve (12), one quarter (1/4) inch thick steel out riggers, designed specifically to through bolt to the frame rail web, shall be supplied and installed. Each out rigger shall be through bolted to the frame utilizing three (3), five eights (5/8) inch diameter, UNC, grade eight, Flanged Hex head bolts and corresponding grade eight, flanged, locking hex nut.

Each out rigger shall accommodate a natural rubber vibration isolator and support for the body's mounting sill. Outriggers shall not protrude more than four (4) and three eights (3/8) inches measuring from the frame's web to the outer tip of the out rigger deck. All mounting sills shall be made of one inch thick by three inch wide solid aluminum flat bar. A grade L-9 seven sixteenth inch diameter by four inch long hex-head bolt shall be used to bolt the sill down at each isolator site.

MODULE CONFIGURATION

OVER ALL LENGTH: The overall length of the vehicle shall not exceed twenty three (23) feet, nine (9) inches. The departure angle and length shall meet or exceed the current revision of Federal Specification KKK-A-1822.

MODULE LENGTH: The module length shall be at least one hundred seventy two (172) inch if built on a regular cab F550 and module length shall be at least one hundred fifty seven (157) inch if built on a super cab chassis.

MODULE WIDTH: The module width shall comply with the current revision of Federal Specification KKK-A-1822. The module shall be ninety six (96) inches wide, excluding lights and accessories.

MODULE HEAD ROOM: The module shall not be less than seventy (72) inches actual measured headroom. The measurement shall be taken from the patient compartment floor to the ceiling panels.

COMPARTMENT CONSTRUCTION

MATERIALS: Unless specified otherwise, all exterior compartment walls and backs shall be constructed of .100 polished aluminum diamond plate. All compartment floors shall be formed of .125 aluminum sheet. Compartments for generators, oxygen, and backboards will have .250 compartment floors. All compartment ceilings shall be formed of .090 aluminum sheet. The ceilings and floors shall form around the sides and back to provide an overlapping joint. The floor and ceiling surfaces shall be double action (DA) sanded to 180 grit. The floors and ceilings are bonded to the walls and back and intermittent welded on six (6) inch centers.

DRAIN HOLES: Drain holes shall be provided on the bottom of the compartments. Each hole shall be baffled to prevent splash water from entering the compartment.

VENTILATION: There shall be a hole in the compartment below floor line approximately 5-3/8"wide x 2-9/32"tall that will accept a specially designed baffled vent. The baffles shall have a stainless steel spring that allow for only one way operation. They allow air to escape out of the compartment when the door is closed, but not for air to come back into the compartment to keep dirt and dust out of the compartment interior. Engineering shall determine the amount of these vents required by the volume of space in the compartment.

WALK THROUGH: Walk through access from the module to the cab shall be provided. The walk through opening shall be at least 19" inches wide and 41" inches high. A door designed to close off access shall be provided per Federal specification KKK-A-1822. The cab shall NOT be rigidly fastened to the modular body. A flexible, Accordion shaped, closed cell rubber bellows, custom made for the opening shall be provided to tie the cab to the module. One joint in the bellows is acceptable and shall be located on the bottom of the opening. The joint shall be completely vulcanized.

TRANSITION THRESHOLD: There shall be installed a metal transition plate at module interior for the cab to module connections that are generalized as Walk-thru. This metal plate is to provide a stepping surface for EMT's who are making urgent egress from the cab to module of the ambulance. The transition plate shall be securely fastened on one side only, so as to allow the module body to flex independent of the chassis cab.

CURBSIDE ACCESS DOOR: The curbside side access door shall be at least 73.812" high by 31" wide measured at the door jamb opening.

JAMB PROTECTION: At the curbside side, module entry door, a full width, formed, stainless steel jamb protection plate shall be provided to prevent heavy traffic from chipping the paint.

DOOR CHECK: The compartment door(s) in excess of 13" pass through width shall be equipped with a door check (hold open) device. All vertically hinged doors in excess of 13" pass through width shall have a gas operated bi-directional spring shock door check. Door check brackets shall be drilled and tapped through a minimum of 3/8" material to preclude coming loose.

DOOR SWING: The compartment door checks shall be installed to allow the door to open ninety degrees (90) from the fully closed position.

ELONGATED STEP WELL: The curbside entry door shall feature a double step "step well" to assist in patient cabin egress. The step shall have a tread dimension of not less than 10 inches. The riser dimension shall not exceed 9 and one-half inches, measured from the step tread to the floor of the patient cabin. The upper step shall be reduced in overall width to the space available to create a pocket on the rearward side. There shall be installed a retention system for storage of portable oxygen bottles. A right angled trim, made of bright aluminum diamond plate, shall be formed over the flooring material and wrap around the 3-sided perimeter of the step well. Step well material shall be 0.100 thick, polished aluminum diamond plate. The step well shall be illuminated. The step well shall meet or exceed the current revision of Federal specification KKK-A-1822.
STEP WELL ILLUMINATION: A 3" LED clear interior light shall illuminate the curbside step well per the current revision of Federal specification KKK-A-1822.

LEFT FRONT COMPARTMENT (M-1): This compartment shall be located in the left front corner of the modular body. The minimum compartment dimensions shall be 74" High x 26.2" Wide x 20.5" deep. This compartment will be full height behind shortened doors. Floor to be panned down 3” forward of O2 rack. There shall be a dogleg in the top of the compartment for interior cabinetry.

SPLASH GUARD: A deflector plate shall be welded between the left front and left front middle compartments. The shield shall be specifically designed to shield water splash from the compartment vents.

COMPARTMENT FLOOR CONFIGURATION: This compartment floor shall be a sweep out type floor. The compartment floor shall be flush with the lower door jamb to facilitate compartment floor cleaning. The edge of the compartment floor shall be continuously welded to the lower door jamb. Heat generated from welding shall not distort the straightness or flatness of the jamb or compartment floor. The weld quality must be aesthetically uniform. There shall be a 3” pan down forward of the O2 rack.

ADJUSTABLE SHELF: A standard duty aluminum adjustable shelf shall be provided. The shelf shall be formed of .125 (1/8") thick aluminum, with 2 inch upward turned lips on all four sides. The shelf shall be mounted on Unistrut tracking, infinitely adjustable, aluminum extruded, and heavy duty shelf track. Incrementally adjustable, non-aluminum shelf track is not acceptable. The shelf shall be located from wall #1 to divider 26” down from compartment ceiling. No uni-strut below shelf.

SHELF BRACKET: Each above exterior adjustable shelf shall include four (4) self-gusseted .157” thick shelf brackets that will allow for easy adjustment up and down for each shelf. Each bracket shall be secured to the shelf by carriage head bolts on the top of the shelf and hex head bolts to secure them to the shelf tracking material in the compartments. This will guard against shelf deformation in the compartments when the shelves are secured in place.

VERTICAL DIVIDER: Located in the "M1" compartment shall be NE semi-rigid fixed divider shall be formed of 5052-H32 aluminum sheet. The divider shall be full height of the compartment by fourteen inches (14")

deep; measured from the back of the compartment. The exposed edge shall be covered with automotive edge trim. The divider shall be located rear of the panned down floor.

COMPARTMENT LIGHTS: Fluorent Plus™ Series Super-LED™ Compartment Tube Lighting lights shall be mounted along the sides and top of this compartment in the ceiling of the "M-1". The length shall be the entire length of the compartment and final location can be discussed with awarded vendor.

LEFT FRONT MIDDLE COMPARTMENT: This compartment is located adjacent and rearward to the left front compartment. The minimum compartment dimensions shall be 40.5" High x 40.5" Wide x 20.5" Deep.

COMPARTMENT FLOOR: This compartment shall feature a three inch (3") dropped floor. The edge of the compartment shall be continuously welded to the lower door jamb.

VERTICAL DIVIDER: Located in the "M2" compartment shall be NE semi-rigid fixed divider shall be formed of 5052-H32 aluminum sheet. The divider shall be full height of the compartment by fourteen inches (14") deep; measured from the back of the compartment. The exposed edge shall be covered with automotive edge trim. The divider shall be located 10” from bio waste dogleg for stair chair storage-the agency is using the Stryker Stair-PRO Model 6252 dimensions 39” tall by 11” wide.

COMPARTMENT LIGHT: : Fluorent Plus™ Series Super-LED™ Compartment Tube Lighting lights shall be mounted along the sides and top of this compartment in the ceiling of the "M-2". The length shall be the entire length of the compartment and final location can be discussed with awarded vendor.

AUXILIARY CONDENSER: The module A/C system shall employ a separate condenser for the rear HVAC system. The condenser shall be through bolted to brackets that are welded to the body behind the curb side step well. Two electric cooling fans shall be mounted to the core assembly and blow toward the road. The condenser fans shall come on when either the cab or the patient cabin A/C unit is turned on.

Fan blades shall be protected by a high impact resistant grille work that is molded into the fan body. All fan wiring shall be routed, secured and protected from road hazards. The condenser body shall not fall within the vehicles maximum ramp break over angle. None of the O.E.M. Cab HVAC system components may be tied into for the rear AC system.

LEFT UPPER COMPARTMENT (M-2.5): This compartment shall be located on the drivers' side of the modular body, directly over the M2 compartment. The minimum compartment dimensions shall be 28.8" High x 40.5" Wide x 6" Deep. This compartment will be partial depth for electrical board. Key this compartment different than all other doors.

SPECIAL COMPARTMENT CONSTRUCTION (M-2.5): The aforementioned compartment shall be made of the following materials:

MATERIALS: All exterior compartment walls and back shall be constructed .090 aluminum sheet. The aluminum alloy, for all compartment parts shall be 5052-H32. All compartment floors shall be formed from .125 aluminum sheet. All compartment ceilings shall be formed from .090 aluminum sheet. The ceilings and

floors shall form around the sides and back to provide an overlapping joint. All interior surfaces shall be double action (DA) sanded to 180 grit. The floors and ceilings are bonded to the walls and back and intermittent welded on six (6) inch centers. Continuous welds around the compartment seams are not acceptable due to cracking, in time, located just outside the welded heat affected zone.

COMPARTMENT INTERIOR FINISH: This compartment shall have a double action sanded finish. The finish shall be created using 180 grit sand paper.

COMPARTMENT FRONT (M-2.5): A single hinged compartment door shall be hinged at the top. The door construction shall utilize the same construction techniques and materials that are used for the other hinged doors found on the unit body compartments. Install gas pistons to hold door open.

LEFT REAR COMPARTMENT (M-3): This compartment shall be located in the left rear corner of the body. The minimum compartment dimensions shall be 20.7" High x 40" Wide x 20.5" deep.

COMPARTMENT FLOOR: This compartment shall feature a three inch (3") dropped floor. The edge of the compartment shall be continuously welded to the lower door jamb.

COMPARTMENT DOORS OPTION: A set of double hinged compartment doors shall be set for this special request compartment. Each door shall have a single handle and two rotary latches. Doors shall comply with aforementioned construction techniques.

ADJUSTABLE SHELF: A standard duty aluminum adjustable shelf shall be provided. The shelf shall be formed of .125 (1/8") thick aluminum, with 2 inch upward turned lips on all four sides. The shelf shall be mounted on Unistrut tracking, infinitely adjustable, aluminum extruded, and heavy duty shelf track. Incrementally adjustable, non-aluminum shelf track is not acceptable.

SHELF BRACKET: Each above exterior adjustable shelf shall include four (4) self-gusseted .157” thick shelf brackets that will allow for easy adjustment up and down for each shelf. Each bracket shall be secured to the shelf by carriage head bolts on the top of the shelf and hex head bolts to secure them to the shelf tracking material in the compartments. This will guard against shelf deformation in the compartments when the shelves are secured in place.

COMPARTMENT LIGHT: : Fluorent Plus™ Series Super-LED™ Compartment Tube Lighting lights shall be mounted along the sides and top of this compartment in the ceiling of the "M-3". The length shall be the entire length of the compartment and final location can be discussed with awarded vendor.

REAR COMPARTMENT (M-4): This compartment shall be located beside the rear doors on the street side of the box. The minimum compartment dimensions shall be 40.5" High x 14.6" Wide x 85”/32" Deep.

COMPARTMENT DOOR (M-4): A single, left hinged, compartment door shall be set for this compartment. The door shall have a single handle and one rotary latch. Door construction shall comply with aforementioned techniques. Install a stainless plate with 5” lip hanging down below M4 door.

FIXED SHELF: A standard duty aluminum fixed shelf shall be provided. The shelf shall be formed of .125 (1/8") thick aluminum, with 2 inch upward turned lips on all four sides. The shelf shall be located from wall #1 to dogleg in center of opening.

RIGHT REAR COMPARTMENT (M-5): This compartment shall be located in the right rear corner of the body. The minimum compartment dimensions shall be 30.8" High x 40" Wide x 20.5" Deep.

CEILING VENTILATION: Specified compartments shall have a hat channel at the ceiling level. The hat channel shall run to no closer than 1" from the compartment side walls to allow for air exchange. Hidden from view, shall be two to three, (4") holes above the hat channel to exhaust the compartment air when the door is closed to allow it to close with minimal effort.

COMPARTMENT FLOOR: This compartment shall feature a three inch (3") dropped floor. The edge of the compartment shall be continuously welded to the lower door jamb.

COMPARTMENT DOORS OPTION: A set of double hinged compartment doors shall be set for this special request compartment. Each door shall have a single handle and two rotary latches. Doors shall comply with aforementioned construction techniques.

ADJUSTABLE SHELF: A standard duty aluminum adjustable shelf shall be provided. The shelf shall be formed of .125 (1/8") thick aluminum, with 2 inch upward turned lips on all four sides. The shelf shall be mounted on Unistrut tracking, infinitely adjustable, aluminum extruded, and heavy duty shelf track. Incrementally adjustable, non-aluminum shelf track is not acceptable.

SHELF BRACKET: Each above exterior adjustable shelf shall include four (4) self-gusseted .157” thick shelf brackets that will allow for easy adjustment up and down for each shelf. Each bracket shall be secured to the shelf by carriage head bolts on the top of the shelf and hex head bolts to secure them to the shelf tracking material in the compartments. This will guard against shelf deformation in the compartments when the shelves are secured in place.

COMPARTMENT LIGHT: Fluorent Plus™ Series Super-LED™ Compartment Tube Lighting lights shall be mounted along the sides and top of this compartment in the ceiling of the "M-5". The length shall be the entire length of the compartment and final location can be discussed with awarded vendor.

RIGHT FRONT COMPARTMENT (M-7): This compartment shall be located in the right front corner of the module body. The minimum compartment dimensions shall be 51.6" High by 27.7" Wide. The compartment door shall provide direct outside access into the right front advanced life support equipment storage area.

COMPARTMENT DOOR: A single, forward hinged, compartment door shall be set for this compartment. The door shall have a single handle and one rotary latch.

COMPARTMENT LIGHTING: The M-7 compartment shall have Kinequip Brand 12v "LED" lights with a chrome flange mounted on back wall and shall be activated by the door switch. In addition this compartment shall have Fluorent Plus™ Series Super-LED™ Compartment Tube Lighting lights shall be mounted along the

sides and top of this compartment in the ceiling of the "M-7". The length shall be the entire length of the compartment and final location can be discussed with awarded vendor.

Install a Ramp into M7 to be flush in door jamb. This is to aid in removal of equipment by the agency's personnel.

RIGHT FRONT BATTERY COMPARTMENT (M-8): This compartment shall be located in the lower right front corner of the module body. The minimum jamb pass through dimensions shall be 12.1" High x 27.7" Wide. The 2-battery tray shall accommodate two group 31 series batteries and be mounted on full extension slides with a 250 pound per pair rating. Drawer slides to be 26" and notch back of compartment and build covers to keep weather out.

COMPARTMENT DRAWER FRONT (M-8): A single non-hinged compartment door shall be bolted to the rollout tray. The door construction shall utilize the same construction techniques and materials that are used for the other hinged doors found on the unit body compartments. This front shall have two striker pins, one on each end of the door. The tray front shall support the door squarely with the jamb. The door shall roll out with the tray as a drawer front configuration.

REAR ACCESS DOORS: The rear of the module shall be equipped with double, hinged patient compartment access doors. The doors shall be centered on the body and align with the patient compartment aisle space. The doors shall measure 46-3/4 inches wide by 60-5/8" high, jamb to jamb.

REAR ACCESS DOOR JAMB: At the rear access doors, a full width, formed, stainless steel jamb protection plate shall be provided to prevent the cot frames from chipping the paint. The stainless steel protection package shall start from under the kick plate and follow the contour of the jamb extrusion, cover the end of the sub-floor and cover the last four inches of the vinyl floor covering.

ELECTRIC STEP: The side entry door of the ambulance shall have a 12 volt step manufactured by Ziamatic Corp. The use of this step reduces shock injury to personnel by decreasing the distance from the ground to the step surface. The step shall be powered by a single 12-volt electric actuator. The mechanism includes a patent pending in-line locking mechanism to hold the extended step rigidly in place. The step shall be wired into door interlock system to automatically extend with door opening and retract with door closing. The step shall be manufactured of cast aluminum step plate 24" wide x 10-3/4" deep with a non-skid surface to provide traction and safety.

ELECTRIC STEP DEPLOYED WARNING; There shall be a red flashing indicator displayed for the driver's attention when the optional electrical powered step is deployed outwards, the ignition is on, and the parking brake removed. This warning serves to assist the driver in notification that a potential hazard exists with the optional electric side entry step.

DOOR JAMB SILL PROTECTION: On the compartments specified below, the paint on the bottom horizontal portion of the door jamb shall be protected by a twenty (20) gauge minimum stainless steel protection plate. This plate shall originate at the toe of the door jamb lip (where it mates against the skin), then forms around the

lower flat surface, then forms up across the gasket mating surface and finally forms across the inner jamb surface and terminates where the compartment meets the jamb.

Rear Spine board or Stair chair Compartment Bottom Door Jamb.

Right Front "ALS" Compartment Bottom Door Jamb.

BODY PROTECTION AND BRIGHT WORK

WHEELWELL DIAMOND PLATE: The wheel well areas on both sides of the ambulance body shall be protected with the same design of diamond plate embossed aluminum tread plate material made up of .100 thick material. It shall be installed utilizing aluminum rivets to prevent electrolysis from dissimilar metals. After the protective diamond tread plate is installed, the perimeter shall be sealed with silver silicone caulking material.

WIRE/HOSE COVER: The area between the back of the cab and the front of the module shall have a .100 aluminum diamond plate cover, attached to the frame rails, to protect any hoses and/ or wires routed in that location. The cover shall be mounted to close-off the area with a finished appearance.

RUNNING BOARDS: Westin 6" Oval Tube Step Bars stall be utilized along the entry to the cab of the chassis by personnel. There shall be mud flaps installed behind the front tires to help prevent debris from accumulating on top of the step bars. These step bars shall be chrome with black rubber steps.

FRAMING: The rear step bumper shall exceed the current revision of KKK-A-1822. The bumper shall be framed in with ¼ x 2 x 4 6063-T6 aluminum rectangular tubing. The bumper shall be through bolted directly to the chassis frame.

OUTER PONTOONS: The outer bumper ends (pontoons) shall be covered in .100 polished aluminum diamond plate. The outer corners shall be rounded. Each pontoon cover shall be through bolted to the bumper frame with stainless steel, pan-head, Phillips head, ¼-20 bolts and Nylock nuts.

DEPTH OF BUMPER: The rear bumper shall protrude from the rear surface of the module body to the rearward most metal surface by at least thirteen and one half inches (13 1/2") and not more than fourteen inches (14").

CENTER STEP: A flip up step shall be provided to allow closer access to the patient cabin floor. The step shall be as wide as the rear access door jamb. The step shall have aggressive traction. The step shall have a red/white reflexite reflective strip across the flip up step. A stainless steel piano hinge shall have a staked in, ¼" diameter pin, one inch knuckles and one Type-F ¼" through bolt every four inches.

FENDER: The rear fenders shall be made of extruded rubber. The rubber fender mounting lip shall be reinforced with a radius matched 0.125 aluminum strip to promote even compression pressure between the fasteners. The mounting fasteners shall be 100% nylon bolt with 100% nylon nuts shall hold the fender to the body. The fastener centers shall not exceed ten inches (10).

SKIRT RAILS: The entire skirt-line of the body, forward and aft on the rear wheels shall have formed .188" diamond plate skirt rails to protect the body. Each skirt rail shall meet current Federal Specification KKK-A-1822. Each rail shall be chamfered 45 degrees at both ends. There shall also be a series of twelve (12) rectangular holes, six (6) each side. Six (6) of the holes shall face outward and six (6) shall angle downward. The side facing shall be for warning lights and the downward shall be for ground lighting. The rails shall be fastened through the bottom of the rail into the bottom of the modular body. The rails shall not cut into the paint. They shall be mounted through nylon isolators in such a manner that they are spaced off the body.

FRONT PAIR SKIRT RAIL LIGHTS

MODULE SKIRT LIGHTING; There shall be installed LED lighting into the module skirt rail to provide additional perimeter warning on the lower section of the module sides. Lighting shall flash and be controlled through the conversion electrical system. Lighting colors shall be RED/WHITE with location determined at a pre-build meeting.

MIDDLE PAIR SKIRT RAIL LIGHTS

MODULE SKIRT LIGHTING; There shall be installed LED lighting into the module skirt rail to provide additional perimeter warning on the lower section of the module sides. Lighting shall flash and be controlled through the conversion electrical system. Lighting colors shall be RED/WHITE with location determined at a pre-build meeting. On the curbside of module no lightning shall be in line with entry way of patient compartment door opening.

REAR PAIR SKIRT RAIL LIGHTS

MODULE SKIRT LIGHTING; There shall be installed LED lighting into the module skirt rail to provide additional perimeter warning on the lower section of the module sides. Lighting shall flash and be controlled through the conversion electrical system. Lighting colors shall be RED/WHITE with location determined at a pre-build meeting.

SKIRTRAIL LIGHT SWITCHING: The above mentioned skirt rail LED lights shall be wired to activate by separate switch in cab console.

MODULE SKIRT LIGHTING; There shall be installed Six Kinequip LED lighting into the module skirt rail to provide additional perimeter warning on the lower section of the module sides. Lighting shall be controlled through the conversion electrical system. Lighting colors shall be White with location determined at a pre-build meeting.

LED GROUND SWITCHING: The above mentioned LED Ground lights shall be wired to activate by separate switch in cab console and with any entry or compartment door

BODY CORNER POST PROTECTION: The lowest twenty four inches (24") of the corner post extrusions shall be protected against stones and road debris. The corner post guards shall be formed of .080 thick polished

aluminum diamond plate, contour fit to the corner post extrusions and riveted into place. A bead of silver colored, silicone sealant shall be applied across the top edge of the guards. The bottom of edge of the guard shall be left unsealed to promote moisture drainage.

FRONT OF BODY: The front of the body shall have skirt-line protection plates made of .080 aluminum diamond plate. The corner posts shall have form fit diamond plate protection height matched to the frontal plates. The height of the protection is twenty four inches up from the body skirt line.

REAR KICK PLATE: The rear kick plate shall be made of 0.100 inch thick polished aluminum diamond plate and run from corner post to corner post. The height shall be from the skirt-line of the body to the bottom door jamb on the rear access doors.

RECOVERY EYES: Two vertically oriented, heavy duty cast iron tow eyes with a one inch threaded stud shall be through bolted to a one half inch thick steel plate that is continuously welded to the end of the OEM Frame. The recovery eyes shall be recessed into the kick panel so that the tangency of the eyes are co-planer with or set back up to one inch. The recovery (tow) eyes shall not be trip hazard to personnel entering and leaving the rear access doors.

ACCESS HOLES; Access to the recovery eyes shall be made through a finished access hole through the Diamond plate "Kick panel" under the rear doors. The access holes shall be at least five inches in diameter and the edges of the holes shall be covered in automotive edge trim. The trim must be bonded to the kick plate in addition to the clamp on ribbing that shall be built into the trim.

RECESSED TAG AREA: The kick plate shall feature a centered and illuminated recessed area to mount a standard U.S. six inch high by twelve inch wide license plate. The recessed area must be located as specified below and aesthetically TIG Welded around the perimeter of the opening. Threaded inserts and bolts to install the tag shall be installed and provided.

RECESSED TAG AREA LOCATION: The tag area shall be centered in the kick plate.

TAG LIGHT: The tag area shall be LED illuminated with the park light circuit.

REAR ACCESS DOOR CHECKS: Rear access doors shall open at least 150 degrees. The door checks shall be 2 piece, heavy duty, cast aluminum, grabber type with gaskets. The door shall have a ½ round stock loop that plunges into a positive rubber/cast socket.

REAR MUD FLAPS: Mud flaps behind both sets of rear tires shall be supplied and installed. The mud flaps shall be 1/4" thick natural rubber material. Each mud flap shall be sandwiched between the wheel well liner and a torque distribution plate. The torque distribution plate shall be at least .100 thick aluminum plate. Each mud flap shall be through bolted to the wheel well liner with at least three (3) one-quarter inch (1/4") diameter stainless steel bolt.

CORROSION: The anti-electrolysis procedure for any holes that are drilled for application of materials is to be as follows, after the hole is drilled, the opening(s) are to be treated with Tactile 517 prior to installation of any fasteners to guard against any future corrosion.

EXTERIOR FASTENERS: All screw sites require a replaceable nylon insert for the fastener to thread into to isolate the dissimilar metals. Each hole shall be treated with an Electrolysis Corrosion Control compound (Tactile 517) prior to installation of the nylon inserts. All exterior screws shall be stainless steel.

BODY CORNER CAPS: The front and rear upper body corners shall include a cavity built into the aluminum body that shall not sacrifice the body integrity.

FRONT CORNER ICC LIGHTS: The front body corner caps shall include DOT approved compliant light fixtures with clear lenses. The lenses shall house ICC fixtures that include amber LED's to be mounted to the front and front corners. There shall also be additional LED lights that alternate red and clear within the light to act as additional warning lights.

FRONT I.C.C. LIGHTS: Clearance lights shall be provided per FMVSS 108. The lights shall illuminate the height of the vehicle, and define the vehicle center line. Three (amber) lights shall be provided on the front of the module and be populated with at least two LED's.

FRONT I.C.C. LIGHT GUARD: The above mentioned clearance lights shall be provided with a guard manufactured of bright finish material. The light shall protrude out past the light to protect them from debris.

REAR CORNER I.C.C. LIGHTS: The rear body corner caps shall include DOT approved compliant light fixtures with clear lenses. The lenses shall house ICC fixtures that include red LED's to the rear and rear corners. There shall also be additional LED lights that alternate red and amber within the light to act as additional warning lights.

REAR I.C.C. LIGHTS: Clearance lights shall be provided per FMVSS 108. The lights shall illuminate the height of the vehicle, and define the vehicle centerline. Three red lights shall be provided on the rear of the module and be populated with at least two LED's.

REAR I.C.C. LIGHT GUARD: The above mentioned clearance lights shall be provided with a guard manufactured of bright finish material. They shall protrude out past the light to protect them from debris.

CORNER CAP WARNING LIGHT SWITCHING: The above mentioned corner cap LED lights shall be wired to activate in Primary Only.

SIDE MARKER LIGHTS: Two Whelen 500 series Tail/Stop LED type side marker light shall be supplied and installed on the apparatus body per FMVSS and DOT Standards. Each light shall be wired with the running to be the tail steady and the turn is to be the stop and flash. Each light shall be the manufacturer's fully populated model with light emitting diodes. The lights shall illuminate the end of the vehicle body.

Whelen 600 Series, Tail Lights

TAIL LIGHT HOUSING: The 600 series tail lights shall be trimmed with a cast aluminum vertically mounted housing that is surface mounted to the rear of the modular body.

STOP/TAIL LIGHT: The stop/tail light fixtures on the rear of the body shall be Whelen Brand series 600 Fully Populated Light Emitting Diode. The lights shall operate as both tail and stop modes and shall be red when illuminated.

TURN SIGNAL LIGHT: The turn signal light fixtures on the rear of the body shall be Whelen Brand series 600, Light Emitting Diode. The lights shall operate as left and right turn signal lights, and shall be amber arrow when illuminated.

BACK UP SIGNAL LIGHT: The backup signal light fixtures on the rear of the body shall be Whelen Brand series 600, LED to operate as left and right back up signal lights and shall be clear when illuminated.

LED TURN FLASHER REPLACEMENT: There shall be a load LED module installed in the system to allow the turn signals to flash at the proper rate.

PATIENT ON BOARD LIGHTS: There shall be (3) Whelen 500 Series LED Amber light installed on the ambulance. There shall be (1) located on each rear entry door panel in lower outer corner and (1) on curb side entry door panel in lower outer corner.

AUXILIARY LED FOG LIGHTS: A pair of (8) LED fog lights shall be supplied and installed on the front bumper and center aligned with the front head lights. The 6"W x 3.5"H Rectangle light housings shall be installed. The switch shall be mounted in the cab console with the input of the switch powered with the ignition switch. The current draw for the lights shall not flow through the switch itself, but through a relay system. Vendors' proposed light shall be confirmed and approved by the agency prior to vehicle production.

AUXILIARY DRIVING/FOG LIGHT SWITCHING: The above mentioned lights shall be wired thru the chassis ignition and the conversion battery switch.

EXTERIOR FLOOD and LOAD LIGHTING:

LEFT SCENE LIGHTS: Three scene lights shall be provided on the left side of the module. The lights shall be Whelen LED-24, 900 series. The scene light group shall meet or exceed the present revision of the Federal specification KKK-A-1822. Positioning shall be front/middle/rear of module.

SCENE LIGHT SWITCHING: The scene lights shall come on with two separate rocker switches labeled Right Flood and Left Flood, located in the center cab console controlled by the master switch. The right (curb side) scene lights shall also come on when the side entry door is opened.

LEFT SCENE LIGHTS: Three scene lights shall be provided on the left side of the module. The lights shall be Whelen LED-24, 900 series. The scene light group shall meet or exceed the present revision of the Federal specification KKK-A-1822. Positioning shall be front/middle/rear of module.

SCENE LIGHT SWITCHING: The scene lights shall come on with two separate rocker switches labeled Right Flood and Left Flood, located in the center cab console controlled by the master switch. The right (curb side) scene lights shall also come on when the side entry door is opened.

RIGHT SCENE LIGHTS: Three scene lights shall be provided on the right side of the module. The lights shall be Whelen LED-24, 900 series. The scene light group shall meet or exceed current revision of the Federal specification KKK-A-1822.

LEFT SCENE LIGHTS: Three scene lights shall be provided on the left side of the module. The lights shall be Whelen LED-24, 900 series. The scene light group shall meet or exceed the present revision of the Federal specification KKK-A-1822.

REAR LOAD LIGHTS: Two rear load lights shall be provided on the rear of the module, above the rear access doors. The lights shall be Whelen LED-24, 900 series. The scene light group shall meet or exceed current Federal specification KKK-A-1822.

REAR LOAD LIGHT SWITCHING: The rear load lights shall come on with a separate rocker switch located in the cab console controlled by a master switch. The switch shall be labeled "Rear Flood" and shall control both rear load lights on the rear of the body and above the rear access doors. The rear load lights will come on when rear doors are opened.

AIR CONDITIONER, SECONDARY SYSTEM: An auxiliary air conditioner (A/C) shall be supplied and installed in the patient area of the modular body. The A/C unit shall be a self-contained unit with a cooling output capacity of 12,000 British Thermal Units (BTU). The unit shall be mounted per the A/C unit manufacturer's specifications. The unit shall be located in the top of the ALS cabinet and the control box mounted in the M2 compartment. Install an access panel in rear of ALS to be able to access hoses.
The A/C unit shall run on one hundred fifteen volts, alternating current at a frequency of sixty Hertz. Current draw shall not exceed fifteen Amperes, including the compressor and the fan motor set on HIGH speed.

REFRIGERANT: The system shall operate on 24.5 ounces of R-134a Freon.

THERMOSTAT: A built in thermostat, utilizing a capillary tube as a metering device, shall have a temperature range of sixty degrees Fahrenheit.

UNIT WEIGHT: The overall unit weight shall not exceed eighty-five pounds.

PATIENT CABIN - AIR CONDITIONING SYSTEM: The air conditioning system specified herein shall be completely separate from the cab HVAC system. ALL components of the A/C (HVAC) system shall be match selected and sourced from one air conditioning vendor. The HVAC cabinet will be raised 12” off floor with an access panel on rearward section of cabinet behind attendant seat.

VACUUM PUMP: There shall be a vacuum pump to activate the Patient Area "Heater Control Valves" when the patient area heater is energized. The electrical layout shall be shown on the custom wiring schematics at the time of delivery.

AIR CONDITIONING COMPRESSOR: There shall be installed an additional compressor onto the chassis to support the HVAC needs of the ambulance section.

REAR AIR CONDITIONING EVAPORATOR: The module shall have an additional, self-contained A/C unit complete with an evaporator coil, heater core and a 12 volt blower. The blower shall consist of two concentrically located cylinder fans mounted on one common 12 volt motor. The fan shall be three speed and shall deliver 580 cubic feet of air per minute on high.

The unit shall be rated at least 32,000 British Thermal Units (BTU) in A/C Mode and 43,300 BTU in Heater Mode. The Vehicle A/C and Heat system must meet or exceed current Federal specification KKK-A-1822.

CONDENSATION DRAIN PAN: A condensation pan shall be provided to collect water condensation from the evaporator coil. The drain pan shall be formed from 1/8 ABS plastic sheet and shall be listed (tilted) toward the drain fitting. The Evaporator unit shall be mounted so that the weight of the coil, case and blower assembly does not rest on the pan. Additionally the entire evaporator shall list toward the condensation drain fitting to enhance water flow to the drain hose. The drain hose shall be ½ I.D., collapse resistant and fiber reinforced poly-tubing. The hose shall be routed from the condensation pan to the street.

HEATER HOSES: Heater hoses for the cab shall remain O.E.M. 5/8 inside diameter, EPDM Nomex rubber hoses shall route from the O.E.M tie in point to the rear heater core.

AIR CONDITIONING HOSES: All A/C Hoses shall meet Society of Automotive Engineers (SAE) J-2064. The discharge (High side) hoses shall not be less than 5/16 inside diameter (Size 6). The suction (Low side) hoses shall not be less than ½ inside diameter (Size 10). All hoses shall be A.S.T.M. Type D, with a thermoplastic inner liner (Nylon) that is protected by two textile reinforced braided electrometric outer jacket. The hose shall be qualified for use with R-134A, R-404 and R-407. The hose specified herein shall be subjected to a battery of tests per A.S.T.M. D-380. The results shall be supplied by the hose manufacturer.

RETURN AIR GRILLE: Installed around the Heat/AC unit shall be a perforated 13 gauge steel grille. The grille shall allow 156 inches of return air flow to the Heat/AC unit. The grille shall provide complete access to the Heat/AC unit. The grille shall have a black powder coat finish. There shall be two quarter turn locks supplied and installed on the grille. The locks shall have a black powder coated finish. Lock pawl activation shall be enabled with a round bitted key.

CARBON FILTER: The return air grille shall be supplied with a pre carbon filter that is designed to fit the slot within the grille. It shall be installed and shall not rattle. The filter shall be replaceable and/or cleanable by this department's fleet maintenance in the field.

CEILING DUCTED INSULATED AIR CONDITIONING DELIVERY: One duct shall route over the primary patient and attendant, and one shall run over the lap area of squad bench. Each duct shall contain four spherically adjustable registers, evenly spaced, total of 8. There shall also be two registers located directly behind the attendant's seat.

REAR AC CONTROL / THERMOSTAT: The air conditioning and heat for the patient cabin shall be controlled by a thermostatically sensitive panel located in the action area console. The panel shall feature a three speed fan control switch, a system "heat-off-cool" switch and a variable temperature control. LED lights shall indicate "cool" and "heat" modes. A digital display shall indicate the patient cabin temperature.

LINER PANELS: The patient cabin head liner substrate material shall be one quarter inch thick, hardwood plywood. The substrate shall be covered with a minimum 28 mil thick gloss white laminate. An upholstered center panels shall provide access to ceiling wiring and be covered in the same upholstery type as the seat and back rest pads found on the squad bench and/or CPR seat.

PATIENT CABIN DOME LIGHTS: The patient cabin shall have eight dual intensity, Kinequip LED dome lights in the ceiling. The domes centers shall be aligned along two, four light banks. The left bank shall provide light directly over the patient; the right bank shall provide light directly over the aisle/squad bench. The dome lights and configuration shall meet current Federal Specifications KKK-A-1822.

INTERIOR LIGHTING

PATIENT CABIN ADDITIONAL LIGHT: In addition to the dome lighting, FOUR surface mounted round dome light shall be installed centered between the right and left bank of dome lights. The light shall be 12 Volt Kinequip K15 (7" Diameter) LED Dome Light or approved equal. A cutoff switch located in the action area panel will be installed.

ADDITIONAL LIGHTING LOCATION: The aforementioned dome lights shall be located in the center panel of the patient cabin ceiling. The longitudinal light position shall emphasize light intensity on the patient.

15 MINUTE TIMER: A variable 0 to 15 minute, spring wound mechanical timer switch shall provide temporary illumination of the patient cabin for check out purposes. The switch input shall be wired directly to the vehicle batteries. The switch shall be located on the curbside wall, by the C/S access doors over the squad bench lid. The timer circuit shall comply with the latest revision of KKK-A-1822.

LIGHTS POWERED BY TIMER: The aforementioned timer shall power all of the fluorescent lights, mounted in the ceiling panels. The duration of the light shall vary with the setting of the timer.

I. V. BAG HANGING HARDWARE, No 1: One self-contained recessed I. V. Hook assembly shall be installed in the ceiling. The I. V. Hook assembly shall fold and stow recessed in a cast aluminum housing. The hooks are to be spiral shaped to preclude I. V. Bag from falling off with push button release for each fluid bag. The I. V. Hook assembly shall hold (2) two bags of fluid. A rubber with Velcro anti-sway device shall be included for IV retention, without depending on adjacent cabinetry.

LOCATION; Located of the Primary patient, in the close proximity to the Head/Chest area of the patient.

I. V. BAG HANGING HARDWARE, No 2: One self-contained recessed I. V. Hook assembly shall be installed in the ceiling. The I. V. Hook assembly shall fold and stow recessed in a cast aluminum housing. The hooks are to be spiral shaped to preclude I. V. Bag from falling off with push button release for each fluid bag. The I. V. Hook assembly shall hold (2) two bags of fluid. A rubber with Velcro anti-sway device shall be included for I. V. retention, without depending on adjacent cabinetry. Located of the Secondary patient, in the close proximity to the Head/Chest area of the patient.

RECESSED CURB SIDE OVER HEAD ASSIST RAIL: The rail shall exceed the current revision of current Federal specification KKK-A-1822. The rail shall be 1 ¼ diameter, 100% stainless steel with gray anti-microbial coating and 72 inches long. All rail fittings shall be TIG welded to the main rail. The rail shall be recessed in an ABS pan 1.5", located curbside of center pad.

MODULE INSULATION: The module insulation, except the under the floor shall consist of material having the following characteristics, 8mm thick nonabsorbent, reflective and shall have an air cell core. The air cell core shall consist of one layer of polyethylene bubble film that is sandwiched between one (1) layer of 99 percent pure aluminum foil and white colored polyethylene film. The insulation shall be installed with at least ½ air space from exterior skins, exposed to direct sun light. The insulation thermal rate testing shall be conducted in accordance with A.S.T.M. E84-89A, ANSI 2.5, NFPA 255, UBC 42-1, and U.L. 723. The walls shall not be less than R-15.0 down, R-7.31 Horizontally and R5.4 up. The insulation shall have a NFPA Class A and a UBC Class 1 fire rating with a flame spread index of 20 and a smoke developed index of 30. The application shall include a single layer of the insulation on all four walls, doors, compartments, ceiling and floor.

MODULE FLOOR INSULATION: The floor shall have 0.5 inch thick mass loaded acoustical (XPS) extruded polystyrene foam composite attached to the inside floor surface to provide a noise reduction of 75%. Patient compartment floor is now fully insulated for sound deadening and enhanced temperature control without increasing load height. The total R value of the floor must be greater than or equal to 4.5 to 5.0 per inch.

ADDITIONAL FRONT WARNING LIGHTS: There shall be installed Six (6) warning lights in the front upper zone of the box module. There will be four (4) Whelen 900 Series Red Super LED lights with clear lens and two (2) Whelen 900 Series White Super LED light with clear lens. The lightning configuration will be Red/White/Red/Opticom/Red/White/Red. All lights are programmable and they have an installed flasher for operation. The above LED lights shall be programmable to flash without an external flasher. Deep chrome housings will be used for the warning lights to provide additional protection and a distinctive appearance.

ALTERNATIVE LIGHTBAR SWITCHING: The switching of the lighting package that makes up the alternative light package shall be through the Primary/Secondary switching system. All emergency lights shall be through the primary side of the switch and any clear lighting (if optioned) shall be eliminated through the secondary side of the switch. Additionally ALL forward facing white lights shall be eliminated when the vehicle transmission is placed in the “P” park position and the warning lights are on.

WARNING LIGHT FLASHER: There is not to be an external flasher unit. The LED warning lights shall each flash independently of each other. There shall be no preset flash pattern and it will not comply with the present revision of KKK-A-1822. This agency chooses to have this flash pattern as we feel that it is as effective as the required flash pattern incorporated within the verbiage of the present revision of KKK-A-1822.

PRIMARY / SECONDARY SWITCH: The warning light system shall be controlled with a switch (es) located in the cab console. The switch (es) shall allow for "Off" position, "Primary" position, and "Secondary" position. Each output of the switch shall be indicated with a small red lamp, integrated in the switch legend area. The switch shall have an engraved, illuminated legend that clearly defines the function of the switch.

OPTICOM: The ambulance shall include a GTT Brand Model 792H Opticom unit with a switch in the console with an auto off if vehicle is taken out of drive gear. The above mentioned Opticom unit shall be ordered and incorporated in the center front warning light area and mounted using a Whelen 900 Series chrome bezel and clear cover to uniformly match the Whelen 900 Series warning lights listed previously.

Grille Lights: A Whelen 8 Light Dominator Plus will be mounted within the grille of the chassis. This emergency light will not interfere with the OEM airflow requirements set forth by the chassis manufacture. The emergency light shall be mounted from mid-point to the bottom portion of the grille opening. The Dominator Plus will have clear lens with the following color configuration: W/R/W/R/R/W/R/W (W=white/R=Red).

FRONT INTERSECTION LIGHTS: A set of warning lights shall be installed on the chassis front fender to warn oncoming intersection traffic. The lights shall be two Whelen 700 Series Super Split LED light with Red and White LED diodes and clear lens. The light shall feature an internal flasher. Deep chrome housings will be used for the warning lights to provide additional protection and a distinctive appearance.

FRONT OUTER UPPER BODY LIGHTS (2): There shall be two warning lights in the upper outermost positions. There shall be installed (2) Whelen 900 Series Red LED lights with Clear lens. The lights are programmable and have an installed flasher for operation. The above LED light(s) shall be programmable to flash without an external flasher.

MODULE SIDE WARNING LIGHTS: There shall be four Whelen 900 series Super LED lights in the upper outermost positions.

WARNING LIGHT: There shall be installed a Whelen 900 Series Red LED lights with Clear lens. The light is programmable and has an installed flasher for operation. The above LED light(s) shall be programmable to flash without an external flasher.

ADDITIONAL WARNING LIGHTS: There shall be additional warning lights installed on the mid side of the ambulance module toward the rear. On the side of the module, over each rear wheel well opening on the ambulance body. There shall be installed a Whelen 700 series Super LED light with Red LED diodes and clear lens. The light shall feature an integrated flasher. The above LED light(s) shall be programmable to flash without an external flasher.

REAR UPPER WARNING LIGHT ZONE: There shall (2) Rear Upper Body Lights: 900 Series LED

On the rear of the module, one in each upper outer corner inside of the structural corner post.

ADDITIONAL REAR WARNING LIGHTS; There shall be installed (2) Whelen 900 Series LED warning lights.
There shall be installed a pair of Whelen 900 Super LED light with Red/Amber Super LED diodes and clear lens. The light shall feature an integrated flasher. On the rear of the module, aligned with each upper window in the access doors. The light shall flash through the window when the doors are opened.

REAR CENTER UPPER BODY WARNING: There shall be installed a Whelen 900 series light at the upper center location.

WARNING LIGHT: There shall be installed a Whelen 900 Series Amber LED lights with Clear lens. The light is programmable and has an installed flasher for operation. The above LED light(s) shall be programmable to flash without an external flasher.

ADDITIONAL WARNING LIGHTS: There shall be a pair of Whelen series 600 Super LED warning lights located on the rear doors (1) on each side.

ELECTRICAL SYSTEM 12 Volt - General

MODULE GROUNDING: A minimum of (2) two braided ground straps shall be through bolted to the chassis frame and the floor structure of the modular body. The bolts shall be at least 3/8 diameter. A flat washer shall be provided under the head of the bolt, over the strap lug. Additionally an internal tooth lock washer shall preclude loosening. Conventional stranded copper cables are not acceptable because they do not suppress RFI and does not meet SAE J551.

GENERAL GROUNDS: To comply with current Federal specification KKK-A-1822 plus enhance ground quality and reduce trouble shooting time, all devices wired within the ambulance conversion shall be centrally grounded. Each device shall have a separate ground wire routed to a central buss bar then grounded via fine strand cable to the module body. Local grounds are acceptable only when the device is drawing at or less than 100 milliamps (0.1 amps).

12 VOLT WIRE: All wires within the ambulance harnesses shall meet current Federal specification KKK-A-1822. All wire insulation shall be GXL cross-linked polyethylene. Permanent wire identification and wire function shall be printed on 4 centers along the full length of the wire. Wire conductors shall be stranded copper.

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.

SPOT LIGHT: A hand held Whelen Model P46HHS 1800 lumen spot light will be wired to the side of the passenger's side console and enabled through the battery switch.

GEO-TAB: Pre-wire required – Agency will notify awarded manufacture of outputs needed for pre-wiring.

EXTERIOR BACK-UP SPOTTER SWITCH: The ambulance manufacturer shall supply and install a weather proof momentary switch. The above switch shall be located on the street side of the module body, on the driver's side near the corner post extrusion and approximately 44" down from drip rail above M3.

INTERIOR BACK-UP SPOTTER SWITCH: The ambulance manufacturer shall supply and install a weather proof momentary switch. The above switch shall be located inside the patient compartment, on the right rear cabinet face. The switch shall be located so the EMT in the rear can look out the rear window and depress the switch.

BATTERY SWITCH: A conversion disconnect switch shall be supplied. Constant battery power shall be supplied for device memories. None of the chassis functions shall be affected by this switch per Fords Qualified Vehicle Modifiers program, bulletin No 63. An indicator light shall illuminate on the cab console panel.

BATTERY ISOLATOR: There shall be installed an automatic isolator to provide a specific battery backup for module or cab installed computer equipment. This isolator will have automatic control to allow for battery charge-up when the module is on shoreline or the ignition is on and running. It shall be installed securely and in a location allowing for service and inspection.

BATTERY JUMPSTART: There shall be a remote mounted Anderson style connector plug mounted on the exterior of ambulance chassis for hook up direct to batteries from an external source. The final location of this shall be determined by this agency for ease of operation. There shall be a set of cables built and shipped with the unit that consist of Anderson style connector on one end to match the end on the remote setup and jumper cable "Alligator" clamps on the other end. The cables shall be approximately 12' long.

BATTERY JUMPSTART LOCATION: Front Bumper Area.

COMPULSE CHARGE PARTNER: This will isolate the computer battery from the OEM batteries. This battery will be connected together only when the OEM ignition is on or the shoreline is plugged in for charging the computer battery.

POWER MODULE DOOR LOCKS: Each compartment and/or entry doors listed below shall Lock or Unlock with a single depression of a momentary switch. Each door shall be fitted with a bidirectional, momentary electric solenoid designed to operate a mechanical rod in a linear fashion. The rod shall mechanically interface with the door lock mechanism inside the door. All rod connections shall be designed for high cycle operation without mechanical disconnection. The battery compartment shall NOT have the power lock/unlock feature. This compartment shall remain key operated.

DOOR LOCK SWITCH: The aforementioned door lock(s), shall be wired to activate with the OEM cab door locks and their switches in the cab.

DOOR LOCK SWITCH: A momentary single pole, double throw rocker switch shall be supplied in a switch panel and located on the curb side wall near the side entry door. The panel shall be accessible from the street without getting into the module. The panel shall include an engraved legend that describes the function of the switch. The legend shall illuminate with the battery switch.

OEM KEY FOB OPTION: The aforementioned door lock(s), shall be wired to activate with the OEM cab door locks and their switches in the cab as well as the OEM remote key fob activator.

DOOR LOCK SWITCHES: The module entry doors shall have internal integrated electric door lock activation switches.
ONLY the following doors shall have power door locks:

POWER DOOR LOCK (M1); There shall be installed an electric solenoid powered actuator for the compartment door lock.

POWER DOOR LOCK (M2); There shall be installed an electric solenoid powered actuator for the compartment door lock.

POWER DOOR LOCK (M-3); There shall be installed an electric solenoid powered actuator for the compartment door lock.

POWER DOOR LOCK (M-4); There shall be installed an electric solenoid powered actuator for the compartment door lock.

POWER DOOR LOCK (Rear Module Entry); There shall be installed an electric solenoid powered actuator for the module door lock.

POWER DOOR LOCK (M-5); There shall be installed an electric solenoid powered actuator for the compartment door lock.

POWER DOOR LOCK (Curbside Entry Door); There shall be installed an electric solenoid powered actuator for the module entry door lock.

POWER DOOR LOCK (M7); There shall be installed an electric solenoid powered actuator for the compartment door lock.

REMOTE KEYPAD #1: There shall be a remote keypad installed on the ambulance for unlocking the doors that have electric door lock actuators. The keypad shall be installed on the side of body by the curbside door.

REMOTE KEYPAD #2: There shall be a remote keypad installed on the ambulance for unlocking the doors that have electric door lock actuators. The keypad shall be installed on the side of body by the rear doors.

HIDDEN DOOR LOCK SWITCH: A weather proof momentary switch shall be installed, concealed from view. Installation of Remote Door Lock Switch feature may increase likelihood of unauthorized entry into vehicle. By checking this option, purchaser further agrees to hold AEV or chassis manufacturer harmless for any loss of vehicle or contents caused by unlawful access. The switch shall be located in the OEM grille area on the driver's side near the front bumper area.

CAMERA SYSTEM: The vehicle shall include a single camera backup monitoring system. The system shall include, but not limited to a 7" color monitor that is mounted within clear view of the driver, but not to obstruct view out the front windshield at eye level. The monitor shall be connected to a camera mounted on the rear of ambulance body to allow the driver to view as they are backing up. Unless otherwise specified, the camera shall be mounted over the rear doors as close to the centerline of the vehicle a possible. The system shall include all the necessary cables and adapters to connect the system together with power as needed. The monitor shall automatically be tied in so that when the vehicle is placed in reverse, it will automatically illuminate the monitor to display the image from the camera. The monitor controls shall allow for the monitor to be illuminated manually when the vehicle is in any gear.

CAB MONITOR MOUNT: The vehicle shall include an ABS monitor housing, mounted on cab ceiling. The housing shall feature a flip down feature to allow the monitor to be put in the up position when not needed, and flipped down for viewing.

CAMERA COLOR: The casing and bracket of the above mentioned camera shall be White.

CIRCUIT BOARD: The single relay control board is a fully integrated relay control board designed and built to IPC Class 3* guidelines. The VF4 style socket relay is rated at 20A at 24 VDC with built-in on-board diode suppression. Three status indicators for Blown Fuse, Coil Power and Load allow for intuitive operation and troubleshooting. Also included is a medium sized ATO blade style fuse / circuit breaker holder that is rated for 20A. Wiring connections are made via a WAGO Cage Clamp removable lockable connector, which provides a secure, vibration proof and corrosion resistant wire termination. Installation time is reduced by as much as 75%. All of these features are mounted in a 2"x2" DIN Rail mountable package. Clearly, the Single Relay Control Board is a best-in-class solution for Emergency Vehicle relay applications.

MASTER SWITCH: The patient area master switch shall be located in the cab switch console.

CIRCUIT BREAKERS: All conversion related circuits shall be protected with manual reset blade breakers. The value of the breaker for each circuit shall not exceed 75% of the rated capacity of the weakest component in the circuit.

LOAD MANAGER: Sequential switching of lamp loads is extremely important on this vehicle. An "Emergency Master" switch that simultaneously energizes a large number of lights can momentarily reduce the vehicle's voltage. Similarly the simultaneous removal of these loads can cause high alternator output voltage transients which may damage sensitive electronic equipment. The LOAD MANAGER Sequencer assures that loads are applied and removed gradually, thus eliminating the possibility of inducing failures in the vehicle's equipment.

The load manager shall be a precision, solid state controller which sequentially switches "ON" seven relays at 1/2 second intervals. Individual switches shall enable the operator to select output "ON or "OFF" status, at any time. The sequencer shall be initiated by the "Emergency Master" switch. The sequencer priority shall be set at the pre-build conference.

The aforementioned LOAD MANAGER shall monitor the vehicles battery voltage. When the electrical loads have exceeded the charging system output, the voltage falls. When the voltage falls to 11.5 volts, the LOAD MANAGER will begin to shed up to five loads. The load shed priority shall be set by the circuit significance, followed closely by circuit draw. The LOAD MANAGER will shed loads until the voltage level begins to rise. A LOAD MANAGER Bypass switch shall be installed on the circuit board to override.
The device Warranty shall be covered by the device manufacturer for a period of three years.

CAB CONSOLE: A custom console shall be built with a flat area at the top of the console for computer mount. The switch panel will be angled with flat radio storage area and a map slot at the rear. End panels and center console bulkhead panels shall add rigidity and square to the console. The substrate shall be laminated per the following finish specification.

HOUR METER: An hour meter shall be included with the chassis. It shall be OEM on chassis and not an aftermarket system. The gauge shall be readily visible for a technician to view for record keeping as part of the OEM gauge cluster.

SWITCH PANEL, CAB CONSOLE: A switch panel made from 3/16 thick, translucent, acrylic sheet. The acrylic material shall evenly disperse label, indicator illumination. The Sheet shall be coated with a black colored, rigid plastic film. A CNC router shall engrave, permanent switch legends, switch holes, meter holes, and indicator legends. The switches shall be organized in two rows. The top row shall start with an Emergency Master, followed by all of the emergency related switches. The bottom row shall start with a Master Switch, followed by all of the non-emergency related switches.

CAB DOME LIGHT: There shall be a RED LED 2"dome in the cab ceiling. The light shall be 12vdc and activate when any cab or module door is ajar. The light shall be wired to be battery switch hot.

CHARGING SYSTEM GAUGE PACKAGE

VOLT METER: The charging system voltage condition shall be indicated through a conventional two inch diameter, analog type gauge. The volt meter shall be wired through the ignition switch and indicate system voltage ranging from eight to sixteen volts, direct current.

COMPARTMENT AJAR INDICATOR LIGHT: A back lighted "Compt Open" light shall be engraved in the cab console's main switch panel. This light color shall be AMBER. The light shall meet current Federal Specification KKK-A-1822.
In addition an additional Compartment Ajar indicator Light shall be mounted overhead with the cab of the vehicle. It shall be a Whelen 500 Series LED and illuminate AMBER. This light shall be placed overhead within the cab directly over the console.

INDICATOR LIGHT FUNCTION: The door ajar indicator light shall flash when two conditions are met:

1) The main conversion power switch is turned to the ON position.
2) Any compartment or entry door is opened.

The door ajar light shall come ON with a door that is not COMPLETELY latched.

BATTERY POWER "ON" INDICATOR LIGHT: An indicator light, labeled "Amb Pwr" shall be engraved in the cab console's main switch panel. The light color shall be GREEN. The light shall meet current Federal Specification KKK-A-1822.

INDICATOR LIGHT FUNCTION: The "Amb Pwr" indicator light shall burn steady when the main conversion power switch is turned to the ON position.

DOOR AJAR INDICATOR LIGHT: A back lighted "Door Ajar" light shall be engraved in the cab console's main switch panel. This light color shall be RED. The light shall meet current Federal Specification KKK-A-1822.
In addition an additional DOOR Ajar indicator Light shall be mounted overhead with the cab of the vehicle. It shall be a Whelen 500 Series LED and illuminate AMBER. This light shall be placed overhead within the cab directly over the console.

The Compartment Ajar and Door Ajar light mounted overhead (Whelen 500 Series) within the cab can be wired to activate with either a compartment or door ajar.

DOOR/COMPARTMENT AJAR BUZZER: In addition to the standard door and compartment ajar lights, there shall be a buzzer to be installed in the cab console to activate at the same time the lights flash.

CAB CONSOLE FINISH: The console body shall be finished with a 20 mil Easy Grip film. The Easy Grip shall be a self-adhesive as well as bonded to the substrate with high bond contact adhesive. All joints shall be inconspicuous and bonded along the edges.

BACK UP ALARM: The apparatus shall include a 97 to 107 decibel back up alarm, activated by shifting into reverse. Install Dealer Supplied Backup Sensor System with Sound

CUT-OFF SWITCH, BACK UP ALARM: The backup alarm shall include a momentary type cut off switch to silence the alarm. The alarm enable circuit shall automatically reset when the transmission is shifted out of REVERSE, hence the backup alarm will sound when the vehicle is placed in REVERSE again.

GROUND STRAPS: Four (4) 7/8" wide by 1/8" thick, fine strand, woven straps shall provide a ground path from the module body to the chassis frame. Woven straps filter out RFI noise originating from alternators, strobe power supplies and other devices that may find their way into intercom, stereo and two way communication radios. Each end of the ground straps shall be through bolted with 3/8" diameter, grade 5 or 8, hex head bolts and lock nuts. Each connection site shall be cleaned to the bare metal prior to fastening the strap. The connections shall have a dielectric anti corrosion spray applied.

125 VAC to 12 VDC CONVERTER / BATTERY CHARGER No 1: A IOTA Engineering, LLC, Model DLS-15 Converter with a 15 ampere output capacity shall be supplied and installed. The device shall convert a 125 Volt, 60 Hertz Alternating current input into 13.4 to 13.6 Volt Direct current. The device shall provide clean, constant D.C. Power. When specified below this device shall be capable of serving as a battery charger that charges up to its full output capacity and tapers back the output to a maintenance mode depending upon the need of the batteries.

This DLS series battery charger/power supply shall be designed with high quality components that have life span ratings of up to ten years of continuous use. This device shall feature self-protection features including:

1) AC Input Protection: protects against damaging spikes (up to 190 Volts) AC that may come from the line or generator.
2) Reverse Battery Polarity Protection: protects against incorrect wiring hook up with fuses that can be easily replaced.
3) Brown Out Input Protection: protects against input spikes created by temporary or intermittent loss of input power.
4) Over Current Protection: protects against supplying too much output current.
5) Over Temperature Protection: protects against thermal damage with a unique proportional fan control circuit that turns on a whisper quiet when the unit reaches 35 degrees Fahrenheit (35 degrees Celsius).

Warranty: The device shall be covered by the manufacturer for a period of two years against defects in materials or workmanship from the date of retail delivery.

An alternate charger / Converter may be supplied provided the alternate is equal in function, warranty and the alternate device has been approved by the agency prior to production.

CONVERTER TO POWER: The aforementioned converter/charger shall power the fluorescent specified within these specifications when the shoreline is connected and the aforementioned converter/charger has 110vac power.

12 VOLT POWER INVERTER: A highly reliable Vanner 1050CUL electronic power conversion unit that utilizes MOSFET power semiconductors and a microprocessor controller shall be supplied, installed and wired to the outlets specified herein. A Built in 30A automatic transfer switch shall transfer all loads from the inverter to the shore line, when the shore line cord is plugged into 125 vac shoreline power. The device shall convert 12 volt DC battery power into 1,050 watts of precisely regulated modified sine wave 125 volt AC power. The device shall hold output power between 114 volts and 126 volts AT a frequency of 59.9 to 60.1 Hertz.

The device shall not consume more than 105 amperes at 12 volts direct current (DC). The device shall be certified by Underwriters Laboratories to the present revision of the Federal Specification KKK-A-1822. The location of the inverter is specified below.

POWER SOURCE FOR PORTABLE EQUIPMENT No 1: Power sources are located and included with a purchased inverter. The power sources shall be located (1) console, in the cab and (1) behind the A/A panel.

POWER SOURCE: The aforementioned power provision shall be fed off of the output of the ignition switch or when the battery charger/conditioner is connected to the shoreline.

BATTERY CHARGER/CONDITIONER: When the system is connected to shore/utility power, the battery charger (built into the aforementioned inverter) will automatically charge the batteries, then keep them fully charged. The system's microprocessor controls the charging sequence, starting with the high charger (55 Amp) mode. When the batteries are fully charged, it switches to the ready/maintenance mode to keep the battery "topped up". The battery charger shall be designed to charge either lead acid flooded (wet) or gel type batteries.

BUILT-IN BATTERY CHARGER: The aforementioned built in battery charger shall be wired to the vehicle batteries to allow charging/conditioning when the shoreline is energized.

The power inverter shall reside in the left front middle compartment and should have a protective cover preferred Lexan type material to provide protection but still allow access for service by agency.

LOW VOLTAGE INDICATOR: There will be an amber indicator light located in the cab console to illuminate if the vehicle voltage drops below 11.8 volts DC. If the voltage remains under 11.8 volts DC in excess of 120 seconds, there shall be a warning buzzer in addition to the light.

COMMUNICATIONS RADIO(S) RELATED;

RADIO POWER

POWER SOURCE FOR COMMUNICATION RADIO(S) No 1: Positive and Negative polarity ten gauge wires shall be supplied and installed for subsequent installation of communications radio(s). The wires shall be barreled off and protected by a thirty (30) ampere automatic reset circuit breaker

POWER SOURCE: The power provision shall be fed off of the output of the conversion main power (Battery) switch. The aforementioned power source shall be located in the center console, in the cab.

POWER SOURCE FOR COMMUNICATION RADIO(S) No 2: Positive and Negative polarity ten gauge wires shall be supplied and installed for subsequent installation of communications radio(s). The wires shall be barreled off and protected by a thirty (30) ampere automatic reset circuit breaker.

POWER SOURCE: The power provision shall be fed off of the output of the conversion main power (Battery) switch. The power source shall be located behind the Action area control panel in the patient cabin.

POWER SOURCE FOR COMMUNICATION RADIO(S) No 3: Positive and Negative polarity ten gauge wires shall be supplied and installed for subsequent installation of communications radio(s). The wires shall be barreled off and protected by a forty (40) ampere automatic reset circuit breaker.

POWER SOURCE: The power provision shall be fed off of the output of the conversion main power (Battery) switch. The aforementioned power source shall be located in the radio cabinet.

CONDUIT No 1: An empty one and one half inch diameter conduit expressly designed to add wires after vehicle delivery by the end user or his/her authorized agent shall be supplied and installed. The conduit shall have semi-rigid, non-conductive liner that is free of inside ridges that can bind on the wire harness being pulled through the conduit. The outer jacket shall be a nonconductive, spiraled rigid coil designed to maintain the original shape of the liner, throughout the length of the conduit run.

ORIGINATION POINT: The aforementioned conduit shall originate in the cab behind the driver's seat.

TERMINATION POINT: Termination point shall be within the Radio cabinet.

CONDUIT No 2: An empty 1.5 "diameter conduit expressly designed to add wires after vehicle delivery by the end user or his/her authorized agent shall be supplied and installed. The conduit shall be have semi-rigid, non-conductive liner that is free of inside ridges that can bind on the wire harness being pulled through the conduit. The outer jacket shall be a non-conductive, spiraled rigid coil designed to maintain the original shape of the liner, throughout the length of the conduit run. There shall be provided a pull wire through the conduit to aid the purchasing agency in future installation of equipment.

ORIGINATION POINT: The aforementioned conduit shall originate in the cab behind the driver's seat.

TERMINATION POINT: The termination point will be within the radio cabinet.

CONDUIT No 3: An empty 1.5 "diameter conduit expressly designed to add wires after vehicle delivery by the end user or his/her authorized agent shall be supplied and installed. The conduit shall be have semi-rigid, non-conductive liner that is free of inside ridges that can bind on the wire harness being pulled through the conduit. The outer jacket shall be a non-conductive, spiraled rigid coil designed to maintain the original shape of the liner, throughout the length of the conduit run. There shall be provided a pull wire through the conduit to aid the purchasing agency in future installation of equipment.

ORIGINATION POINT: The aforementioned conduit shall originate in the M2.5 compartment.

TERMINATION POINT: The aforementioned conduit shall terminate in the M2 compartment.

12V Prewire Installed in Cabinet A4

125V SHORE LINE AND OUTLETS

SHORE LINE INLET No 1: The primary 125 Volt shore line inlet, rated at 20 Amperes shall be supplied. The plug style shall be a straight blade (NEMA 5-20P) style with a U-shaped ground. The inlet shall automatically eject the shore line connector when the vehicle ignition switch is placed in the START position. The shore line inlet shall employ a novel internal switch that closes and opens the 125 Volt circuit after the mating connector is inserted and before the connector is removed to eliminate arcing at the connector contacts. This will prolong the life of the inlet and the shore line connector. The inlet shall be protected with a weather proof cover.

INLET LOCATION: Front of body on driver’s side.

SHORELINE INDICATOR LIGHT: There shall be a green indicator light to power to the shoreline system within the ambulance body. The light shall be an LED 130v light fixture that is shock and vibration proof. The light fixture shall have a 100,000 hour life for long lasting service in the field. Being LED technology, the fixture shall have a very low heat generation. The LED indicator light fixture shall be located above the shoreline inlet.

SHORE LINE COVER: The shoreline inlet shall be protected with a Yellow weather proof cover.

SHORELINE EJECT TIMER: The shoreline timer shall be an Inpower VCM-05-01SF to allow the auto eject to be wired to the ignition switch ILO splicing into the OEM starter circuit

SHORE LINE INLET NO.2 The primary 125 Volt shore line inlet, rated at 30 Amperes shall be supplied. The plug style shall be a twist-lock style (NEMA L5-30) with a ground. The inlet shall be protected with a weather proof, gray colored cover.

INLET LOCATION: Front of box on driver's side. This location should be below the 20 amp Shoreline Inlet location.

SHORELINE INDICATOR LIGHT: There shall be a green indicator light to power to the shoreline system within the ambulance body. The light shall be an LED 130v light fixture that is shock and vibration proof. The light fixture shall have a 100,000 hour life for long lasting service in the field. Being LED technology, the fixture shall have a very low heat generation. The LED indicator light fixture shall be located above the shoreline inlet.

125 VAC OUTLETS

125 VAC OUTLET No. 1: The following outlets shall be UL listed, 125 Volt, Hospital grade, Straight blade NEMA 5-15R outlets. Each outlet shall be installed in a UL listed, recessed, fiberglass back box with a minimum of one and three quarter inch of box depth. The outlet cover shall be stainless steel. The outlet must be grounded and protected by a GFI (Ground Fault Interrupted) Breaker. Each outlet body must illuminate when power is applied to the outlet. Each Outlet shall be clearly labeled with a permanent RED colored decal defining the outlet voltage.

OUTLET LOCATION: This 125 Volt outlet shall be located in the patient cabins, main "Action Area", with location as shown on the approval drawings.

125 VAC OUTLET No. 2:

OUTLET LOCATION: This 125 Volt outlet shall be located in the on the interior curb side, within the main wall panel and just above the top of the squad bench. The location of the outlet shall be defined on the proposal drawings.

125 VAC OUTLET No. 3:

OUTLET LOCATION: This 125 Volt outlet shall be located in the on the interior curb side, within the main wall panel and just above the top of the squad bench. The location of the outlet shall be defined on the proposal drawings.

125 VAC OUTLET No. 4:

OUTLET LOCATION: This 125 Volt outlet shall be located inside of the right front ALS Cabinet. The outlet shall be mounted on the back wall of the cabinet (related to inside access) in the upper right corner. The location of the outlet shall be defined on the proposal drawings.

125 VAC Outlet No 5: 15A, Hospital Grade, IVORY

OUTLET LOCATION: This 125 Volt outlet shall be located on the rear of the cab console. The location of the outlet shall be defined on the proposal drawings.

INTERIOR 12 Volt Direct Current (DC) OUTLETS:

12 VOLT OUTLET No 1: This outlet shall be a, 12 volt, direct current, 20 Ampere, automotive "cigar" lighter size commercial outlet. This outlet shall be located and wired as specified below. The outlet shall be separately protected and shall be electrically isolated from other electrical functions on the vehicle. This outlet shall be wired per current Federal specification KKK-A-1822.

OUTLET LOCATION: This 12 Volt outlet shall be located in the patient cabins, main "Action Area", on the back wall.

POWER SOURCE: The input for the outlet shall be wired to the output of the battery switch.

12 VOLT OUTLET: This outlet shall be a, 12 volt, direct current, 20 Ampere, automotive "cigar" lighter size commercial outlet. This outlet shall be located and wired as specified below. The outlet shall be separately protected and shall be electrically isolated from other electrical functions on the vehicle. This outlet shall be wired per federal specification KKK-A-1822D 3.7.7.3.

POWER SOURCE: The input for the outlet shall be wired to the output of the battery switch.

LOCATION: RF ALS, (See Pictures)

ELECTRONIC SIREN: There shall be installed a Star Warning Systems Model SS-741-MG or equivalent - in the chassis cab as appropriate for this siren and chassis. Features of the siren shall be current to the production date of the ambulance.

Whelen - Howler™ Low Frequency Tone Siren in addition to Electronic Siren above and wired to both speaker

SIREN SPEAKERS: Cast Products model No SAD4315 and SAP4315 siren speakers shall be supplied and installed in the front bumper. Each speaker shall have a 100 watt driver and shall emit through holes in the F550 front OEM bumper. The horn shall feature a bumper contour matched bezel that provides a mounting rim large enough for four counter sink fastener holes. The ambulance manufacture shall use four (4) stainless steel, #2 Phillips oval head 1/4-20 x 2" machine screws with stainless steel nylon type locking nuts, stainless steel split lock washer and flat washers to fasten each speaker to the bumper. The speaker manufacture shall provide exact placement and a cutout template. The rim of the speaker shall fit tightly around the entire perimeter of the speaker housing rim. The siren and speakers shall meet or exceed all performance criteria set forth in Federal specification KKK-A-1822D 3.14.6.

CUT-OUT TREATMENT: The cutout edges and bolt holes shall be treated with a corrosion inhibitor compound prior to final installation of the speakers.

SIREN OR HORN SELECTOR SWITCH: The O.E.M. horn ring shall control the O.E.M. electric horn and the siren's manual momentary input controls. A switch shall connect the horn ring to either the O.E.M. HORN or to the SIREN. The switch shall be located in the cab console's switch panel. The switch legend that clearly defines the switch function shall be engraved in the switch panel. The legend shall be illuminated when the head light switch is on.

AIR HORN SYSTEM: The apparatus shall be supplied with an authoritative sounding air horn system that is loud enough to overwhelm almost every usual audible distraction. The air horns shall, when enabled, emit a loud (138 decibel) signal with tremendous power for the duration of the users' depression of the Activation switch. The system shall contain two horns of UNEQUAL length to cover a wider frequency range.

AIR HORN ACTIVATION: The air horns shall be activated through a twelve volt solenoid valve. The solenoid valve shall feature an orifice size large enough to allow 20 CFM of air volume to pass through at fifty pounds per square inch of pressure. The solenoid valve shall be activated by a momentary foot switch. The solenoid valve shall automatically shut off when the foot switch is released. The foot switch shall be ENABLED as follows:

AIR HORN SUPPLY TANK: There shall be an air horn supply tank to store the air that is generated by the compressor to supply the specified horns. This tank that shall be determined by engineering and the air horn manufacturer shall be secured to the chassis frame rails.

AIR HORN ACTIVATION REQUIREMENTS: The foot switch shall be located on driver’s side and an additional switch on the right side of the cab console for passenger. Switch to be red.

AIR HORN ENABLE: The aforementioned air horn switch shall not activate the air horns, unless BOTH cab doors are closed. This is designed to prevent accidental discharge of the air horns by someone getting in and out of the passenger or driver's seat.

LEFT AIR HORN: The left air horn shall be a Buell-Strombos model No 1061. The horn shall feature all brass construction, hand spun brass bell, a stainless steel diaphragm and heavily chrome plated exterior finish. The horn shall emit 140 decibels at one meter with a frequency of four hundred ninety three (493) Hertz.

RIGHT AIR HORN: The left air horn shall be a Buell-Strombos model No 1062. The horn shall feature all brass construction, hand spun brass bell, a stainless steel diaphragm and heavily chrome plated exterior finish. The horn shall emit 140 decibels at one meter with a frequency of three hundred ninety six (396) Hertz.

COMPRESSOR FOR AIR HORNS: OEM Chassis compressor will be utilized for the air horns. The air horns shall be located under the chassis hood mounted to the frame rail on the right or left side as chassis space allows.

GENERAL CABINET CONSTRUCTION

SUBSTRATES; The interior cabinets and components shall be constructed of exterior water boil proof resin (WBP). The glue line between layers shall be of similar chemical makeup as the phenolic resin used in marine Grade plywood, as designated by the APA (American Plywood Association). Phenolic resins are designed to eliminate formaldehyde off gassing often associated with most hardwood plywood. The exposed layers of the substrate shall be hard wood on both sides of the sheet, these layers shall be 99% void free. Cabinet cases are to be made from at least 12mm thick, minimum 5 ply. Bench Lids and Doors shall be made from at least 18 mm thick, minimum 7 ply.
CABINET INTERIOR FINISH: Cabinet interior shall be laminated with white colored, high impact, abrasion resistant laminate. The contact adhesive shall be a high bond contact adhesive, specifically designed to bond plywood to laminate. The laminate shall be at least 28 mills thick.

LAMINATE: A high impact, phenolic backed, high impact, and abrasion resistant laminate shall be used. The laminate shall be at least 45 mills thick. This material as well as all interior components shall meet or exceed F.M.V.S.S. #302 (Burn rate of interior components). Color selection shall be specified at the pre-build conference.

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 through. 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 countersink type and driven flush. Reinforcement cleats shall be bonded to the inside corners where the backside of the face of the cabinet meets the case of the cabinet. The glue used shall be yellow colored water proof resin type.

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 padded or rounded corners. Rounded corners shall be at least .250 inch radius. Rounded corners shall not compromise maximum cabinet assembly strength. The trim shall be bonded with a high strength adhesive.

FIT AND FINISH: Mitered joints throughout the interior conversion shall have a gap-less, hairline fit. Sliding polycarbonate door assemblies shall be scratch free and all edges shall be smooth and free of saw marks and sharp edges. Cabinet to cabinet joints shall not require more than 7/32 diameter welting to create a finished/well-fit look. Cabinets shall fit tightly against the ceiling as well.

FUNCTION: Doors and drawers shall fit the opening. When specified, flush fitting doors shall have even door to opening gaps. All doors shall open and close bind free. Drawers shall slide in and out freely, without drag. All drawers shall be mounted on side mounted, full extension drawer slides, rated no less than 75 pounds per pair. All hinged wood core doors shall have positive latches. High traffic, high cycle doors shall have adjustable tension, brass bodied catches. All hinged polycarbonate doors shall have adjustable tension, brass bodied catches.

CABINET DOORS

SLIDING POLYCARBONATE DOORS: Polycarbonate shall hereinafter be identified as Lexan. Unless specified otherwise, all cabinets along the street and curb side of the vehicle shall have a mitered framed, sliding transparent Lexan door assembly. The polycarbonate shall be at least 3/16 inch thick. Each door shall be fitted with a full length, extruded aluminum door handle. The door pull extrusion shall also add bend resistance to the door. The door track/Frame extrusion shall incorporate a flocked natural rubber track insert to prevent the doors from sliding free during transit. The corners of the assembly shall have drive-in corner spline. Each spline shall be riveted into place. All extrusions shall be anodized.

HINGED POLYCARBONATE DOORS: Polycarbonate shall hereinafter be identified as Lexan. The polycarbonate shall be at least 3/16 inch thick. The desired thickness shall be noted within this specification at each door location. The door orientation, hinge style and latch shall also be noted at each door location as well. The door edges shall be rounded and smooth since it will be the finished edge that will be visible. All doors shall have a “locking-style” latch to prevent door from accidently opening. This Locking style latch shall be a positive style locking device to each cabinet door.

SOLID HINGED DOOR: When a solid door is specified, a 3/4" (19mm) thick door shall be supplied on the cabinet. The substrate shall be 7-ply, A-A (Cabinet grade), hardwood plywood. The door shall be flush fitted to the opening and have uniform gap spacing around the perimeter of the door. The door shall be hung on a continuous, stainless steel piano hinge with mounting screws, spaced every two inches along the full length of the pre-punched hinge. The door shall be finished on both sides with white cabinet liner laminate on the inside and the same colored mica as the cabinet fascia on the outside.

MICA COLORS: The mica color selection shall be two tone. The upper two thirds of the cabinetry shall be Gloss Gray with a Glossy finish. The lower third of the cabinetry shall be genuine stainless steel with a brushed finish. The parting line between colors shall be straight, tight and clean. Mica edge shall be router clean, back filed and dry fitted prior to final lamination to the cabinet face. Seam quality showing evidence of using the "Factory Edge" shall be rejected. A sample of the subject mica color and stainless steel finish shall be supplied at the post award conference.

STAINLESS STEEL APPLICATION: The lower section of the squad bench face under the lid shall be applied with the stainless steel laminate as well as the same height on the rear filler panel between the squad bench and the rear doors.

STAINLESS STEEL APPLICATION: The lower section of the wall cabinet face at approximately the same height as the attendant seat cushion.

POLYCARBONATE COLOR: The polycarbonate throughout the vehicle shall be transparent with a gray medium tint. All doors shall be at least three sixteenths of one inch thick (3/16"), shatter proof and scratch resistant. The edges of the door shall be worked and burned smooth. The material shall be flexible enough to be cold formed (Bent) at ninety degrees, without fracturing the material.

HANDLES, POLYCARBONATE DOORS: Full height, anodized aluminum, extruded drive on handles shall be supplied on each 3/16" door. The handle shall wrap around the leading edge of each door and mount with one way angular, blind mounting teeth designed to be driven on.

ATTENDANT SEAT: There shall be a high back captain's seat mounted in the patient area. The seat shall have an integrated child safety seat with a pull down backrest and concealed 4-point child restraint. The seat shall be mounted per the requirements in the latest revision of KKK-A-1822.

The seatbelt on the main part of the seat shall be an integrated, 5-point yellow Scroth-brand that is supplied and tested by the seat manufacturer as a complete package.

SEAT BASE: There shall be a powder coated metal seat that is tested to be utilized with the Emergency Vehicle Seating Child integrated Child Safety 4-point harness that is hidden behind the removable back pad. The metal base shall be mounted to the ambulance floor and secured to modular body sub-structure according to the manufacturer's guidelines.

AIR CONDITIONING EVAPORATOR CABINET: The patient cabin shall be equipped with a rear air conditioning and heat unit. AC Unit to be located on the floor behind the Attendant seat. The design shall provide adequate air return to meet or exceed the current revision of the Federal specification KKK-A-1822.

LEFT FRONT CABINET, CABINET"H": Cabinet "H" is the radio cabinet behind the attendant seat on top of the AC Unit. This cabinet will house radio equipment to include two air vents in the door.
PLASTIC VENT: A fifteen square inch free air flow ventilation hole he cut into the above door. The edges of the cut out shall be banded. The hole shall be covered with an aesthetically appealing, molded plastic louver cover. The louver cover shall be black in color and secured with at least one No 8 screw in each corner.

SOLID HINGED DOOR: A 3/4" (19mm) thick door shall be supplied on the aforementioned cabinet. The door shall be flush fitted to the opening and have uniform gap spacing around the perimeter of the door. The door shall be hung on a continuous, stainless steel piano hinge with mounting screws, spaced every two inches along the full length of the pre-punched hinge. The door shall be finished with white cabinet liner laminate on the inside and the same colored mica as the cabinet face on the outside.

DOOR EDGE FINISH: The edges of the aforementioned door(s) shall be covered with anodized aluminum, U-shaped trim. The trim shall be miter cut and wrapped around the perimeter of the door (On ALL four sides), including the hinged side. The trim shall be bonded to the door edge and clamped. No screws or other

mechanical fastener shall be used to fasten the trim work to the door(s). The corners of the doors shall be broken (rounded) after application. Vinyl "Iron on" or mica edge banding is not acceptable.

HINGE ORIENTATION: The aforementioned door shall be hinged along the right edge of the door.

LOCKING LATCH: A black positive latch shall be supplied and installed on the cabinet door. A small "preload" on the latch shall be imposed to prevent the door from rattling. This lock shall be “keyed” differently than other locks on the module.

RIGHT FRONT CABINET: The right-front cabinet is hereinafter known as ALS cabinet. All fixed and adjustable shelf surfaces shall be covered in Easy Grip material. All fixed and adjustable shelf lips shall be covered with anodized aluminum trim. All shelves shall have a ¾ lip.

CABINET I-1: This cabinet is located on the top section of the right front patient area. The cabinet will be for the Secondary Danhard AC system.

CABINET I-2: The middle section of the ALS (cabinet I) shall be nearly 40" or greater in height dependent upon 72" of headroom and I-3 and M-7 remaining standard height. Final height of I-2 shall be reflected on the sales approval drawings.

ROLL UP DOOR: There shall be a Robinson Shutter Style roll up door installed on the inside of the patient cabin to cover the Right Front ALS cabinet. It shall be the counterbalance style door with side tracks. The door shall form a coil at the top of the door opening which shall be hidden by the extended door header. This counterbalance style door is the only type of door that shall be acceptable so it leaves the back wall of the compartment unobstructed when the door is opened.

PLASTIC VENT: A fifteen square inch free air flow ventilation hole shall be installed on the side of the ALS to help in closing the M7 compartment door. The edges of the cut out shall be banded. The hole shall be covered with an aesthetically appealing, molded plastic louver cover. The louver cover shall be black in color and secured with at least one No 8 screw in each corner.

RIGHT FRONT CABINET OUTSIDE ACCESS: The right front cabinet of the module shall have outside access through the right front (M-7) compartment door.

SHELF STANDARDS: The aforementioned cabinet shall be equipped with non-incremental, aluminum, C-shaped shelf standards.

ADJUSTABLE SHELVES: Two shelves shall be installed. The shelves shall be made of 1/2" thick substrate and finished in white colored laminate. Both sides of the shelves shall be laminated. The shelves shall be secured to four shelf clips with Phillips head wood screws, from the bottom of the shelf. An anodized aluminum angle shall be securely fastened to the front edge of the shelf. The vertical leg of the angle shall provide a lip along the front edge.

RIGHT REAR COMPARTMENT COVER: All exposed surfaces of this patient area side of the M5 compartment shall be fully laminated with color keyed laminate. The vertical outer corner shall feature a radius anodized aluminum trim. The trim shall originate from the top of the mated squad bench and terminate into the ceiling.

UPHOLSTERY PAD: An upholstered pad covering the entire forward facing wall, over the squad bench shall be provided to protect occupants sitting on the squad bench. The pad shall include at least 1/2" thick foam padding covered in the same heavy duty vinyl covering specified for the squad bench cushions and the remaining upholstery package.

SQUAD BENCH: A one seat squad bench shall be installed. One set of six point seat belts shall be supplied. The belts shall restrain one seated occupant or one secondary patient, on a back board. All seat belts and anchorage shall comply with F.M.V.S.S. 209 and 210. The squad Bench shall comply with current KKK-A-1822. A back and head rest shall be supplied for all seated personnel along the squad bench.

RETAINER STRAP: One two inch wide webbed restraint strap shall be supplied at the rear of the bench facing the front of the truck to secure a life pack holder. The strap shall employ a metal buckle system with a push button release. The strap is to be fastened to the compartment walls with a two inch footman's loop. The fastener is not to be fastened through the webbing material. The strap shall be located 23 ½” from top of bench and 14” from curbside wall.

BIO-WASTE RECEPTACLE: A biological waste receptacle shall be supplied and installed at the head of the bench on the wall. The sharps container shall be enclosed and free of crevices. A white colored "Bio-waste" symbol and legend shall be applied.

CURB SIDE SEATING OPTIONS

SQUAD BENCH SEATING: The seating on the squad bench surface shall consist of an EVS approved seat with a 36” side to side sliding track system. The slide track mechanism shall be attached to the ambulance body structure and therefore shall not allow for storage space under the seating area due to required support structure.

SEATING: The seating on the squad bench surface shall consist of a 5-point yellow belt as part of a 1790 Safe Line. The seat shall be vacuum formed for anti-bacterial safety.

SQUAD BENCH LID: A one piece lid shall be supplied over the squad bench storage area.

HINGE, SQUAD BENCH LID(S): All squad bench lids shall be installed with butt style, hinges. The hinges shall be through bolted for longevity of the vehicle. There shall be a minimum of two hinges per lid.

LID LATCH: One latch to hold each lid down shall be supplied. The lid latch shall be stamped stainless steel construction and latches automatically by simply closing the bench lid.

LID CHECKS: Each squad bench lid shall have a bi-directional gas spring lid check (Hold open). The force value selected and ball stud locations shall provide lift assistance after twenty degrees of bench lid lift angle. The ball stud mounts shall be at least 10 millimeter.

EDGE TRIM: The edge of the squad bench lid shall be finished with aluminum anodized "J" trim. The trim is to be supplied with countersunk holes to allow for screws to be installed flush so the screw head does not catch anything.

RESTRAINT NET: A detachable net shall be installed at the head of the squad bench. In the event of sudden stop or frontal accident, the design intent of the net is to minimize injuries to unbelted personnel seated on the squad bench. The net is a safety barrier between the occupant/personnel and the bulkhead cabinetry. The net shall be a grid of 2 wide safety web, spaced on maximum centers of 8 inches.

The net shall be secured at five points. All points must be secured to 0.250 inch thick Aluminum tapping plates; or body structure with wall thickness of 0.250 inch; or through bolted to cabinet interface reinforcement brackets that are bolted to 0.250 thick welded body structure. The net shall be tightly stretched and attached to the following surfaces:

One point on the ambulance floor on the aisle side of the squad bench.
One point at the top of the squad bench near the curb side wall.
Two points at the curb side wall, near the side entry door.
Three points in the ceiling.

All Restraint Net attachment devices shall be aviation quality and pull strength tested. Tested to 2,000 pound force applied in shear (Horizontally). Detachment of the net shall be done without the need for a removal or installation tool(s). Each device shall feature a cadmium plated steel attachment ring that is forged in one continuous ring, without a split or seam. Each device shall be sewn onto the net webbing with a 1 3/4 inch square shaped thread path and diagonal X-shaped thread path to assure web to ring security.

TOP CABINETS:

CABINET "A1-A2-A3": An upper, interior cabinet shall be provided directly over the rearward section of the Base wall cabinet. These cabinets shall accommodate a power air exhaust blower with a removable service panel. This multipurpose cabinet interior shall be finished in high impact, white colored laminate. These cabinets must meet current Federal specification KKK-A-1822.

SHELF STANDARDS: The aforementioned cabinet shall be equipped with non-incremental, aluminum, C-shaped shelf standards.

ADJUSTABLE SHELVES: A shelf shall be supplied in each cabinet. The shelf shall be finished in white colored laminate. Both sides of the shelf shall be laminated. The shelf shall be secured to four shelf clips with Phillips head wood screws, from the bottom of the shelf. An anodized aluminum angle shall be securely fastened to the front edge of the shelf. The vertical leg of the angle shall provide a lip along the front edge.

RESTOCKING FEATURE: The uppermost cabinets shall have sliding polycarbonate doors. Additionally the entire framed assembly shall hinge upward 90 degrees to provide 100% access for the purpose of restocking the cabinet. The assembly shall be supported by a gas piston spring on each side and latched with two positive, slam action latches that are blind mounted behind each end of the window frame. The use of plywood in this assembly is not acceptable, due to lost access area.

CABINET "A4": An upper, interior cabinet shall be provided directly over the "Action Area". This multipurpose cabinet interior shall be finished in high impact, white colored laminate. This cabinet needs to be big enough to house a customer installed Model 5500 Med Vault. Allow enough depth for Med Vault with dogleg in the M1 compartment. The cabinet must meet current Federal specification KKK-A-1822.

SOLID HINGED DOOR: A 3/4" (19mm) thick door shall be supplied on the aforementioned cabinet. The door shall be flush fitted to the opening and have uniform gap spacing around the perimeter of the door. The door shall be hung on a continuous, stainless steel piano hinge with mounting screws, spaced every two inches along the full length of the pre-punched hinge. The door shall be finished with white cabinet liner laminate on the inside and the same colored mica as the cabinet face on the outside.

DOOR EDGE FINISH: The edges of the aforementioned door(s) shall be covered with anodized aluminum, U-shaped trim. The trim shall be miter cut and wrapped around the perimeter of the door (On ALL four sides), including the hinged side. The trim shall be bonded to the door edge and clamped. No screws or other mechanical fastener shall be used to fasten the trim work to the door(s). The corners of the doors shall be broken (rounded) after application. Vinyl "Iron on" or mica edge banding is not acceptable.
HINGE ORIENTATION: The aforementioned door shall be hinged along the right edge of the door.

LOCKING LATCH: A positive latch shall be supplied and installed on the aforementioned cabinet door. The latch shall be powder coated Black and be near flush when in the "Closed" position. The latch shall be fitted with a cylinder type lock that prevents door latch activation, when locked. Door latch activation shall be triggered by depressing a flush fitted release button that unlatches a lever. The spring loaded lever shall rotate about an axis near the surface of the door panel and extended a rotating pawl behind the latch side door frame. The depth of the pawl shall be adjustable to the latch side door frame. A small "preload" on the latch shall be imposed to prevent the door from rattling.

BASE WALL CABINET: The base wall cabinet is located on the Street side (Left side) of the patient cabin. The overall height of the Base Wall Cabinet shall be approximately 75% of the overall head room. This cabinet shall be built in ONE piece. The laminate along the face shall be ONE piece on single color laminate selections.

ACTION AREA: The action area is a work surface located on the forward end of the Base Wall Cabinet and adjacent to the attendant seat. The work surface shall be at least 5.5 square feet. The work area height shall be 24 inches to 29 inches. The work surface shall have a three quarter inch (3/4") high lip.

ACTION AREA TRAY: The entire action area work surface shall be covered with a 16 gauge, polished, 304 stainless steel tray. All four edges of the tray shall feature up turned lips measuring 3/4 inch high. The tray

shall be applied to the action area substrate with adhesive. The edges of the stainless steel shall be protected with automotive edge trim.

TRASH RECEPTACLE: A waste receptacle shall be supplied and installed below the action area. Both the sharps and the solid waste free of crevices. There shall be a trash door that that will flip in and self-close below the action area. The trash will be removable from the M2 compartment.

WASTE CONTAINER: One eight 1/8 quart (462 cubic inch), rimmed plastic waste container shall be supplied and fitted to the aforementioned "Bio-waste" enclosure. The waste container shall accommodate solid waste into disposable, red colored "Biological waste" liners. The "waste" and the "Sharp object disposal (Sharps)" containers shall be two separate receptacles, located adjacent to the other. The waste containers' material shall withstand strong disinfectant cleaners.

CABINET "C1, C2, C3: Three interior cabinets shall be provided on the street side wall cabinet. This cabinet interior shall be finished in high impact, white colored laminate. The cabinets must meet current Federal specification KKK-A-1822.

SHELF STANDARDS: The aforementioned cabinet shall be equipped with non-incremental, aluminum, C-shaped shelf standards.

ADJUSTABLE SHELVES: A shelf shall be supplied in each cabinet. The shelves shall be made of 1/2" thick substrate and finished in white colored laminate. Both sides of the shelves shall be laminated. The shelves shall be secured to four shelf clips with Phillips head wood screws, from the bottom of the shelf. An anodized aluminum angle shall be securely fastened to the front edge of the shelf. The vertical leg of the angle shall provide a lip along the front edge.

RESTOCKING FEATURE: The uppermost cabinets shall have sliding polycarbonate doors. Additionally the entire framed assembly shall hinge upward 90 degrees to provide 100% access for the purpose of restocking the cabinet. The assembly shall be supported by a gas piston spring on each side and latched with two positive, slam action latches that are blind mounted behind each end of the window frame. The use of plywood in this assembly is not acceptable, due to lost access area.

CABINET "D1, D2, D3": Three interior cabinets shall be provided on the street side wall cabinet. This multipurpose cabinet interior shall be finished in high impact, white colored laminate. The cabinet shall be ergonomically angled toward the CPR seat. These cabinets must meet current Federal specification KKK-A-1822.

SHELF STANDARDS: The aforementioned cabinet shall be equipped with non-incremental, aluminum, C-shaped shelf standards.

ADJUSTABLE SHELVES: A shelf shall be supplied in each cabinet. The shelf shall be made of 1/2" thick substrate and finished in white colored laminate. Both sides of the shelves shall be laminated. The shelves shall be secured to four shelf clips with Phillips head wood screws, from the bottom of the shelf. An anodized

aluminum angle shall be securely fastened to the front edge of the shelf. The vertical leg of the angle shall provide a lip along the front edge.

RESTOCKING FEATURE: The uppermost cabinets shall have sliding polycarbonate doors. Additionally the entire framed assembly shall hinge upward 90 degrees to provide 100% access for the purpose of restocking the cabinet. The assembly shall be supported by a gas piston spring on each side and latched with two positive, slam action latches that are blind mounted behind each end of the window frame. The use of plywood in this assembly is not acceptable, due to lost access area.

RESTRAINT SYSTEM(S): The Seat Belt System(s) shall be in the following locations:

There are to be one 6-point restraint on the Squad Bench.

SECONDARY PATIENT RESTRAINT SYSTEM: There shall be a location for a secondary patient on top of the squad bench located on the curbside interior of the patient area of the ambulance. To secure the patient there shall be three inertia style retractable straps that match up to three 9" sleeved buckles on the face of the squad bench and sleeved retractors by the squad bench lid hinge. The straps and buckles shall be mounted to comply with the pull test requirements in the present revision of KKK-A-1822.

FLOOR AND SUBSTRATE: The floor of the module shall be (3/4) thick 7-Ply, Formaldehyde free, exterior grade, A-C plywood. The glue line between the layers shall be phenolic based. The glue shall be of similar chemical make up to the phenolic glue used in Marine grade plywood, as designated by the A.P.A. (American Plywood Association).

FLOOR COVERING: The floor substrate shall be free of dents, voids and moisture prior to application of the floor covering. The plywood substrate shall be 3/4" (19mm) 7-ply exterior grade plywood. The substrate sheet shall be cut from a 60 inch wide by 144 inch long oversized sheet. No substrate seams are allowed in high foot traffic areas. This means NO SEAMS are permitted within 132" of the rear access doors or near the side access door.

On longer bodies, the only ONE seam is permitted as long as the full length of the seam is located directly over the center of a 0.250 x 2 x 3 box tube floor member AND the seam does not fall in the aforementioned "High Traffic" areas.

The floor covering shall be one piece throughout the patient cabin regardless of the body length. The flooring material shall be commercial grade sheet vinyl floor with diamond plate like impression on the surface. The floor covering shall be Lonseal Lonplate II No 421 "Mica" (Light Gray).

FLOORING MAIN EDGE: The one-piece patient cabin floor covering material shall run the full with of the aisle space plus roll up (3") three inches along the Base wall cabinet, squad bench and the right rear cabinet (when applicable). Both roll-up areas shall be recessed approximately 1/2" into the face of the cabinets.

REAR THRESHOLD: The rear threshold shall be made of 16 gauge brushed stainless steel sheet. The threshold shall conceal the end of the vapor sheet, sub floor, and flooring. The threshold shall mate to the top of

the rear access door jamb and cover at least six inches of flooring. Installed over the stainless steel threshold shall be two 2.5" wide "nonskid" tape, strips applied. The color of the tape shall be safety yellow with black diagonal stripes.

C/S THRESHOLD: The C/S threshold shall be made of .100 polished aluminum diamond plate.

COT MOUNT HARDWARE

PRIMARY COT MOUNT: The main cot mount shall be a single position, Stryker model No 6392 Performance – Load Cot Fastener System with battery charging system incorporated within the fastener system. This mounting system must be mounted in compliance with the SAE J3027 – AMBULANCE LITTER INTEGRITY, RETENTION, AND PATIENT RESTRAINT standard – NO EXCEPTIONS

COT FASTENER MOUNTING METHOD: All mounting bolts shall be 3/8" diameter, socket head cap screws with at least 16 threads per inch. All mounting blocks shall be supplied and manufactured by the cot mount manufacturer. The mounting blocks may protrude above the flooring surface by up to 3/16", as long as all of the edges are chamfered. The aforementioned cap screws shall not protrude above the upper surface of the mounting block and be in compliance with the SAE – J3027 - AMBULANCE LITTER INTEGRITY, RETENTION, AND PATIENT RESTRAINT standard.

All cap screws shall be through bolted through 1/2 (.500) inch thick, 6061-T-6 Aluminum plate structure. One and one half (1-1/2) inch x six (6) inch thick plates shall either be MIG welded or Chuck structurally fastened to the floor grid for both cot mount and attendant seat fastening locations. All fastening hardware shall be either through bolted or tapped depending on under floor clearances due to chassis installed components. Mounting bolts shall not point toward fuel filler or fuel vent hoses, in accordance with good engineering practices set forth by the Society of Automotive Engineers and Ford's Qualified Vehicle Modifiers' program.

Bidders shall meet or exceed mechanical strength described in the aforementioned minimum fastening method. Material thickness and/or through bolt criteria is mandatory even if the vendor has current certification to A.M.D. Standard 004 utilizing lesser materials.

PRIMARY COT POSITION REINFORCEMENT; There shall be a singular piece of aluminum reinforcement installed running the length of the primary cot position in the modular ambulance. It shall be secured to the modular tubes by welding or houck fasteners.

COT LOCATION No 1: This cot position shall be set up for a primary wheeled cot set approximately eight inches left of center laterally (side to side) in the aisle or as close to the left side wall cabinet as practical. The longitudinal location shall be set 30 inches measured from the backrest of the attendant's seat (set all the way toward the front of the patient cabin) to the head of the primary cot frame, per current Federal KKK-A-1822.

COT HOOK: A Stryker manufactured ramped hook derived of solid aluminum shall be through bolted to the threshold at the rear access doors. The design intent is to prevent accidental cot roll off during loading and unloading a one man cot. The hook shall snag a tubular drag bar that is built in to the cot frame. The cot hook shall be placed in a position where the under carriage of the cot can be erected and locked into place before

release of the drag bar (or where recommended with the Stryker model No 6392 Performance – Load Cot Fastener System).

OXYGEN, AIR and VACUUM SYSTEMS

OXYGEN HOSES: All oxygen system service hoses, fittings and devices shall be made of nonferrous materials. Hoses used to pipe Medical Oxygen shall be electrically non-conductive, ¼ inside diameter with an abrasion resistant, green colored outer jacket. The hose manufacturer's name, part number, inside dimension and working pressure rating shall be permanently marked along the entire length of the hose. All hoses shall have a working pressure rating of at least 250 pounds per square inch, withstand a system test pressure of 150 PSI / 1033 kappa test prescribed in current Federal specification KKK-A-1822. Each ambulance shall be tested.

OXYGEN OUTLETS - GENERAL: Each outlet shall be comprised of an "Inlet Box" and a "Latch Plate" as defined herein. The "inlet box" shall be a universal inlet service box with a 165 mm type "K" (3/8") OD Copper inlet pipe stub which is silver brazed to a brass, one piece, and (1 5/16") inlet body. The "inlet box" shall be designed specifically for positive pressure gas service and feature a primary and secondary check valve. Each check valve shall be rated at 1,379 kPa (200psi).

The "Latch Plate" shall insert into the universal "Inlet Box". The "Latch Plate" is comprised of the outer cover plate and latching mechanism that will define the adapter type/Brand that will ultimately connect the patient to the oxygen system. The outlet cover shall be color coded GREEN in addition to having a clear permanent legend that identifies the gas type. Dual gas specific safety pins shall be integrated in the face of the outlet "Latch Plate" for safety.

Outlet adapter types shall be easily changed by simply removing the "Latch plate" specifically designed for brand "A" to brand "B" without any further plumbing changes.

As with all medical gas outlets specified herein, all outlets shall be hydrostatically tested and cleaned for oxygen service. All medical gas outlets specified herein shall be UL (Underwriters Laboratory) listed and CSA approved. All outlets will be subject to a line pressure of 50 PSI and shall be leak tested at 150 PSI Per Federal specification KKK-A-1822. Pressure drop across the outlet shall be less than 2.0 PSI At normal working pressure.

OXYGEN OUTLET No 1: This outlet latch shall be designed to accept (Ohio) style, quarter turn / quick release adapters. This Oxygen outlet shall be provided where specified below. The Oxygen outlet shall be located in the primary action area switch and outlet console.

OXYGEN OUTLET No 2: This outlet latch shall be designed to accept (Ohio) style, quarter turn / quick release adapters. This Oxygen outlet shall be provided where specified below. The Oxygen outlet shall be located in the primary action area switch and outlet console.

OXYGEN OUTLET No 3: This outlet latch shall be designed to accept (Ohio) style, quarter turn / quick release adapters. This Oxygen outlet shall be provided where specified below. The Oxygen outlet shall be located in curb side wall, over the squad bench and near the curbside entry door.

PORTABLE CYLINDER BRACKETS: (3) Zico QR-D-2 or an approved, certified equal with the following minimum features and quality level shall be installed in the location specified below. This universal, adjustable portable cylinder rack shall be supplied and installed to accommodate one cylinder. The bottle rack shall accommodate either D-size or Jumbo D-size cylinders made of steel OR aluminum. The entire rack shall be constructed of heavy gauge stainless steel and aluminum alloy. The rack design shall include a stainless steel cylinder neck restraint that does not interfere with oxygen regulator controls. A quick release at the top alleviates the need for a strap to secure the bottle in place. The rack shall be through bolted to reinforced, structural members or brackets that tie in directly to the body of the ambulance. All devices MUST meet the SAE – J3043 - Ambulance Equipment Mount Device or Systems Standard.

LOCATION (1): One bracket shall be located in the elongated step well and the other two in the M1 compartment on wall #1.
LOCATION (2 and 3): Second and Third Zico QR-D-2 shall be mounted inside the street side exterior compartment on the driver's side of the vehicle. They shall be mounted on the front wall of the module beside each other.

MAIN CYLINDER RESTRAINT No 1: One manufacturer supplied M-size compressed, medical gas cylinder shall be carried and secured, vertically inside the left front exterior compartment. Cylinder rack shall be through bolted to the back wall. A rust free cylinder rack with (2) heavy duty pull style, web straps with quick spring loaded release shall be type tested to AMD Test 003 Oxygen Tank Retention system Test. The cylinder valve shall also be visible and accessible from the inside through a clear polycarbonate door.

NECK STRAP: There shall be an additional webbed strap looped onto the racks upper most securing strap. The strap is to have two loops. The bottom loop will be the section secured to the upper most strap and the upper loop shall be secured onto the neck of the oxygen or medical air bottle to help secure it in place in the case of an upward exertion.

CYLINDER TYPE: This rack shall be for a MEDICAL OXYGEN cylinder. The oxygen system input hose shall be suspended over this rack. This input hose shall feature a nonferrous 9/16-18 RH bottle nut and regulator barb. This connection shall comply with the diameter index safety system (DISS) set forth by the Compressed Gas Association (CGA) for safety.

CYLINDER RACK LOCATION: The main oxygen cylinder shall be stored in the left front compartment. The cylinder rack shall be through bolted on the back wall, near the right hand wall of the compartment. The cylinder neck shall be visible and accessible through the viewing window.

Cylinder Wrench: There shall be a cast aluminum main oxygen cylinder wrench installed in the compartment with the main oxygen cylinder rack. The wrench shall include a cable lanyard that secures the wrench to the compartment wall allowing enough length of cable to loosen and tighten the regulator fitting on the customer installed main oxygen cylinder. The wrench shall be stored in place with either a hat channel bracket or Velcro to keep it secured while the vehicle is in motion.

Vacuum (Suction) System, Rico RS-4X, ILOS (Includes Outlet)

Vacuum (Suction) Outlet, Amico Ohio Style, Included w/Rico

VACUUM OUTLET ADAPTER: An adapter shall be used to connect the vacuum line from the SSCOR 22000 system, when the container is plumbed through a Vacuum outlet. This vacuum outlet shall be designed to accept the Ohio Diamond Vacuum quick disconnect adapter.

SUCTION PUMP: The suction pump shall be installed in the left middle compartment, adjacent to the action area panel. The exhaust tube shall be routed to the outside of the vehicle. The pump shall be mounted on rubber vibration isolators to minimize any vibration noise emitted into the patient cabin. The pump shall provide a free air flow of at least 20 liters per minute and achieve a minimum of (11.81 in) Hg vacuum within four seconds after the suction tube is closed. This 49-state pump shall meet or exceed current Federal specification KKK-A-1822.
SUCTION PUMP LOCATION: The suction pump shall be installed in the left front middle compartment. The pump shall be mounted to the ceiling of this compartment on rubber vibration isolators.

EXTERIOR ENTRY AND COMPARTMENT DOOR HANDLES: Large chrome plated, die cast paddle handles shall be provided to open all module doors. Blind fasteners shall be used to fasten the handles to the door from the backside. Blind Stabilizer pins shall be incorporated on the backside of the handle for alignment purposes. Every paddle handle shall have an isolation gasket between the paddle body and the door skin. All door skin surfaces shall be painted prior to installation of the handle hardware. All paddles, on single hung and leading double doors shall be locking type and keyed the same (unless specified otherwise). Trailing doors shall; have non-locking paddle handles, mounted on the outside of the door. The Handle shall have a bright chrome like finish mounted into the bright chrome dish. When the door is in the locked position, the handle shall extend when pulled like an automotive handle (free floating) to show the operator that the door is locked and needs to be unlocked to be opened. Systems that utilize a handle that does not free float shall not be accepted as it could bind up the inner hardware and shorten the life of the door operation and timing.

INTERIOR ENTRY AND COMPARTMENT DOOR HANDLES: The interior handle shall be lever type. A Lock/Unlock lever shall be installed below the inside lever handle and be clearly marked Lock/Unlock. The inner chrome plated handle shall have a black powder coated cast aluminum bezel for strength.

ENTRY DOOR PANELS / WINDOWS / HARDWARE

INTERIOR GRAB HANDLE COLOR: The interior grab handles listed below will be powder coated with anti-microbial, gray in color.

CURB SIDE ENTRY DOOR GRAB HANDLE: The curbside entry door shall be equipped with a two point, 1 ¼ diameter, stainless steel with gray anti-microbial coating, handicap style grab handle to aid in door closure and entry assistance. The handle shall measure at least eighteen inches long. The handle shall run horizontally, directly above the inside door latch. The door handles shall be fastened directly to the horizontal door structure that is welded to the door assembly.

REAR ACCESS DOOR GRAB HANDLES: Each rear access door shall be equipped with a two point, 1 ¼ diameter, stainless steel with gray anti-microbial coating, handicap style grab handle to aid in door closure and entry assistance. The handle shall measure at least twelve inches long.

The handle shall run horizontally, directly above the inside door latch. The door handles shall be fastened directly to the horizontal door structure that is welded to the door assembly.

ADDITIONAL ASSIST RAIL: This rail shall be naturally accessible to assist working attendants in maintaining their balance. The rail shall be 1 ¼ diameter, 100% stainless steel with gray anti-microbial coating and 18" long. All rail fittings shall be TIG welded to the main rail. The rail shall be located prior to order confirmation. Grab rails that utilize separate, setscrew rail fittings are not reliable and not acceptable.

C/S ENTRY HANDLE: There is to be a curved stainless steel Grab rail located at the head end of the squad bench wall. It shall be mounted to a tapping plate in the modular body to give it the required strength. The grab handle shall have a curve to allow the grab part to impede in to the curbside door opening to allow easy access. The grab rail shall be at least 15 inches in length. The handle shall have antimicrobial coating and be silver in color.

ENTRY DOOR PANELS: All UPPER entry door panels shall be color matches Mica over a smooth aluminum substrate. The center panel shall be upholstery over a smooth aluminum substrate.

CURBSIDE LOWER DOOR PANEL: The inside door panels shall be made of 16 gauge brushed stainless steel. The edges of the stainless plate shall be recessed into the door frame extrusion. The panels shall be fastened to the door frame with stainless steel, #10-32 UNF machine screws threaded into aircraft quality blind fasteners. Each machine screw shall have a neoprene lock washer.

REAR ENTRY DOOR WINDOWS: Will have an automotive style window. The window will be recessed in a factory stamped opening. The windows will be near flush. They will be in a fixed position. Each window will have a nominal area of 320 square inches.

SIDE ENTRY DOOR WINDOW: The curb side (Right) entry door shall be equipped with an automotive style window. The window will be recessed in a factory stamped opening. The window will be near flush. Window will be fixed position. All glass shall be tinted safety glass.

WALK THROUGH DOOR: The walk through door specified herein shall comply with federal specification KKK-A-1822D 3.10.15.1. The door shall be hinged on the passenger side of the vehicle and shall swing into the patient's cabin. The door shall fit into a recessed area on the side of the right front ALS cabinet. A barrel type bolt shall hold the door in the OPEN position (recessed into the side of the ALS cabinet). The same barrel bolt shall hold the door closed and shall be accessible ONLY from the CAB side. The door substrate shall be 19mm (3/4") Formaldehyde free, exterior grade, A-A plywood and laminated with color matching mica at least 28 mils thick. All door edges shall be banded with the same mica color and thickness as the door face surfaces. Iron on vinyl or PVC edge banding is not durable and therefore not acceptable. The aforementioned door shall be fitted with a sliding polycarbonate window assembly with a minimum see through area of 150 square inches.

PLASTIC VENTILATED COMPARTMENT TILE: A plastic black color ventilated tile shall be installed on all compartment floors and shelves. The tile is to be designed to keep equipment off the floor or shelf to promote drying of wet equipment.

CARBON MONOXIDE DETECTOR: While a carbon monoxide detector will detect incomplete oxidation during combustion in gas ranges and unvented gas or kerosene heaters that may cause high concentrations of Carbon monoxide in indoor air. Worn or poorly adjusted and maintained combustion devices (e.g., boilers, furnaces) can be significant sources, or if the flue is improperly sized, blocked, disconnected, or is leaking. The main cause for concern in the ambulance is due to auto, truck, or bus exhaust from attached garages, nearby roads, or parking areas can also be a source. The unit shall be installed in the patient area and wired 12v into the ambulance conversion system.

ACTION AREA LIGHTING: The light shall have an on/off rocker switch on the body of the light housing. The light shall be mounted to the action area. A Fluorent Plus™ Series Super-LED™ Compartment Tube Lighting lights shall be mounted along the bottom of the compartment that is positioned directly above this area.

UPHOLSTERY MATERIALS: All padding and upholstered seating shall be covered in 36 ounce vacuum form ready vinyl. Sewn seams in the seat covers and cushions shall be minimized. Upon request, the manufacturer shall be capable of supplying vacuum formed, seamless vinyl covered upholstery. The color shall be color keyed to the laminate color selections made.

SEAT / BACKREST CORE MATERIAL: The vinyl covered foam shall meet current Federal Specification KKK-A-1822. Seat cushions shall be ergonomically contoured. All core material shall be open cell, high resilience foam.

UPHOLSTERY COLOR: All padding and upholstered seating shall be covered in 36 ounce vacuum form ready vinyl per the aforementioned specification. The color of the vinyl shall be Blue. A sample of the actual color shall be submitted with the bid for approval.

TROUGH COVER: All upholstered pad that is built to cover the trough running down the center line of the vehicle separating the curbside and street side of the patient compartment shall be manufactured of 1/4" luan non-voided plywood with padding and covered with 36 ounce vinyl. The color of the vinyl shall be white. The cover shall be fastened to the headliner using stainless steel screws with washers that will accept button covers that are color matched to the trough cover.

UPHOLSTERY JOINERY TYPE: All padding and upholstered seating shall feature upholstery covered foam that eliminates sewn, visible seams. All cushion corners shall be vinyl wrapped. NO sewn seams are permitted, even at the corners. Seat cushion vinyl shall be pre-formed to the cushion shape to eliminate ALL visible seams. Seat cushions with welting/piping and sewn corner seams are not acceptable since blood and other liquid form biological discharge can penetrate the seam holes and reside in the foam. All vinyl surfaces shall be pulled tight against the foam, utilizing a hardwood plywood backing board. Loose fitting vinyl coverings are not acceptable.

FULL CUSHIONS: The post and wheel cups normally placed on the squad bench for secondary stretchers shall be DELETED in favor of full seat cushions without cutouts. The seat cushions shall be the same size as the squad bench lid and WITHOUT cutouts. The user chooses to use a backboard in lieu of a stretcher for a secondary patient.

HEAD PROTECTION - CURB SIDE ACCESS DOOR: A seamless pad specifically designed to protect the head during egress is required. The pad shall consist of a two inch thick foam sheet over a hardwood plywood backing board and covered in seamless vinyl upholstery.

HEAD PROTECTION - REAR ACCESS DOORS: A seamless pad specifically designed to protect the head during egress is required and shall comply with current Federal Specification KKK-A-1822. The pad shall consist of a two inch thick foam sheet over a hardwood plywood backing board and covered in seamless vinyl upholstery.

CLOCK: An Emergency Time manager is defined as a 24-hour clock and timer designed to assist Emergency medical personnel with time management. The time Manager shall provide four functions:

Time of day in hours and minutes
LED sweep second hand shall sweep around the hour and minute display
Elapsed time in hours and minutes
4-alarm timers in 1, 2, 5, and 10 minute increments

The clock size shall be approximately 4 3/4" high by 6 3/4" long with a second hand sweep of 3 1/2" diameter. The main digital display shall have 1/2" high characters. The four digit display shall operate in three modes; "time of day", "Elapsed time" and "timer" mode. In "time of day" and Elapsed time" mode, the display will show hour and minutes. In "Timer" mode, an audible alarm shall sound when timer reaches zero.

The clock shall feature power consumption protection, whereas, the clock display shuts down, 20 minutes after the vehicle's engine is shut down and charging voltages are not present. The display shall come back on when the engine is restarted.

PAINT

100% PAINT FILM COVERAGE: All stages of primer and paint shall cover all surfaces. Hinge mating surfaces on the doors and jambs shall be painted. Bare aluminum and primer only preparation is not acceptable under door hinges. Doors shall be painted without actuation handles installed and doors removed from body. Paint film thickness to be no less than 4.1 mil thickness.

PAINT SYSTEM TYPE: The paint shall be Poly-Urethane type electrostatic application process without exception.

An electrostatic paint spray system is a highly efficient technology for the application of paint to specific work pieces. Negatively charged atomized paint particles and a grounded work piece create an electrostatic field that draws the paint particle to the work piece, minimizing over spray.

For this technology, an ionizing electrode, typically located at the paint gun atomizer tip, causes paint particles to pick up additional electrons and become negatively charged. As the coating is deposited on the work piece, the charge dissipates through the ground and returns to the power supply, completing the circuit. The electrostatic field influences the path of the paint particles. Because the charged particles are attracted to the grounded work piece, over spray is significantly reduced. Paint particles that pass a work piece can be attracted to and deposited on the back of the piece. This phenomenon is known as "wrap."

MECHANICAL ADHESION PROMOTER: The entire module shall be degreased. Degreaser shall be applied to manufacturer's recommendations. The module body is to be inspected for flaws and imperfections, and to assure built to order specifications. All surfaces shall be initially sanded with 180 grit paper and all imperfections repaired.

CHEMICAL ADHESION PROMOTER: The module shall be hot-water washed at (140 degrees or greater). Then the aluminum Body shall be treated with Alumiprep 33 acid etching followed by a complete De-ionized body rinse. To ensure all surfaces are cleaned, this step shall be repeated a second time. The entire unit shall be wet coated with Alodine 5700 conversion coating and de ionized water mixed. The module body is baked at 160 degrees to dry.

PRIMER: The module shall then have 2 coats of epoxy primer. The unit is then baked at 140 degree metal temperature for one hour. The module body will then undergo any bodywork or filler that is required at transition(s). A third coat of epoxy primer is applied and cured. The module body will then be final sanded prior to Paint color application. Primer shall be sanded with 320 grit paper to assure flat, orange peel free surface.

TOP COAT (PAINT): Entire module shall be degreased. Degreaser shall be applied to manufactures recommendations. Two coats of BTLV High Solids color shall be applied.

CLEAR COAT: The clear coat shall be manufactured by the same company as the primer and base coat. Two coats of "clear coat" polyurethane shall be applied per the manufacturer's instructions.

3M POLISHING SYSTEM: Prior to 100% paint cure, the paint on the ambulance body shall be sanded to 1200 grit and polished flat per 3Ms Perfect-It product program for smooth finish.

Bidder Complies YES_____ NO_____

CORROSION: Anti-electrolysis procedures include, but are not limited to the following.

1) Ensure all bare substrate is dry and free from contamination.
2) If bare substrate is showing signs of corrosion/oxidation, sand and remove. Use 180 grit until area is removed.
3) Thoroughly blow off areas to remove sand dust and metal shavings.
4) Thoroughly degrease to be pre-primed using the wipe-on, wipe-off method with clean white rags. (Use good quality automotive Degreaser)
5) Apply Wash primer CR using a brush to all mated surfaces. Allow to flash for 15 minutes at 70 deg Fah. Mix wash primer CR 1:1 with wash-hardner.

6) Apply Urethane caulk to all mated surfaces before assembly to reduce the possibility of corrosion.

EXTERIOR FASTENERS: All screw sites require a replaceable nylon insert for the fastener to thread into. This will isolate the dissimilar metals. Each hole shall be treated with an Electrolysis Corrosion Control compound prior to installation of the nylon inserts. All exterior screws shall be stainless steel.

PAINT WARRANTY: The conversion paint shall be warranted to the original owner for a period of 7 years, 70,000 miles. The color shift shall be no greater than Delta E of 4.0 with minimum gloss retention of 60 gloss units at twenty-degree angle. Warranty to include a 36 month Corrosion coverage with no exclusions.

UNDERCOATING: The bottom sides of the module shall be undercoated, with an exception to any area affected by exhaust system direct heat. Application standards for the undercoating shall be achieved or exceeded as directed by QVM or governing standards.

REFLECTIVE TAPE: The module door frames shall have a three quarter inch (3/4") wide white reflective tape applied to the door frame interior. The tape shall illuminate the outline shape of the door when the door is opened.

MAIN BODY COLOR: The main body color shall be oxford white (Ford YZ). The paint finish shall be laid onto the body in a flat, orange peel free, mirror like shine on all four sides.

REFLECTIVE / PRISMATIC TAPE: The aforementioned center step shall have a bright conspicuous prismatic, reflective tape strip applied the rearward facing edge of the step. The tape shall have alternating colors (Red and White). The tape color shall begin and end in Red, and each segment shall measure between seven and nine inches.

PAINT BELT AND COLORS: The paint stripe will start from cab windows down. Entire hood painted yellow. Paint on rear cab must be the same height as the front of the body where they meet. Buff the top of the unit. The paint code is Yellow 429A4.

PAINT BELT TRANSITION: There shall be a continuous paint belt at the transition between the corner post and the body skin.

Paint inside of M2.5 White

Roof Paint: Color match to sides, top finish to exceed industry standard of 5 plus mill thickness.

DRIP RAILS: A bright drip rail shall be provided over each compartment. Full height compartments are exempt because the perimeter roof rail drip rails will cover these compartments.

FLOW METER: Two flow meters shall be supplied with Ohio style quarter turn to release adapters.

DRIP RAILS: A bright drip rail shall be provided over each compartment. Full height compartments are exempt because the perimeter roof rail drip rails will cover these compartments.

OWNER'S MANUAL; There shall be shipped loose with each completed unit a DVD data file with pertinent information from the build of the vehicle.

AMBULANCE MARKING PACKAGE: The vehicle shall be supplied with a lettering and "star of life" symbol decal package as described in current Federal specification KKK-A-1822. The "ambulance marking package" is to be shipped loose with the vehicle. The "star of life" symbols shall meet Figure 4 required by KKK-A-1822.

AMBULANCE MARKING PACKAGE - ROOF STAR: A 32" roof star shall be included as a part of the lettering and "star of life" symbol decal package (as described in the current Federal specification KKK-A-1822).

SAFETY PLACARDS; There shall be installed in the chassis cab and patient area descriptive placards in durable materials to remind occupants to fasten seatbelts and to refrain from smoking.

VEHICLE IDENTIFICATION PLACARD: Will be mounted in cab area of vehicle and identify the following:

- Vehicle ID # (supplied by agency)
- Height of Unit
- Weight of Unit (unloaded)
- Length of Unit
- Fuel Type:
- Fuel Tank Capacity

FIRE EXTINGUISHER: Two (5) five pound A-B-C type fire extinguisher shall be supplied loose with the vehicle on delivery.

REFLECTOR PACKAGE: Six reflectors shall be supplied on the outside of the module body. The reflectors shall be located at skirt line level and the area size shall be at least 3.75 square inches. Each side shall have one AMBER forward reflector and one RED rearward reflector. The rear of the body shall have one RED reflector, located just above the diamond plate kick plate.

OXYGEN REGULATOR: (2) fixed output medical regulators shall be supplied with the apparatus. The output shall be fixed via a single chamber pressure setting which can produce a 50 psi +/- 5psi at 7.25 LPM. The output of the regulator may vary as the tank pressure lowers or flow rate is changed. The regulator shall have a CGA 540 thread for the bottle and a 9/16- 18 tpi threaded male connector for the input hose to the system.

CONVERSION WARRANTY
7 Year, 70,000 mile Mechanical & Electrical including Workmanship.
7 Year, 70,000 mile Standard Paint Warranty.
36 Month Paint Coatings Corrosion Warranty.
20 Year Body Structure Warranty.

WARNING LIGHT HOUSINGS: Deep chrome housings will be used for the warning lights to provide additional protection and a distinctive appearance where applicable.

PRE-BUILD/MID-BUILD/FINAL INSPECTION

- If the Awarded Vendor's manufacturing facility is greater than 4 hours from Greensboro NC, then they are required to include in their bid transportation – round trip to and from the awarded vendor's location for three (3) personnel for a Pre-Build, Mid-Build, and Final Inspection. This will include ALL overnight lodging and IRS approved per diem for the area if deemed necessary by personnel assigned to this project by Guilford County Emergency Services.
- The Awarded Vendor will deliver the completed vehicle to Guilford County Emergency Services – 1002 Meadowood Street, Greensboro after the Final Inspection is conducted by the personnel from Guilford County.
- **Contingent Purchases: In the bid response, the bidder shall also state whether they will offer additional units at equivalent price for a twelve-month period from time of award date. If the bidder is unwilling to offer at the same dollar amount, please indicate an escalation percentage for future purchases. The County reserves the right to re-bid at their discretion. The vendor shall also indicate if they will honor the same price to other departments within Guilford County for the one year term.**
- **Delivery: Date of delivery shall be included in bid materials and considered in award of the contract.**
- **Bid Response: The bidder shall indicate in the bid response, by paragraph, whether deviations or exceptions to the specification supplement herein are being taken.**
- **Additional Information: The bidder shall include in the bid response a list of all North Carolina service points and a list of North Carolina users of their vehicles (i.e. same type vehicle bid) sold under their distributorship. Information shall include name, address, telephone number and principal contact with the ambulance manufacturer's name.**
- **Insurance: Each bidder shall furnish with the bid response a copy of manufacturers and distributors product liability insurance certificate. Failure to submit this document may be grounds for rejection of the bid.**
- **NO BID. Unless a receipt of this request for a bid is acknowledged, the bidder's name may be removed from applicable mailing list.**
- **Alternate Proposals: Any proposal which is not completely defined as to the specified equipment that is to be supplied will be rejected. The procuring agency is not bound in any manner to evaluate or award any alternate proposal.**
- **Scale Drawings: All manufacturers will be required to submit detailed scale drawings with the bid. These drawings must be with the selected chassis and the proposed box.**

- CONTRACT AWARD and POST-BID REQUIREMENTS.
- **Award of the Contract: To be considered in addition to the bid price will be other pertinent factors such as completion date offered, bidder's financial responsibility, physical facilities, production capabilities, the geographic location of bidder's facilities, service location(s), and the ability to comply with items specified in the bid package.**

- **Post Bid Conference: The successful bidder shall meet with the procuring agency not later than seven (7) working days after notification of bid award. The procuring agency reserve the right to request the attendance of a representative from the manufacturing facility, (i.e. factory location), along with the successful bidder at the post bid conference. Failure to comply with this requirement shall cause rejection of the award.**
- **Reports: The successful bidder shall provide a detailed written progress report when requested, by person of the procuring agency. The report shall include the status of vehicle conversion, ordering of specified components and anticipated problems that might cause delays in delivery and any other pertinent information. Failure to submit these reports may be considered grounds for rejection of the bid.**
- **Delivery Date: The manufacturer will be allowed a maximum of 120 calendar days from date of receipt of chassis to complete the unit. The manufacturer shall pay liquidated damages in the amount of $250.00 per calendar day to the procuring agency for each day exceeding the 120 day limit or until delivery of the unit.**
- **Exceptions: The manufacturer must clearly state any exceptions from the preceding pages, with specific reference to item number and the specific exception made. Failure to do so may be grounds for dismissal of bid. Attach pages if necessary.**

**CHASSIS**

**Chassis will be purchased by the agency and supplied to the awarded vendor. The vehicle will be a Ford F-550 4x4 with Ambulance Prep Package added. The cab configuration will be a regular cab or super cab configuration depending on need by the bidding agency.**

TYPE I AMBULANCE: The apparatus shall be a 2-door, Super Cab with a CA – Cab to Axle length of eighty-four (84”) inch chassis. The Agency would also request a bid on a transferable, modular, ambulance body as well as a regular cab with a CA – Cab to Axle length of one hundred and eight (108”) inch and chassis with a transferable, modular, ambulance body. The modular ambulance body would be one hundred and fifty seven inches (157”) for a Super cab and one hundred and seventy two inches (172”) for a regular cab.

**Pricing requested for the following:**

A modular ambulance body to be manufactured and mounted on a Ford F-550 with a CA of 84” (Super Cab) one hundred and fifty seven inches (157”) modular body

A Modular ambulance body to be manufactured and mounted on a Ford F-550 with a CA of 108” (Regular Cab) one hundred and seventy two inches (172”) modular body.

Any Exception and or Modification taken by the Bidder within these specifications shall include the line number provided within this specification and action Bidder is requesting.