

*Proposal for*

# Town of Pelham, NH



**Ambulance Bid**

**April 6, 2012 ~ 10:00 AM**

***Submitted by:***

***Larry Woodbury***  
**Greenwood Emergency Vehicles**  
**530 John Dietsch Blvd.**  
**North Attleboro, MA 02763**  
**508.809.9818**



# PELHAM FIRE DEPARTMENT

P.O. BOX 321  
PELHAM, NEW HAMPSHIRE 03076

Chief James F. Midgley

EMERGENCY TEL: 603-635-2421  
BUSINESS TEL: 603-635-2703  
FAX: 603-635-6970

March 16, 2012

Town of Pelham Fire Department  
8 Old Bridge St  
Pelham, NH 03076

Dear Sir or Madam:

The Town of Pelham would like to cordially invite you to bid on a 2012 medium duty ambulance. Attached you will find a bid specification. The Town of Pelham Fire Department reserves the right to accept or deny any and all bids. The Town of Pelham Fire Department is going to look after its best interest and require a high quality ambulance be built. Bids will be accepted until April 5th, 2012 at 16:00. Bids must be sent to the fire department, attention Chief James Midgley. Opening of all bids will take place on April 6th, 2012 at 10:00am; you have the right to attend. Awarding of the bid will be approximately 3 business days post bid opening. If you have any questions, they may be directed to Lt. Greg Atwood or Chief Midgley.

Sincerely,

Gregory Atwood  
Lieutenant Paramedic  
Fire Training Officer  
Town of Pelham Fire Dept  
8 Old Bridge St  
Pelham, NH 03076  
P – 603-635-2703  
F – 603-635-6970

[gatwood@pelhamfire.com](mailto:gatwood@pelhamfire.com)

# Pelham, NH Fire Department

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Pelham Fire Department  
PO Box 321  
Pelham, NH 03076

**Specifications for One (1) New  
2012 Type I, Class 1  
Emergency Medical Rescue Vehicle**

## **INVITATION TO BID**

The **Pelham Fire Department** is seeking sealed bids for the furnishing of one (1) new, 2012 model year, Type I, Emergency Medical Vehicle. Bids for the specified unit, equipment and accessories shall be submitted to \_\_\_\_\_ before \_\_\_\_\_, at which time they will be publicly opened and read.

Final bid award is subject to appropriation of funding.

Bids shall be submitted in sealed envelopes marked "Bid for Type I, Emergency Medical Vehicle". Date and time of bid opening **MUST** appear on the outside of the envelope as well as the name, address and telephone number of the bidder.

It shall be understood that the fire chief reserves the right to reject any or all bids, or accept the proposal which the chief deems to be in the best interest of the fire department. In the event of any doubt or difference of opinions as to the items to be furnished herein, the decision of the chief shall be final and binding on both parties. All agreements and changes shall be in writing.

The fire chief has the right to reject any bid submitted by a dealer or manufacturer who cannot demonstrate a similar completed current model year vehicle equivalent to or exceeding the specifications to that which is being requested in this bid. Each bidder must submit a reference list, with their bid, stating the names, addresses, telephone number, and contact person of at least 10 communities where similar vehicles have been sold.

The fire chief will accept the finished vehicle after determination has been made that the entire specifications have been met.

## **INTENT OF SPECIFICATIONS**

It is the intent of this specification to cover a new, tested and certified, commercially produced emergency vehicle of the type specified in the Ambulance design Criteria of the National Highway Traffic Safety Administration, U.S. Department of Transportation, Washington, D.C. This specification is based upon compliance to minimum standards as outlined in Federal Ambulance specification KKK-A-1822F, and may reference specific paragraphs throughout these specifications. The intent of this specification is to purchase a vehicle that complies with these minimum standards, and other Federal referenced standards in effect at time of issuance. Where these specifications do not reference any specific section of the KKK-A-1822 document, it is not to be construed that the paragraph is not required for compliance. However, where specific requirements are detailed in this specification, they will supersede those referenced in the KKK-A-1822 document.

Before awarding the bid, the fire chief reserves the right to require the bidder to submit such evidence of their qualifications as may be deemed necessary. The following documentation may be required: financial stability, technical expertise, experience, and other qualifications and abilities of the bidder

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## Contract

These specifications shall become a part of the final contract. There is no intention to disqualify any bidder who meets the minimum requirements of these specifications. It should be noted, however, that this specification is written to address specific needs of the purchaser. As such, price will not be the primary consideration in the final bid award. Purchase will be made from the vendor whose product exhibits and meets all established requirements, at the most competitive price.

Bids shall be evaluated by the chief and/or his designee. The evaluation will be based on the following minimum criteria:

Commitment to the conditions specified herein, particularly to the sections which apply to bidder qualifications and FULL TIME , IN HOUSE service capabilities.

Documentation and verification of a professionally staffed, trained, fully certified (EVT) repair and service shop as described in this package.

Qualifications, reputation and history of the bidder.

Completeness of the proposal and the degree to which the bidder responds to the requirements and requests for information by the purchaser.

Commitment for expedient delivery.

Service facility meeting ALL stated requirements, within 70 miles of **Pelham, NH**.

No bid may be withdrawn within sixty (60) days subsequent to the opening thereof without permission of the chief.

The chief reserves the right to reject any or all bids, waive any informalities in the bidding, or accept the bid which is deemed to be in the best interest of the department.

Exceptions: Exceptions can be made to any section. The ONLY 2 section an exception cannot be made on is the Pelham driveway specification section and trade in section. If you do not meet the minimum of a section or cannot meet a section you must explain why. If your product exceeds a section it must be noted, however no explanation is needed. The fire chief at his right and free will or without justification can exclude a section causing grounds for rejection if he feels as though your product does not exceed the section the bidder deems to be exceeding.

Brand names unique to this specification: If there is a brand name label or equipment that is unique to a specific bidder that is written in this bid spec, it is noted that "or equivalent" is assumed to follow said brand name or equipment.

Example: a VI-Tech tuned mounting system shall be used "or equivalent"

## SCOPE AND GENERAL REQUIREMENTS

This specification describes a commercial type emergency medical vehicle constructed to withstand the rugged and intense use of providing emergency medical care in the New England region. The vehicle being proposed must meet all federal regulations as specified in KKK-A-1822 and the current National Truck Equipment Association/Ambulance Manufacturers Division Standards as well as Ford Motor Company Light Truck Incomplete Vehicle Manual, Body Builders Layout Book and Qualified Vehicle Modifier (Q.V.M.) Program Truck Guidelines.



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## Comparison:

Each vendor must comply with the following:

A. In order that an equal uniform comparison may be made, all bids must be submitted in the exact sequential format herein outlined. Bidders standard proposal will not be considered in lieu of bid proposal format herein required. Purchaser will not attempt to decipher various manufacturer's proprietary specification documents, etc. in an effort to determine compliance with all items required herein, and to make a determination if all bidders are bidding equal components and quality.

B. If the bidder is not going to furnish the item exactly as described in these specifications, he must indicate a deviation even though he may feel he is exceeding what is described. For each deviation taken, the bidder must include sufficient data of the intended substitution for a proper evaluation to be made. Terms such as "to the intent of" will not be acceptable and may deem the bid unacceptable for evaluation.

All exceptions taken must be referenced and explained thoroughly. Final inspection of the vehicle will be accomplished using these specifications and CAD drawings to determine compliance. Therefore, paragraphs marked as complying will be inspected as such.

Proposals that are found to have deviations without listing them will be subject to rejection by the fire chief.

## Descriptive Materials:

Descriptive material such as plans, drawings, photographs, diagrams, illustrations, written descriptions, and manufacturer's literature which will enable the purchaser to determine the exact quality, design, and appearance of the ambulance proposed, shall accompany the bid. All equipment listed, or shown, in the manufacturer's literature, drawings, or photographs, and approved by the purchaser, shall be furnished.

## Complete Ambulance:

This bid is for a complete ambulance, as outlined herein. No omissions shall be permitted, and the ambulance shall be complete, serviced, and ready to use upon delivery.

## Vendor Liabilities:

Successful bidder assumes all liability for patent infringements, trademarks, etc., if any, in construction of the ambulance outlined herein and shall deliver the ambulance free of all liens. Both the chassis and body manufacturer's original statement of origins, properly assigned to purchaser, shall be furnished upon completion of contract, acceptance, and payment. Bidders are cautioned that a certificate of origin from the body builder only is not acceptable.

## Bidding Practices:

A. Bids must be held firm for a period of not less than 60 days to permit examination and comparison, unless otherwise specified.

B. No bid may be withdrawn, modified or otherwise changed once the bids have been opened. It will be assumed that each bidder has thoroughly and completely familiarized themselves with these specifications at time of bid. Modification to a bid, once submitted, will not be permitted. Simply stated, if any item, feature, option, etc. is not stated in writing in bidder's proposal, it will not be considered. Bidders are cautioned that verbal or written modifications to already opened

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bids are neither valid, or considered ethical, and the comparison and selection of bid award will proceed only from what is stated in bidder's written proposal.

C. These specifications have been prepared after due consideration by purchaser and alternate bids are not permitted.

D. Purchaser reserves the right to reject any or all bids, and to determine the proposal deemed in the best interest of purchaser from among those properly submitted, in accordance with these specifications and the laws of this State. Bid award will be made from considerations such as quality, conformance with these specifications, and completeness of proposal.

E. By signing this bid, the bidder has agreed to all terms and conditions of this specification, except as noted separately.

F. Pre-Construction Conference - Successful bidder may be required, prior to issuance of a final contract, to have a Pre-Construction Conference which can also be classified as a Post-Bid Conference. Bidder must be present in person to finalize all details and answer any final questions the purchasing and specification committee have regarding the bid proposal submitted. No contract or authorization to begin construction will be authorized until such time as this conference is scheduled, or determined not be necessary. All necessary materials and final drawings required in this will be required to be presented at this meeting, if not required prior to the bid opening.

## Delivery Inspection Procedure:

Upon arrival, vehicle purchased will be inspected, using this specification document and drawings, and each item and paragraph of the attached specification will be checked, line by line, for compliance. No deviations from this specification will be permitted unless vendor has submitted such proposed deviation in writing with this bid proposal and such exceptions are granted.

## GENERAL REQUIREMENTS:

### Emergency Vehicle Technician Qualifications

Due to the highly specialized nature of emergency vehicle repair, emergency vehicle technicians employed by the bidder shall be in conformance with NFPA standards 1915 and 1071. The bidder shall employ a minimum of fifteen (15) E.V.T. certified technicians including a minimum of one (1) technician certified as a "Master Mechanic" (having amassed every EVT certification). Proof of current certification shall be supplied with the bid.

## OTHER REQUIREMENTS:

### ***The Manufacturer of this vehicle;***

- shall be a participating member of the National Truck Equipment Association's Ambulance Manufacturers Division and shall submit a copy of membership as part of the bid package.
- shall submit a copy of current certificate of compliance with Federal Specification KKK-A-1822 for the vehicle herein proposed, as prepared by an independent testing company.
- shall carry not less than \$25,000,000.00 in product liability insurance (copy of insurance certificate to be supplied with bid package).
- shall employ a full time warranty representative.
- shall furnish custom Computer Aided Design (CAD) interior and exterior construction drawings specific to each vehicle produced.
- shall furnish 3<sup>rd</sup> party written certification, that the modular ambulance body has ***been dynamically tested for both frontal and curb side impact at an applied force of 20 G's acceleration to evaluate the body to chassis***

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*mounting system, the cabinet, seat belt, gurney, door, and oxygen system supply tank retention, and the occupant interaction with the active and passive restraint systems.*

- *If bidders safety and structural integrity do not meet minimum bid standards the fire chief reserves the right to reject the bid. If the bidders testing process meets or exceeds this spec you must detail your testing process.*

## ***The Local Dealer/Distributor of this vehicle;***

- shall employ a **minimum** of 3 full time parts personnel with a toll-free access number.
- shall employ a full time electrical technician/troubleshooter.
- shall own and operate a full service/full time parts and service center. Financial stability of the bidder is of the utmost importance, therefore any bidder subletting or renting space to conduct business will not be considered. Service facility must offer full parts, paint, body collision repair, electrical and conversion repair under one roof without use of third party facilities. Any bidder who cannot demonstrate that they meet this requirement will be deemed unresponsive and no further analysis of that bid will take place.
- shall include the primary telephone number to be used when service, parts, or general information is required. The end user reserves the right to call the published telephone number at various times during the administrative workday to verify its' authenticity. Use of answering machines, cellular telephones or pagers in the absence of full time, verifiable employees is unacceptable. For purposes of definition, the established times for administrative workday are 8:00 a.m. to 4:30 p.m. weekdays, (excluding holidays).
- shall employ a minimum of fifteen (15) full time E.V.T. (Emergency Vehicle Technician) certified mechanics and technicians. Due to the complex nature of emergency vehicle design and repair, this requirement will not be waived. Proof of employment of full time, on site personnel may be required. Such documentation may be in the form of payroll records, health insurance documentation, worker's compensation documents, or other means of verification. Additionally, copies of EVT certificates for all EVT certified employees must accompany your bid/proposal.
- shall employ as their emergency medical vehicle sales representative, a licensed emergency medical technician at the advanced life support level (E.M.T.-Intermediate or above) or provide documentation that the sales representative was, for a minimum of five (5) years, licensed as such. This requirement assures the end user that the sales representative has an understanding of the importance of a well-designed, functional vehicle upon delivery. Documentation must be provided with bid/proposal.

## Delivery:

The ambulance shall be delivered under its own power to assure adequate break-in while under warranty. It shall first be transported to the local service facility, where final inspection and preparation will be performed, including mounting of related equipment such as radios, hand light and computer dock for a Panasonic CF-19. The ambulance will also be inspected by the Office of Emergency Medical Services before delivery to insure KKK compliance. The ambulance will then be delivered to the Purchaser's location.

## Construction Time:

Each bidder shall state the number of calendar days required to construct and deliver the completed ambulance. In the interest of public safety, an early delivery will be an extremely important consideration.

## Terms of Payment:

The purchaser will pay for the completed ambulance upon delivery. Proposals requiring any payment prior to delivery will not be acceptable. Optional payment programs in exchange for an over-all cost savings will be considered.

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## Tag On Orders

The purchaser reserves the right to require tag on purchases to this order for up to one (1) year from contract signing.

**ANY EXCEPTIONS TO THESE SPECIFICATIONS MUST BE CLEARLY MARKED AS SUCH. EACH EXCEPTION MUST BE REFERENCED BY PAGE NUMBER AND DESCRIPTIVE TERM.**

**THE CHIEF SHALL DETERMINE WHICH, IF ANY, EXCEPTIONS TO THESE SPECIFICATIONS WILL BE ACCEPTED. ANY EXCEPTION WHICH IS TERMED "EXCEED" MUST BE ACCOMPANIED BY A CERTIFIED DOCUMENT FROM A PROFESSIONAL ENGINEERING FIRM WHICH STATES WHY YOUR BID EXCEEDS THE INTENT OF THESE SPECIFICATIONS. CERTIFICATION MUST ALSO BE NOTORIZED BT A NOTARY PUBLIC.**

**COMPLIANCE WITH THESE SPECIFICATIONS MUST INCLUDE ALL OF THE ABOVE LISTED REQUIREMENTS.**

**BIDDERS ARE ADVISED THAT THIS SECTION OF THE SPECIFICATIONS WILL BE EVALUATED BEFORE THE VEHICLE TECHNICAL SPECIFICATIONS. BIDS THAT DO NOT COMPLY, OR ARE NOT VERIFIABLE, TO THE ABOVE REQUIREMENTS WILL BE IMMEDIATELY DEEMED UNRESPONSIVE AND THE BID WILL BE REJECTED WITHOUT FURTHER REVIEW OF THE TECHNICAL SPECIFICATIONS.**

Does your bid comply?    Yes ✓    No       

## **SINGLE SOURCE MANUFACTURER:**

To simplify warranty coverage and to assure a consistent level of quality throughout the vehicle, a manufacturer is desired that manufactures the major components for the ambulance (excluding the chassis). Major components are defined as including the module body, the aluminum interior cabinets, and the converter-added electrical wiring system.

This purchaser understands that manufacturers may purchase some elements, such as switches, boards, etc. with which to manufacture a system.

Further, this specification requires the vehicle manufacturer to own the design of, as well as the rights to, the onboard converter-added electrical system. Generic aftermarket systems that are manufactured by an outside company and installed by the vehicle converter are not desired.

These requirements are addressed elsewhere within this specification where the specific defined items are located. Manufacturers who outsource any of the above-referenced components shall be subject to rejection.

Bidder states that the represented vehicle builder manufactures all of the major components as defined above:

Yes ✓    No           Initial:       

## **QUOTATION:**

The overall quotation shall include a firm price for a vehicle meeting these specifications. The length of time that the price will be held shall be clearly stated in the quotation. The quotation shall include a specific delivery window based on the number of calendar days following the award of the contract. The model year of both the chassis and the conversion shall be clearly stated in the contract.

## **WARRANTY:**

The proposal shall include all warranties that are required in the following detailed specification. All warranties must have specific time durations and shall define warranties on specific components. The minimum acceptable warranty periods are noted below. In the blank lines the bidder shall note the terms of the

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warranties that apply to the manufacturer being proposed.

MODULAR BODY STRUCTURAL WARRANTY: 15 years/Unlimited Miles

Proposed warranty term: 15 years/ unl Miles

Note: The structural warranty, as noted in the structural section of this specification, will include the module doors, continued module body door alignment, and all interior cabinet construction. The remounted body shall be completed with the greater of the existing body structural warranty from the OEM still in effect or an extension of (5) years from the date of completion, whichever is greater.

The body structural warranty will be effective under the following conditions: (1) the re-chassis is performed by the original manufacturer, (2) the structural warranty has not expired at the time of the re-chassis, and (3) this purchaser approves any structural repairs at the time of the re-chassis. These terms and conditions must be explicitly stated in the manufacturers warranty certificate.

Does the structural warranty proposed comply with the above-stated terms and conditions?

Yes ☒ No ☐

ELECTRICAL WARRANTY: 6 years/72,000 Miles

Proposed warranty term: 6 year(s), 72 000 Miles

CONVERSION WARRANTY: 2 Years/24,000 Miles

Proposed warranty term: 2 year(s), 24000 Miles

PAINT WARRANTY: 4 Years/48,000 Miles

Proposed warranty term: 4 year(s), 48K Miles

(No paint vendor warranties will be accepted)

For verification of the completed warranty terms stated above the bidder must include printed manufacturers warranty certificates that meet or exceed the minimum required periods stated above.

Are the manufacturers warranties included? Yes ☒ No ☐

Warranties shall not be pro-rated in any manner and shall be transferable for their duration. All warranties shall be from the manufacturer as opposed to a distributor or service center. This is necessary for the protection of the purchaser, and to guarantee a certain known level of service and warranty. If, however, the bidder feels that it is necessary to modify the manufacturers warranties, then the bidder shall state why this modification is necessary. In addition, the bidder shall provide a full descriptive warranty certificate describing the warranty modification and the fact that it takes specific precedence over the warranty offered by the manufacturer. If no such certificate is provided, then the modified warranty shall be considered invalid and the manufacturers warranty shall remain in force. If a warranty modification is proposed through either a distributor or service center, then complete financial statements for that business covering the past five (5) years MUST BE SUBMITTED with the bid. If the manufacturer states that no party is permitted to modify its warranty, then any warranty modification provided by the bidder, despite being in writing, shall automatically be rejected.

Does the bidder conform to the above-written section? Yes ☒ No ☐



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In order to simplify the evaluation process the following questions must be answered and this section must be initialed by the bidder.

Are the warranties pro-rated in any manner?  
If yes explain.

Yes\_\_\_\_ No ☒

Are the warranties transferable?  
If yes explain.

Yes ☒ No\_\_\_\_

Please notify Greenwood or Horton of owner and date

Has the bidder modified the manufacturers warranties? Yes\_\_\_\_ No ☒  
If yes explain.

If yes was chosen above, has the bidder included modified written warranties?  
Yes\_\_\_\_ No\_\_\_\_  
If no explain.

If 'yes' was chosen above, has the bidder included financial statements, for the last five (5) years, of the warranty modifier? Yes\_\_\_\_ No\_\_\_\_  
If 'no' explain.

Bidder shall initial that this section is understood and has been answered truthfully. Initials: 

Note: Bidders who are found to be untruthful in this, or in any other section of this bid, will have their bid automatically rejected.

### SERVICE AVAILABILITY:

Service will be a major factor in the award of this proposal. Convenience and experience will be determining factors in defining acceptable service. A service facility within a radius as described below will be required. Personnel performing the service shall be trained by the manufacturer with emphasis in the area of electrical service. In order to evaluate the proposed service facility the following information shall be provided on the appropriate lines.

Radius from purchaser: Not more than 70 miles.

### ENGINEERING SUPPORT:

Due to the complexity of the design of the vehicle, proposals will be accepted only from manufacturers that utilize well-defined engineering techniques. Computer Aided Design (CAD) drawings of both the interior of the

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patient area and the overall layout of the module body will be mandatory. At a minimum these drawings shall include all exterior elevations, all interior views (4), and a plan view of the roof/ceiling. All options and elements required within these specifications shall be depicted on the prints. The purpose of this requirement is to assure this purchaser that vehicle proposals indeed meet the stated requirements as set forth in these specifications. Generic CAD drawings are not acceptable. The drawings, as submitted, shall accurately depict the exact vehicle that is being proposed. Bidders not including the required drawings will be considered non-responsive and will, therefore, be rejected.

Are the required drawings included with this bid? Yes ✓ No       

### SAFETY CERTIFICATION:

The verification of construction techniques used throughout the building process must be furnished by the manufacturer/bidder. The installation methods and construction techniques associated with seat belt retention, cabinet construction and installation, oxygen cylinder retention and module to chassis mounting systems must be verified through a controlled Hygee sled test that simulates an actual impact condition. This test must be performed, under both side and frontal impact conditions, to a minimum force of 30 G's. All testing must be performed by a testing agency that is independent of the manufacturer.

As proof of this verification process being performed, the bidder must provide the following information (leave blank if this is not a sled test being verified):

Testing Facility Name: CTL Eng.  
Date Tested: June /        / 2007  
'G' Force Tested To: 30 G's

### BODY INTEGRITY VERIFICATION:

In addition to the testing described in the preceeding section the bidder must also ensure the integrity of the patient compartment of the vehicle in the event of an accident by performing dynamic testing to demonstrate compliance to International Standard ECE R29 and SAE Standards SAE J2422 and SAE J2420 applied to the rear of the body. Testing shall involve a Dynamic Preload side impact on a 20 degree fixture at 13,000 foot lbs, a 22,000 roof load and a rear impact at 32,600 foot lbs. Impact shall be provided by a 13,000 lb platen cart moving at the speeds prescribed to achieve the necessary impact energy. The impact cart shall include DAS, a propulsion system capable of  $\pm 0.25$  mph speed control, remote braking and Ethernet communication in concert with an installed barrier facility.

During the above described testing, two Hybrid III 50th percentile mannequins shall be installed, one in the standard attendant's seat, and one on the squad bench area. Bidder will be required to demonstrate via photos or other evidence as may be approved by this agency that the mannequin restraint systems worked properly and that the mannequins remained in their original positions.

Does the bidder comply with this requirement? Yes ✓ No        Initial Hee

Full documentation, signed by a professional engineer from the testing laboratory shall be provided with the bid proposal.

## **INTERIOR OCCUPANT PROTECTION:**

For the safety of the attendants working in the patient area, the vehicle shall be equipped with an interior occupant protection system incorporating an emergency inflatable airbag system at both the attendant and the CPR seat locations. In the event of a side impact rollover collision, the bags shall be triggered by an electronic sensor to inflate and protect the occupants against severe head strikes typical of such collisions.

The attendant seat location shall be protected by an inflatable head cushion technology as well as a unique inflatable tubular system to prevent the attendant from impinging into the danger zones of the inhalation area.

The CPR seat location shall be protected by a combination of an inflatable tubular system at the forward side to protect against entry into the inhalation area as well as a system of progressive resistance head protection cushions. The progressive resistance head protection cushions shall incorporate layers of foam of increasing densities. Should a head strike occur, then the increasing density of the cushion as the impact progresses shall lessen the likelihood that the head will reach the aluminum cabinet material behind the cushions. It should be noted that standard single density foam cushions will not meet the requirements of this section. The bidder must have performed both actual impact tests as well as computer simulations in order to test the efficacy of this material in reducing head strike intensities to a survivable rate.

All airbag seating locations shall have been tested with a variety of occupant sizes. Those tests shall include Hybrid III fully instrumented test mannequins including 5% child (115 lbs.), 50% female (163 lbs.), and 95% male (195 lbs.). Testing shall have included at least fourteen (14) fully instrumented destructive dynamic roll crashes and an additional six (6) side impact destructive crashes. Roll crash testing shall be performed at 17-19G's while side impacts shall be approximately 27G's.

The vehicle must have been certified as compliant to standards ECE R29, SAE J2420, and SAE J2422. The bidder must show evidence that their service facility is trained and certified to service or to replace the airbags should the need arise.

Each seating position shall include seat belts as follows:

Attendant seat: Three point seat belt.

CPR seat: Three point seat belt with removable third point latch.

Ends of bench: Three point seat belt with removable third point latch.

Center of bench: Two point seat belt.

Each seat belt shall have been tested to verify its latching capabilities and performance as well as the extent to which it allows movement by the "spooling effect" within the retractor. Those tests shall verify that this spooling effect allows less than three inches (3") of belt travel before latching G.

Above section bid exactly as written: ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **REFERENCES:**

The proven durability and reliability of this product is of the utmost concern. Each bidder submitting a proposal

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must furnish references consisting of in-service units of similar chassis make and conversion processes being proposed.

All references shall include owner, address, contact name and phone number, and the model owned. A minimum of Twenty five (10) references shall be provided:

1. Owner: \_\_\_\_\_

Address: \_\_\_\_\_

Contact: \_\_\_\_\_

Phone #: 1-(\_\_\_\_)-\_\_\_\_-\_\_\_\_

### LIABILITY:

The bidder shall defend, indemnify, and save harmless the purchaser and its officials from all claims, demands, payments, suits, actions, recoveries, and judgments of every description, whether or not well founded in law, brought or recovered against it, by reason of any act or omission of said bidder, his agents or employees, in the execution of the contract or in consequence of insufficient protection or for the use of any patented invention by said bidder, and a sum sufficient to cover aforesaid claims may be retained by the purchaser from money due or to become due to the bidder under this contract, until such claims have been discharged or satisfactorily secured.

Each bidder must furnish a Certificate of Insurance showing aggregate total of insurance which shall not be less than twenty-five million dollars (\$25,000,000).

Certificate of Insurance included with proposal? Yes ☒ No ☐

In addition, the bidder is to assume any risk of loss to the ambulance until the ambulance is delivered to this purchaser.

Does the bidder understand this requirement? Yes ☒ No ☐

### INSPECTION TRIP:

An inspection trip shall be provided by the bidder. The inspection trip shall take place during the latter stages of the manufacturing process. The trip shall include transportation, room, and board for 3 days and 2 nights stay. A trip requiring travel of more than 150 miles shall be via commercial air carrier. Under no circumstances shall air travel be via private or corporate aircraft.

Number of personnel: 2

Inspection trip included in bid: Yes ☒ No ☐

### PRICE AND TAXES:

All prices quoted shall be for a definite fixed price unless otherwise specified. Prices shall exclude Federal, State, and other taxes to the extent that this purchaser is exempt. All pricing shall be F.O.B.

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F.O.B. : Pelham NH

## TYPE OF BIDS TO BE SUBMITTED:

In the event that the bidder represents more than one ambulance manufacturer meeting the manufacturer requirements outlined herein, then the bidder shall only bid the highest quality vehicle that the bidder represents. Under no circumstances will multiple bids from the same bidder on different manufacturers be accepted. Should a bidder submit two or more bids representing more than one manufacturer, then all bids submitted by that bidder will be rejected as being non-compliant with the requirements of this specification. This purchaser is seeking quality equipment. Bidders are asked to bid only the product of the highest level of quality represented by that bidder.

Is this requirement understood and met? Yes ☒ No ☐ Bidder's initials: Lu

## EXCEPTIONS TO SPECIFICATIONS:

Exceptions to these specifications shall be noted below. All exceptions taken shall be recorded per the guidelines defined above. Each exception shall be noted by page number and item header. If additional space is required for exceptions, then the bidder shall use additional paper as necessary, however the same format shall be used.

Page #: \_\_\_\_\_ Header: \_\_\_\_\_  
Exception: \_\_\_\_\_

## CHASSIS, 2012 Terrastar:

The vehicle converter shall supply a 2012 183" wheelbase International Terrastar chassis for the ambulance conversion. This chassis shall have a 108" cab-to axle dimension.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## ENGINE AND RELATED EQUIPMENT:

- MaxxForce 7 with 300 HP and 660 ft. lbs. torque @ 1,600 RPM, governed @ 2,600 RPM.
- Air cleaner restriction gauge installed in dash.
- 40 gallon fuel tank mounted aft of rear axle between frame rails.
- Racor fuel filter with change light.
- 1,000 watt engine block heater.
- Engine hour meter
- Engine tachometer
- Borg Warner viscous 790 fan drive.
- Single steel muffler and tail pipe mounted horizontally on the right hand side with tail pipe routed to exhaust on right hand side.
- Exhaust horizontal aftertreatment device.
- Low pressure oil indicator and high water temperature warning with light and buzzer



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- Electronic cruise control
- 697 square inch two-row radiator with 225 square inch air cooler with in-tank transmission cooler.
- 2010 federal emissions

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## TRANSMISSION:

- Allison 1000 EVS automatic transmission.
- Transmission oil temperature gauge.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## REAR AXLE:

- Ratio: 4.88:1
- To include magnetic drain plug.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## OVERALL WEIGHT RATINGS:

- GVW: 19,500 lbs.
- Front Axle: 7,000 lbs. Dana Spicer
- Rear Axle: 13,500 lbs. Dana Spicer
- Front Springs: 7,000 lbs. Parabolic Style, Taper Leaf Springs
- Rear Suspension: 12,000 lbs.-Air suspension with air reservoir, dump control and compressor.
- Manual dump control switches are to be installed at both the rear doors and in the cab. Automatic dumping will occur when the rear doors are opened. The air dump system will inflate when either the rear doors are closed, or, if the air dump override has been activated, when the vehicle is placed into gear and starting to move.
- A dash-mounted air gauge shall be installed.
- Dual rear leveling valves shall be installed along with a manual drain valve.
- Shock Absorbers: Heavy duty front and rear.
- Frame Rails: 80,000 psi high strength steel.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## TIRES AND WHEELS:

- Quantity: Six (6) tires
- Front Tire Style: Goodyear G647 RSS with ribbed highway tread

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Front Tire Size: 225/70R19.5F  
Rear Tire Style: Goodyear G622 RSD with mud & snow tread  
Rear Tire Size: 225/70R19.5F  
Wheels: (4) 19.5" X 6.00" polished aluminum disk wheels (front and outside rear).  
Wheels: (2) 19.5" X 6.00" steel wheels (inside rear)  
Wheel Seals: Chicago Rawhide

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **BRAKES:**

Brake system: Hydraulic ABS disc brake system.  
Parking Brake: 12" x 3" DSSA manual parking brake.  
Brake Control: Push-pull park brake on dash.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **INTERIOR APPOINTMENT STANDARDS:**

- Premium Interior Package
- Air conditioning with integral heater and defroster
- Power windows
- Power door locks
- Grab handles
- Tinted glass
- Driver and passenger seats to be National Cushion Aire 2000 high back air suspension seats with inside armrests
- Power steering
- 18" black steering wheel
- Tilt steering
- Courtesy lights
- Dual padded sun visors
- Door trim panels with storage pockets
- Cigar style 12V power point
- Cigar lighter and ashtray
- Molded fabric back panel
- Molded cloth headliner
- Molded instrument panel
- 'A' pillar cover
- Jump start studs
- Rubber floor covering
- An International AM/FM stereo/CD player with two (2) speakers installed in cab
- Low washer fluid warning light
- Factory gauges for oil pressure, fuel capacity, water temperature, air pressure, and tachometer with converter-added digital display for ammeter and voltmeter

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Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **ADDITIONAL APPOINTMENT STANDARDS:**

- Tilting three-piece fiberglass hood and fenders with stationary chrome grille
- Frame-mounted front tow hooks
- Chrome plated front bumper
- Dual Grover hood-mounted air horns
- Dual electric horns
- Battery disconnect switch
- Manual reset circuit breakers
- Halogen headlamps
- Intermittent windshield wipers
- Required ICC lights
- Parking/Hazard/Turn Signal Lamps
- Exterior grab handles near cab doors
- Deluxe insulation package
- Heated/motorized west coast stainless finished mirrors

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **BATTERIES:**

The vehicle shall be equipped with three (3) 750 cca batteries located on a slide-out tray beneath the curb side forward body compartment. The total cca rating for this vehicle shall be 2,250 cca.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **ALTERNATOR:**

A 320 amp Leece-Neville alternator shall be installed on the chassis. Alternator must maintain battery charge at idle with all additional electrical loads.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **REVERSE ALARM:**

An audible alarm shall be installed to activate when the vehicle is placed into reverse gear. There shall be, installed on the front console and wired through the vehicle electrical system, a momentary cutoff switch to disable the alarm. This switch shall automatically reset each time the vehicle is placed into reverse gear.

Above section bid exactly as written: ✓

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Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **WARRANTY:**

The chassis manufacturer's standard vehicle warranty policies shall apply.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **CHASSIS INTERIOR COLOR:**

The chassis interior shall be O.E.M. gray.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **CHASSIS HARDWARE AND ACCESSORIES:**

The items to follow represent chassis modifications, hardware, and accessories that are required. Failure to provide these features will be cause for rejection of the bidder's proposal as being non-responsive.

### **WHEEL HUB AND LUG NUT COVERS**

Polished stainless steel wheel hub and lug nut covers shall be installed on each of the four outside wheels.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **MUD FLAPS, FRONT:**

The vehicle converter shall install mud flaps behind the front wheels. The mud flaps shall attach to the chassis front fenders and shall protect the cab body panels from road debris.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **MUD FLAPS, REAR:**

The vehicle converter shall install individual rubber mud flaps behind each rear wheel. The mud flaps may incorporate the converter's corporate logo provided that the logo is made out of stainless steel or equivalent and attached to the mud flap. Logos either printed on, or otherwise incorporated into the mud flap are not desirable as they cannot be removed and possess a tendency to fade.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

**REAR STEP/BUMPER REINFORCEMENT:**

The standard rear step shall be reinforced with 2" x 2" steel angle for added impact protection.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

**RUNNING BOARDS:**

Diamond plate running boards shall be installed on each side of the cab at the cab entry points. The running boards shall be constructed with .125" thick 3003-H14 alloy polished aluminum diamond tread plate.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

**REAR STEP/BUMPER WITH 3" SET BACK STEP SURFACE:**

The rear of the vehicle shall be equipped with a step/bumper assembly to be fabricated from .125" polished aluminum diamond Treadplate. The assembly shall be spaced out from the rear kick plate a minimum of 1.5". The center section of the assembly shall pivot up and over center on two (2) .5" bolts to stay in the 'up' position. This section shall be set 3" closer to the body than the step end caps and be welded in place. It is to be constructed with grip-strut on the stepping surface to provide for better footing. The ends of the assembly shall be fixed diamond tread plate. The distance between the top of the step and the ground shall not be less than 16". The fold-up portion of the step shall be firmly held down with two (2) pin and socket holders to prevent rattling while the vehicle is in motion.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

**MIRROR: OEM**

The mirror set shall be OEM supplied, and installed by the chassis manufacturer.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

**AIR SUSPENSION OVERRIDE SWITCH:**

A manual air dump override switch shall be installed as noted below. This switch shall override the air dump activated by opening of the left rear patient compartment entry door.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_



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## **'ON SPOT' AUTOMATIC TIRE CHAINS:**

'On Spot' automatic tire chains shall be installed on the vehicle. The switch to activate the chains shall be installed on the front console of the vehicle and shall include a safety guard to prevent the switch from accidentally being engaged.

Above section bid exactly as written: ☒   
Section not provided: ☐   
Bidder is offering an alternative to this section: ☐

## **DELETION OF THE ON SPOT AIR COMPRESSOR:**

The On Spot air compressor shall be deleted. The On Spot automatic tire chains, as specified below, shall operate from the chassis air system.

Above section bid exactly as written: ☒   
Section not provided: ☐   
Bidder is offering an alternative to this section: ☐

## **ECHO VISION- OBSTACLE DETECTION SYSTEM-**

A sensor system will be installed on the rear of the module. This system will emit a series of variable pitched sounds to alert the driver when an object is about to come in contact with the rear of the vehicle.

Above section bid exactly as written: ☒   
Section not provided: ☐   
Bidder is offering an alternative to this section: ☐

## **DUAL CAMERA SYSTEM:**

The vehicle shall be equipped with a backup camera mounted over the rear doors. A second identical camera shall be installed on the vehicle interior as noted below. The driver area monitor shall be a wide format LCD style with a 7" non-glare color screen. The monitor shall be capable of handling two camera inputs with manual or automatic source selection. It shall have an auto power-on feature when the vehicle is shifted into reverse.

Second camera location: over rear doors

Above section bid exactly as written. ☒   
Section not provided. ☐   
Bidder is offering an alternative to this section. ☐

## **CONVERSION:**

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The following section describes the required body design, manufacturing process, and materials. Adherence to this section is of extreme importance to this purchaser due to space requirements and safety concerns. The bidder must meet this section as closely as possible without utilizing experimental or prototype designs in order to be considered for bid award.

**Chassis Exhaust:** Shall be curb side and successful bidder is to arrange to have a ply-movent adapter installed at Pelham Fire.

## **MINIMUM BODY DIMENSIONS:**

The completed vehicle shall have the following maximum dimensions:

(Exterior)  
-Height: 92"  
-Width: 96.25"  
-Length: 167"  
(Interior)  
-Height: 72"  
-Aisle 48"  
-Length: 163"

## **OVERALL DIMENSIONS (Including Chassis, Module and Step):**

-Height: 117" (to top of vent)  
-Width: 100"  
-Length: 299"

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

## **MODULAR BODY STRUCTURAL DESIGN REQUIREMENTS:**

The module body shall be designed and fabricated with the following key elements in mind:

1. The greatest possible load carrying capacity is desired.
2. The safety of all vehicle occupants is of paramount concern.
3. The body design, including construction materials and fabrication techniques shall be proven to be durable.
4. The body shall be easily retrofitted to a new chassis should that need ever arise.

With these concerns in mind the following requirements have been established for the purposes of this specification:

The vehicle converter shall design and construct its own module bodies, and maintain an engineering staff at its manufacturing facility to handle any custom body changes that may be necessitated by this design. It is the intent of this purchaser to receive a finished product of the highest standards of quality available. Vehicle manufacturers who design and build their own bodies and who have the expertise of an engineering staff will possess a greater capacity as far as handling a custom project of this type than manufacturers who purchase their bodies from an outside vendor. Accountability and quality of the design and construction of the body are enhanced when the vehicle converter manufactures the body.

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Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## GENERAL BODY DESCRIPTION:

The construction process described within this specification will ensure that the body shall remain structurally intact. However, to achieve this level of quality and durability, the module body, including all doors, must be constructed correctly initially. This specification requires that the module body, including all doors, be built within a tolerance of one five-thousandths of one inch. To achieve this the vehicle manufacturer must use, as standard practice, precision computerized equipment such as found in Strippet machines and microprocessor controlled milling machines and chop saws. Use of precision equipment will ensure that all door openings, door handles and latches, body windows, and warning light assembly installation locations are of the correct size and square to the body.

Cutting done by hand, such as with a jigsaw, is not desired unless it involves the chassis, or unless a warning light assembly must be located in such a way that it depends on the layout of the finished vehicle. (E.g. when a light must be centered within a paint stripe since the exact stripe location will not be determined until the module is built and mounted.) In addition, utilization of computerized equipment will simplify the production of replacement body panels in the event of an accident since the computer can duplicate a given part exactly. This includes documentation of all body light locations.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## PAYLOAD REQUIREMENTS:

The vehicle payload shall meet or exceed that called for in the current KKK-A-1822 specification. The vehicle manufacturer shall, upon notice by this purchaser, provide a written statement from an independent engineer that the model being offered has met this set of criteria. Before delivery of the completed unit the manufacturer shall weigh the vehicle. A written statement of those weights shall be affixed to the inside of the street side front #1 compartment door. This purchaser reserves the right to have the finished vehicle weighed independently upon delivery. If it is found that the written statement of weight provided by the manufacturer is inaccurate beyond what may be reasonably explained as a slight difference in the calibration of the scales, then the vehicle will be rejected. It should be noted that this purchaser, while interested in attaining the greatest possible payload, is unwilling to compromise on the structural requirements of a strong, durable, and safe body. All bidders must understand these factors supercede concern over payload, and that the lightest body (greatest payload) will not necessarily be deemed sufficient to meet the stringent quality and safety requirements set forth herein.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## MODULE BODY CONSTRUCTION AND WARRANTY:

The module body shall be constructed per the following detailed specifications. Generally speaking the body shall be of all-aluminum construction. Aluminum is shown to reduce weight over several other materials. It also

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possesses anti-corrosion properties that are essential for a vehicle of this type. The exact aluminum material requirements are explained in further detail below. The choice of materials and the design shall allow the manufacturer to warrant the materials and workmanship of the module body for a period of fifteen (15) years as set forth in the warranty section of this specification. The manufacturers structural warranty shall specifically cover:

- The continued and correct alignment of both compartment and access doors.
- Seam or joint separation in door construction.
- Aluminum interior cabinetry.

The warranty shall be fully transferable to a new owner should the vehicle ever be sold. In addition, should the manufacturer bidding this proposal re-chassis the vehicle within the period of the initial structural warranty, then an additional 5 years shall be added to the remaining amount of warranty coverage left at the time of re-chassis.

This warranty shall be revalidated in five-year increments each time the body is mounted to a new chassis provided that the warranty has not expired, that this purchaser authorizes any necessary repairs, and provided that the original manufacturer performs the re-chassis.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **CORNER POST SUPPORTS:**

The body structure must be able to support the loaded weight of the vehicle in the unlikely event of a rollover. A structure is required that will enhance the safety of both patients and attendants in the event of an accidental collision. The foundation of a solidly built module body is the utilization of strong corner posts in both the sidewalls and the roof. A one-piece 90-degree radius post is required. The posts shall include a full length W shaped extrusion that forms a fully encased web inside the post for strength. This reinforcing member shall angle inward just before it joins the radius to form a small slot where the edges of the aluminum skin will be inserted prior to the final welding. Because the structural integrity of a body is derived from the corner posts, subfloor, and framework, corner posts that are a part of the exterior body skin (e.g. rolled corner posts) will not be considered, nor will corner posts which do not have an integral center reinforcement as part of the extrusion.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **CORNER POST STRENGTH:**

The corner post extrusions shall possess a minimum ultimate tensile strength of 27,000 psi (6063-T5).

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **ROOF EXTRUSIONS:**

The horizontal roof extrusions shall conform to the same construction description as the vertical wall

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extrusions. They will, however, include an extruded drip rail as a part of the one-piece posts. Because the drip rail is a part of the post itself there will be no seams between the rail and the body above the rail. In addition there shall be drip rails installed above all body doors that are not full height. These rails shall attach via a durable adhesive.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **WALL AND ROOF SKIN SUPPORTS:**

The exterior wall and roof skins shall be supported on the inside by 2" square tubing with .125" wall. These structural supports shall be strategically located at the load bearing points of the module body. The roof structural support beams shall be spaced on minimum 12" centers for adequate load support. Wall tubing of .125" thickness or less will not be acceptable.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **HORIZONTAL WALL SUPPORT:**

In addition to the vertical wall supports there shall be a horizontal beam, located in the beltline area, to provide additional protection in the event of a side body collision.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **GUSSET ENHANCEMENT:**

Gusset supports, made from 2" square tubing, shall be installed throughout the vehicle for added strength. Each gusset shall be a minimum of 5" long at its longest point. A minimum of twenty-four (24) of these gussets shall be welded into the vehicle support structure. Areas of installation shall include but not be limited to: all door openings, all body corners, and above all wheel wells.

Designs that utilize no gussets, or gussets of lesser material size or strength, are not acceptable.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **EXTERIOR BODY PANELS:**

The materials selected for the body skin have been chosen because of this vehicles expected heavy-duty cycle and the good wear characteristics that this material has shown in the field. The material shall be a minimum 5052-H34 alloy with an ultimate tensile strength of 38,000 psi. This material has been chosen because it is less prone to fail due to stress than other weaker materials such as 5052-H32 alloy.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_



**EXTERIOR BODY PANELS (PART 2):**

The thickness required for exterior body panels is:

- Side, front, and rear walls: .125"
- Ceiling and floor panels: .090"

Note: The roof shall be constructed with a single sheet of 5052-H34 .090" thick aluminum. This one-piece construction is preferred over a multiple piece design. The roof shall incorporate a 3/8" crown designed to allow water to drain.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

**FLOOR CONSTRUCTION:**

Floors that are uneven or are incapable of adequately supporting the load being carried on the vehicle are unacceptable. For that reason thin floor panels and/or a lack of floor supports are not desirable. To prevent buckling, sagging, oil canning or any other structural breakdown of the flooring system a detailed description of the required construction process is provided.

The body subfloor shall be constructed of .090" 5052-H34 aluminum. The floor, from the front to the rear and from curbside to street side shall be supported by a minimum 2" x 3" tubular beams with a .25" wall. The floor just behind the axle shall be supported by a minimum 1.5" x 3" tubular beam with a .25" wall. All beams shall be strategically located at the load bearing points of the floor and welded into place. The interior of this vehicle shall contain no wood or wood products of any kind. The subfloor, above the aluminum sheet shall be specially constructed to provide both acoustic and thermal protection for the patient interior. It shall consist of the .090" aluminum with tubular understructure as noted above. The underside of this area is to be sprayed with a sound reduction coating. In addition, a .125" damping pad, a .125" sound barrier sheet, and a .625" composite floor panel shall be installed prior to installation of the vinyl floor covering. The purchaser reserves the right to inspect the process proposed by the bidder and to make determinations regarding the acceptability of that process. The resultant subfloor shall have no organic, wood, or wood products and shall be guaranteed against rotting or water absorption for a minimum of fifteen years. It shall not support or attract mold or fungus.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

**SKIN TO SUPPORT ATTACHMENT:**

All exterior aluminum body panels shall be attached to the underlying structural supports via high performance polyurethane two sided tape. The tape shall have a polyurethane foam core for environmental resistance and an acrylic adhesive for a durable bond. The tape will be used as an insulating agent to hold the panels tightly against the structural supports, thus eliminating vibration and oil-canning. In addition to the tape attachment system, all panels shall be welded to structural members at the perimeters only. Welding in the center of the panels is not desired as the process will cause heat distortion of the body panels and lessen the overall quality of the finished appearance. Use of the tape, as described here, will eliminate heat distortion without damaging the structural integrity of the module body.

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Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## SKIN TO SUPPORT ATTACHMENT (PART 2):

Each body panel shall be welded to all horizontal frame members, including the roof extrusions. In addition, the panels shall be welded to the vertical corner posts. In the case of the roof, the perimeter of the one-piece roof sheet shall be welded. This method of attachment shall provide a total welding application to the entire perimeter of the body skin and a taped/insulating application to the interior surfaces of all walls. Methods of panel attachment that utilize rivets will not be acceptable.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## STRUCTURAL INTEGRITY VERIFICATION:

Structural integrity, as stated elsewhere in this specification, is of extreme importance to this purchaser. As such, it is required that the manufacturer maintain a program of simulated crash tests. The manufacturers Hygee sled testing program must be current and have been maintained on a continuous basis for a period of time not less than ten years. In addition, the sled testing shall have subjected a body, built to the above-written specifications, to a minimum of 30 G's in both side and frontal impact conditions. Neither photographs of vehicles that have been involved in accidents, nor statements or observations relevant to an accident, be it from a customer or a manufacturers representative, shall suffice as a substitute for this requirement. The sled testing must take place in a controlled environment whereupon meaningful engineering data can be gathered and applied to the structural design of the module body. Accidents that take place outside of this controlled environment do not yield any meaningful data. Therefore, real world accidents are considered anecdotal and cannot realistically be used by the manufacturer to judge the safety of a design.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## MODULAR DOOR DESIGN:

Door panel separation, dirt accumulation at seams, paint imperfections, misalignment, and even malfunctions whereupon the door cannot be operated have been observed in many styles of door construction. These problems, along with the expected rugged use of the vehicle doors, shall be eliminated with a good overall design and construction process. With these thoughts in mind the modular doors shall be constructed as follows:

## OUTER DOOR SKIN:

The door facing and edges shall be formed from a single sheet of aluminum. The aluminum used for the doors shall not be less than 5052-H34 alloy with an ultimate tensile strength of 38,000 psi. The material shall be .125" thick. All module doors shall be flush fit to the body side. The door panels must be welded at the corners.

Above section bid exactly as written: ☒  
Section not provided: ☐

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Bidder is offering an alternative to this section: \_\_\_\_\_

## INNER DOOR REINFORCEMENT:

Each door shall include an internal extrusion for added reinforcement. The extrusions shall extend around the entire perimeter of the door. Additional reinforcement shall be installed through the center of the door and around each window where applicable. In addition to the extrusions reinforcing each outer door pan, the extrusions themselves shall be reinforced through a dual joining method. First, each mitered corner, where the frame corners join, shall be fitted with a one-way solid aluminum insertable key. This key shall prevent the corner from pulling apart, and shall act as a solid aluminum internal gusset. Secondly, each corner where the frame joins shall be welded to further prevent any separation. The end result will be a rigid door that will not bend or flex and that will eliminate the other commonly seen structural defects described above.

Above section bid exactly as written: \_\_\_\_\_✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## INNER DOOR PAN:

An inner door pan shall fit flush with the inner edges of the door. Inner door pans that do not fit flush will have sharp or ragged edges exposed and will not be acceptable. The panels must be attached to the door structure with machine screws and nuts to prevent stripping. Sheet metal screws or rivets will not be accepted. Lastly, a closed cell cross-linked polyolefin foam tape shall be used beneath the inner door panels to isolate the panels from the door frames. This process will prevent door rattling.

Above section bid exactly as written: \_\_\_\_\_✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## DOOR SEAL:

All module doors shall incorporate an extruded rubber seal located around the perimeter of the door. The seal shall insert into a groove in the inner door extrusion. Seals that are installed around compartment openings will be easily torn by the movement of equipment across them. In addition, glue will not be permitted except in the case of a double door compartment. The requested design does not include a groove on the underlying door edge of a double door compartment. That edge alone will require an adhesive. Glue for all seals is not desirable because of increased replacement time and insufficient durability.

Above section bid exactly as written: \_\_\_\_\_✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## DOOR JAMB:

All doorjamb must be separate from the body skin and must be welded to the 2" x 2" tubular body frame members so as to ensure continued door alignment and proper latching. The compartment frame shall be designed in such a manner as to provide extra protection around the compartment openings. The reinforcement tube shall be at least 1" wide. For added strength, the frame shall be at least .188" thick where screws are attached.

Prior to door installation the doors shall be true fit to the doorjamb. The fitting, prior to installation, shall

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provide added assurance that the door aligns properly with the doorjamb.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **HINGING:**

All doors shall have full-length stainless steel hinges. The hinges shall be .070" thick and shall incorporate a .25" diameter pin.

All hinges shall have un-slotted mounting holes for an exact and permanent installation. Hinges that utilize slotted mounting holes are unacceptable because of the continued adjustments that they require.

There shall be an insulating material installed along the length of the hinge where the hinge meets the door frame to separate the stainless hinge from the aluminum body. This material shall be transparent so as not to be visible at any point while the door is being used.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **HOLD-OPEN DEVICES:**

The following door hold-open devices shall be installed:

- Compartment doors: Gas filled, 100-degree extension actuator
- Side access door: Gas filled, 110-degree extension actuator
- Rear doors: Cast Products grabber style devices

Spring-loaded devices are not desired because of their weaker holding capabilities and a lack of smooth door operation.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **DOOR HANDLES AND LATCHING SYSTEM:**

A door latching system is required that provides safety to all on-board personnel and security to all stored equipment. The patient area must be capable of being quickly secured. The following minimum features are to be designed into the module door latching system:

- All door handles shall be rugged automotive style handles that are near flush with the outer door panel. Each handle shall actuate a Nader rotary safety latch.
- The handle and latching system shall be designed by their manufacturer to accommodate electromagnetic activation. Paddle style or D ring style handles that must be retrofitted for this application are unacceptable.
- The entire exterior handle assembly shall be Tri/Mark Series 2100 cast metal that is chrome plated and buffed to a high luster.
- All doors shall have an exterior key lock.

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-All three patient area access doors shall include both interior and exterior latch activators. The rear doors shall have an activator installed on the outside of each door. The interior activators shall be located in a recessed pan on the door. A manual lock/unlock device shall be located within the pan. This pan shall be powder coated cast aluminum for extra durability and for ease of decontamination. No plastic products shall be used for this application.

-Exterior double door compartments shall include two exterior latching devices, one on each door.

The latching system shall be a proven system that has been subjected to the simulated sled tests as described elsewhere in this specification. Latching systems that have not been subjected to these tests will not have reliable data available as to installation and retention characteristics.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### **PATIENT AREA DOOR OPENINGS:**

#### REAR DOORS:

Two (2) doors shall be provided at the rear of the module body. The overall opening of the access to be a minimum of 58.3" in height x 46.75" in width. Both inside and outside door handles shall be installed on each rear door. Left rear doors that can only be activated from the inside are not acceptable.

#### SIDE DOOR:

One (1) side door shall be provided on the curb side of the module body. The opening shall have minimum overall dimensions of 78.6" in height x 30" in width.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### **MODULE TO CHASSIS MOUNTING SYSTEM:**

This purchaser requires a mounting system that provides a stable and durable attachment of the module body to the chassis frame. To accomplish this requirement the following body attachment method shall be used:

A minimum of (5) five Mounting platforms shall be attached along the outside of each chassis frame rail for a total of (10) ten. Each platform shall consist of (1) top plate of .375" thick steel and (2) side reinforcement plates made of .25" steel. There shall be a .375" full backing plate where the mount attaches to the frame rail. The plates shall be welded along all seams with a heavy continuous weld. The body substructure shall include a 1" by 3" solid aluminum tie down bar welded to each sub structure cross member. To complete the body to chassis attachment, a VI-Tech tuned mounting system shall be used. The elastomer mount shall be custom-tuned to the specific chassis type for vibration reduction, structure borne noise attenuation and to provide low profile, low frequency isolation necessary for ideal patient compartment conditions. Standard chassis furnished mounting donuts will not meet the requirements of this specification. The VI-Tech mount shall be attached to each platform by (2) .625" Grade 8 bolts with washers and locking nuts. The platform shall be

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attached to the chassis frame rail with (3) .625" diameter Grade 8 bolts with washers and locking nuts. The fail safe elastomer isolation mount shall then attach to the aluminum body tie down bar with a .75" diameter Grade 8 bolt, a washer, and a locking nut.

The VI-Tech mounting system must have been subjected to a documented Hygee dynamic frontal impact test of at least 30 G's to verify the integrity of the mounting system in the event of a serious accident. No exceptions to this requirement are permissible.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### INSULATION:

The patient area, including the doors, shall be insulated with 2" Technicon polyfiber for both thermal and acoustic insulation. The headliner area of the vehicle shall also include a barrier insulation of Reflectix material for increased protection.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### STREETSIDE FRONT COMPARTMENT (#1):

The compartment described above shall feature the following minimum dimensions:

Clear Door Opening:	18.7" wide x 80.6" high
Actual Compartment	21.4" wide x 83.6" high x 20"

This compartment shall be accessed through a single hinged door meeting the standards for door construction, hinging, and latching outlined within this specification. The compartment shall house the vehicle's primary O2 cylinder and shall be vented to the outside in such a way as to prevent moisture from entering the compartment. Under no circumstances shall vents be installed within the compartment door. The compartment itself shall be constructed as an individual box and welded into the body structural framing. The material used shall be .125" polished aluminum diamond plate that is continuously welded at all seams. The compartment shall include two strips of LED lights, one to either side of the compartment door, to provide lighting inside the compartment. Compartment have sprayed rubber lining. Door remains diamond plate. A separate compartment will be fabricated above the main compartment to house the vehicles compressor, suction pump and the vehicles required onboard electrical equipment.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### STREETSIDE INTERMEDIATE COMPARTMENT (#2):

The compartment described above shall feature the following minimum dimensions:

Clear Door Opening:	51.8" wide x 39.8" high
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Actual Dimensions: 55.5" wide x 43.0" high x 20"

This compartment shall be accessed through double hinged doors meeting the standards for door construction, hinging, and latching outlined within this specification. This compartment shall be vented to the outside in such a way as to prevent moisture from entering the compartment. Under no circumstances shall vents be installed within the compartment door unless they are required for airflow to equipment installed within this compartment. The compartment itself shall be constructed as an individual box and welded into the body structural framing. The material used shall be .125" polished aluminum diamond plate that is continuously welded at all seams. The compartment shall include two strips of LED lights, one to either side of the compartment door, to provide lighting inside the compartment. Compartment will have one adjustable shelf.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **STREETSIDE REAR COMPARTMENT (#4):**

The compartment described above shall feature the following minimum dimensions:

Clear Door Opening: 26" wide x 59.8" high  
Actual Dimensions: 31.4" wide x 63.0" high x 20"

This compartment shall be accessed through double hinged doors meeting the standards for door construction, hinging, and latching outlined within this specification. This compartment shall be utilized for storage of miscellaneous items as required by this purchaser. This compartment shall be vented to the outside in such a way as to prevent moisture from entering the compartment. Under no circumstances shall vents be installed within the compartment door. The compartment itself shall be constructed as an individual box and welded into the body structural framing. The material used shall be .125" polished aluminum diamond plate that is continuously welded at all seams. The compartment shall include two strips of LED lights, one to either side of the compartment door, to provide lighting inside the compartment.

Compartment to be sprayed with rubber lining door to remain diamond plate.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **CURBSIDE REAR COMPARTMENT (#5):**

The compartment described above shall feature the following minimum dimensions:

Clear Door Opening: 19.1" wide x 80.6" high  
Actual Dimensions: 23.6" wide x 83.6" high x 20"

This compartment shall be accessed through a single hinged door meeting the standards for door construction, hinging, and latching outlined within this specification. This compartment shall be utilized for storage of miscellaneous items as required by this purchaser. This compartment shall be vented to the outside in such a way as to prevent moisture from entering the compartment. Under no circumstances shall vents be installed within the compartment door. The compartment itself shall be constructed as an individual box and welded into the body structural framing. The material used shall be .125" aluminum that is continuously welded at all

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seams. The compartment shall include two strips of LED lights, one to either side of the compartment door, to provide lighting inside the compartment. Compartment will feature a fixed divider 10" from front wall, two adjustable shelves right side of divider, and Rok backboard strap, and sprayed with rubber lining.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

### **CURBSIDE FRONT COMPARTMENT (#6):**

The compartment described above shall feature the following minimum dimensions:

Clear Door Opening: 22.1" wide x 79.1" high

Actual Dimension: 26.7" wide x 82.1" high x 30" deep

This compartment shall be accessed through a single hinged door meeting the standards for door construction, hinging, and latching outlined within this specification. This compartment shall also be accessible from the vehicle interior front wall area.

This compartment shall be utilized for storage of purchaser-supplied jump kits and other miscellaneous items as required by this purchaser. The compartment itself shall be constructed as an individual box and welded into the body structural framing. The material used shall be .125" aluminum that is continuously welded at all seams. The compartment shall include two strips of LED lights, one to either side of the compartment door, to provide lighting inside the compartment.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

### **KKK-A-1822 CERTIFICATION LABEL:**

The vehicle shall have weight/payload, electrical load, and the current KKK-A-1822 certification stickers installed in the O2 compartment. Failure to provide these certification labels will be cause for rejection of the completed vehicle. Labels that are found to be falsified will also be cause for rejection of the completed vehicle. The purchaser reserves the right to request documentation showing that all required testing has been completed at the time of the bid opening. Failure to provide this documentation, if requested, will result in the bid being rejected without further consideration.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

### **SPECIAL BODY REQUIREMENTS:**

The requirements set forth in the following section of this specification represent items and features that may not be offered as standard by the bidder. If the bidder is unable to furnish any items listed in this section, then that inability must be listed and explained in the bidder's list of exceptions

### **GRIP STRUT STEP SURFACE IN SIDE ENTRY DOOR:**

A removable grip strut insert shall be installed in the side entry door step well. The insert shall be flush with the threshold.



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Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## 3" DROP SKIRT DESIGN:

The curbside skirt, forward of the rear wheel well shall be dropped three (3) inches. Two integral aluminum diamond plate steps shall be installed within the side access door step well for improved accessibility to the patient compartment. Under no circumstances shall this be accomplished by bolting an additional step to the step well. The design must be such that all steps are integral. The use of bolts, rivets, or any other type of fastener is prohibited.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## BODY MOLDING:

A chrome trim piece with rubberized insert is to be installed midway up the streetside of the module body.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## SOUNDPROOFING:

To insure good working conditions and to create a stable patient environment, the vehicle shall be manufactured with particular attention paid to sound control. The following process must be performed throughout the manufacturing cycle of the vehicle:

1. Underbody shall be completely sprayed with sprayable, non-flammable latex sound control coating
2. Body Interior walls, roofs and interior compartment walls shall be sprayed with sprayable non-flammable latex sound control coating
3. The interiors of all access and compartment doors shall be sprayed with sprayable non-flammable latex coating
4. The backs of all interior cabinets shall be wrapped in antiphon damping material
5. Door interiors are to be lined with polydamp intefoam extensional damping pad
6. The body structural tubes shall filled with non-resonating dampening material
7. Side stepwell areas are to be backed with PT Damping Pad
8. All walls shall be insulated with 2" Technicon polyfiber acoustic insulation. Headliners shall be double insulated with 2" Technicon Polyfiber and a Reflectix barrier.
9. A .125" damping pad, a .125" sound barrier sheet, and a .625" composite floor panel shall be installed prior to installation of the vinyl floor covering.
10. A chassis tuned VI-Tech mounting system shall be used to provide vibration reduction and structure borne noise attenuation.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

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## **STREETSIDE WHEEL WELL COMPARTMENT/PULL OUT DRAWER:**

A diamond plate compartment shall be constructed above the street side wheelhouse. The door of this compartment shall be affixed to a slide-out tray within the compartment. The slide-out tray shall be fabricated from aluminum diamond plate. The door/tray assembly shall include Accuride slides with a latching mechanism identical to those described for all exterior compartment doors so as to assure that the compartment will remain securely closed and, when necessary, locked. The door and compartment construction methods and materials utilized shall match those listed within the appropriate section of this specification.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **MODULE BODY HARDWARE:**

The following section lists hardware items that are to be installed on the vehicle body.

## **ELECTRONIC PRIVACY WINDOWS, DOORS:**

The patient area door windows shall include liquid crystal privacy control. When privacy is needed, a switch shall be activated to turn the windows solid so they cannot be seen through even at a very close distance. The windows shall return to clear with a second touch of the switch. All door windows to have fixed glass. Additional programming settings shall default the window settings to opaque with the battery switch off, and transparent when the battery switch is turned on. The switch shall be labeled "PRIVACY" and shall be the same type of switch as described in the electrical section of this specification.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **ELECTRONIC PRIVACY WINDOW, BENCH:**

The window over the squad bench shall include liquid crystal privacy control. When privacy is needed, a switch shall be activated to turn the window solid so that it cannot be seen through even at a very close distance. The window shall return to clear with a second touch of the switch. Additional programming settings shall default the window setting to opaque with the battery switch off, and transparent when the battery switch is turned on. The switch shall be labeled "PRIVACY" and shall be the same type of switch as described in the electrical section of this specification.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **SPLASH SHIELDS:**

Stainless steel splash shields are to be installed on the lower front face of the module body just aft of the cab access doors. These shields are to have a #8 mirror finish and shall match the height of the diamond plate corners guards that are to wrap around the lower corner posts on the side of the body.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

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## **RUBBER FENDERS:**

Polished stainless steel fender flares shall be installed above each wheel well opening. The mounting of these flares shall provide for no contact between the stainless steel fender, fasteners, and the aluminum body skin. This is done to eliminate any contact between dissimilar metals and the electrolysis that may result.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **RUBBER RAILS:**

Rubber lower body rub rails shall be installed on each side of the module body. Each rail shall be securely installed yet simple to remove and replace in the event of damage.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **REAR ACCESS DOOR HOLD-OPEN DEVICES:**

Cast Products "Grabber" style rear door hold-open devices shall be installed to maintain the rear access doors in the 'open' position. One loop shall be installed on each door, and the appropriate socket shall be installed on the body. These devices are to be chrome finish in lieu of Cast Products' standard finish.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **ELECTRIC LOCKS, ACCESS DOORS:**

Power activated door locks shall be installed on patient area access doors. Locks shall be activated by switches located at each patient area access door and in the front radio console. Locks may be overridden by a manual slide lever or by the door key.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **CONCEALED DOOR LOCK SWITCH:**

A concealed weatherproof switch shall be installed in the front grill to operate the power door locks specified above. The switch shall be wired to unlock only.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **DOOR LOCKS WIRED THROUGH OEM SWITCHES:**

The power door locks specified above are to be wired to the O.E.M. chassis door lock switches.

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Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **RECESSED LICENSE PLATE HOLDER WITH BACKUP LIGHTS:**

A Cast Products #C-3002 recessed license plate bracket shall be installed per the instructions listed below. The bracket will include lighting in the top to illuminate the license plate. It shall also include two (2) LED lights, one (1) on either side of the license plate, that will be wired to illuminate when the vehicle is placed into reverse gear.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **REFLECTORS ON ENTRY DOORS:**

Red reflectors shall be installed on the inside on the patient area doors.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **DOOR REFLECTION:**

Red Scotchlite strips, 2" x 12", shall be installed horizontally across the top of each entry door. This material is in addition to the reflectors listed above.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **RUBBER MATTING IN EXTERIOR COMPARTMENTS:**

Black rubber matting material shall be cut to size and installed on the bottoms of all exterior compartments and shelves. The material shall feature integral ridges to help equipment to stay in place.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **RUBBER-COVERED WALLS IN BACKBOARD COMPARTMENT:**

The walls of the backboard compartment shall be covered with self-adhesive textured rubber matting to protect the walls and the equipment stored in this area from any damage.

Color: Gray

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **GRIP LOCK TRIM-EXTERIOR SHELVES AND DIVIDERS:**

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Grip-Lock trim material shall be installed on the faces of all exterior compartment shelves and dividers where applicable.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### **SPECIAL INSTRUCTION, MODULE BODY HARDWARE:**

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#### **PAINT AND STRIPING:**

An acrylic urethane paint process is required on the module body. This process shall extend to the chassis if the vehicle converter must perform paint or body work to the chassis. The acrylic urethane process is required so that the highest possible gloss will be provided. Acrylic urethane possesses superior color and luster retention characteristics when compared to other types of paint. In addition, an acrylic urethane process provides a higher resistance to chemical sprays, salt sprays, humidity, and temperature changes. Lastly, this process, given the expected life of the vehicle and its heavy-duty cycle, will best resist chipping. The final paint application shall be free of material application imperfections such as orange peel, streaking, or a dull finish. Once painted, the vehicle shall be inspected under a black light to bring any small imperfections, not seen with the naked eye, to attention. Any such imperfections shall be repaired prior to the conclusion of the paint inspection process. The final application shall provide a high gloss on all body surfaces including the roof and excluding the underside.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

#### **PREPARATION:**

To produce an acceptable paint finish, the following paint process must be used:

All body doors and hardware must be removed prior to any wash, prime, or final paint application. All material impurities and oils must be removed from the bare aluminum body. The entire module body, excluding the underside, will have all visible welds ground down and all material imperfections filled. All holes (e.g. for hinge mounting, etc.) shall be plugged at this stage to prevent any cleaning agents from entering the module body framework. The body shall be prepared for paint by spraying with a phosphoric acid-based cleaner to remove dirt and oil and to etch the body for superior paint adhesion. The application of the cleaner shall be followed with a water rinse. Next, a chromium-free titanium composite coating shall be applied to the body to enhance paint adhesion and to prevent corrosion. The body shall be rinsed with de-ionized water to prevent salts from accumulating on the surface. The body will, then, be baked dry prior to the application of three (3) coats of Sikkens Colorbuild primer. The primed body shall be finish sanded and made ready for the final paint application. All module doors, though handled separately from the body, shall undergo the same process as described above.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

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## PAINT MANUFACTURER'S INSPECTIONS:

The manufacturer shall maintain an outside paint audit system. As part of that audit the paint manufacturer shall regularly receive and test sample paint panels that are painted along with module bodies. The paint manufacturer shall also provide regular onsite inspections of the vehicle manufacturers paint process to assure a consistent level of quality. Audit reports from these inspections shall be provided to management.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## ADDITIONAL CORROSION PREVENTION MEASURES:

All locations where fasteners penetrate the outer skin of the module body shall be coated with ECK anti-corrosion agent. In addition, all fasteners that penetrate the outer skin of the module body shall be treated with an anti-corrosion agent to assure the maximum protection against vehicle corrosion and electrolysis.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## NON-METALLIC HOLE INSERTS:

All locations where light heads and fenders attach to the aluminum body shall utilize threaded Nylon inserts to isolate the fasteners from the aluminum module body skin and structure. This practice, along with the other measures described above, shall act to minimize the threat of electrolysis.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## PAINT WARRANTY:

The paint warranty provided by the converter must meet all warranty standards as set forth elsewhere within this specification. At a minimum this warranty will be 4 years/48,000 miles. The warranty MUST NOT be prorated in any manner. Bidder must submit a manufacturer's paint warranty certificate with the bid. Failure to do so will result in automatic rejection of the bidder's proposal.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## CHASSIS PAINT COLOR:

The chassis shall be painted by the ambulance converter with Sikkens Autocryl acrylic urethane paint. The paint shall meet the following requirements:

- Red ,match Sikkens FLNA 3225, and Black match autocryl 101.
- Chassis to be red from the bottom of the windows down.
- Hood to be red, Window pillars and chassis roof to be black

Above section bid exactly as written: ☒

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Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **BODY PAINT COLOR:**

The final paint application to the vehicle body shall be made with Sikkens Autocryl acrylic urethane paint.

Red ,match Sikkens FLNA 3225, and Black match autocryl 101.

Module to be red from 1" below the red Flashers down.

Roof an upper portion of body to be black

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **VEHICLE STRIPING:**

An 8" wide Scotchlite reflective beltline stripe shall be applied to the vehicle. The successful bidder shall provide, prior to any material application, CAD drawings that depict the required stripe as it will appear on the finished vehicle. The color shall be as follows:

Color: Black

Material: Scotchlite

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **BLACK PIN STRIPE:**

Install at paint break on chassis and on body.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **CABINET DOORS, PLEXIGLAS, HANDLES AND HARDWARE:**

Information relative to interior door materials, handles, and hardware is provided below:

### **HANDLES FOR PLEXIGLAS DOORS:**

All interior sliding Plexiglass doors are to include extruded pull handles.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

### **LATCHES FOR HINGED DOORS:**

The hinged doors within the patient compartment are to utilize Southco Stainless Steel flush-style latches as noted below. These latches shall feature recessed pull ring style handles. The latches shall be both positive (mechanical latching) and passive (latches automatically).

Above section bid exactly as written: \_\_\_\_\_ ✓

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Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## PLEXIGLAS COLOR:

The Plexiglas interior cabinet doors shall be a light gray tint.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## INHALATION PANEL:

To prevent contamination of the inhalation panel the panel shall be fabricated using no wood or wood based products. The material used shall be an aluminum composite material. This material shall not absorb liquids and shall not attract bacteria, molds or fungi. The material is to be covered with Formica material in a color matching that required within this document.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## AVONITE COUNTER TOP WITH COVED INTERIOR EDGES:

The patient area countertop(s) shall be constructed of Avonite solid surface material. The countertops shall incorporate a 1" retention lip around the perimeter of the material. The area where the lip meets the horizontal surface of the counter shall be rounded and smooth as opposed to a 90 degree mating of materials. A radius cove molding shall be installed at either end of the countertops where the material meets the cabinet wall. The rear edge of the material, adjoining the side wall of the vehicle, shall be sealed with silicone. In addition, any and all areas that require seams due to manufacturing processes shall be sealed with silicone. This material shall be uniform throughout so that scratches can be buffed out without causing adverse effects on the appearance of the material. The Avonite color required is noted below:

Color: BRAZILIAN BLUE K3-8100

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## INTERIOR COLORS, UPHOLSTERY AND SEATING:

The patient area interior design is specified below:

### INTERIOR COLOR SCHEME:

The following materials/colors shall be installed in the vehicle interior:

Floor:	LONCOIN FLECKSTONE SAPPHIRE #152
Risers:	WILSONART INDIGO #D379-01
Walls:	WILSONART WHITE #1570-01
Cabinets:	WHITE PAINT



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Upholstery: SPIRIT MILLENIUM IMPERIAL BLUE #US432  
Countertop: AVONITE - BRAZILIAN BLUE #K3-8100  
Accent Stripes: WILSONART COPPER DUST #L6432

Note: The flooring material and the upholstery are to be treated with an antimicrobial agent.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## INTERIOR STORAGE AREAS:

All interior storage cabinets, including the interior of the squad bench, shall be painted for ease of cleaning. Under no circumstances shall carpet be used within these storage cabinets as it is impossible to decontaminate. The paint color is listed within the "Interior Color" section of this specification. The paint shall be treated with an antimicrobial agent.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## RISERS:

The interior of this vehicle shall be constructed without the use of wood or wood-based products. The risers shall be constructed of a reinforced structural composite consisting of a high density polypropylene core laminated between two layers of .024" aluminum skin. The composite shall then be covered by a Formica laminate to match the interior of the vehicle. The finished riser panels shall be impervious to water or other forms of moisture and must be guaranteed against rotting or decomposition.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## ATTENDANT SEAT:

An attendant's seat base shall be fabricated from aluminum and shall be installed in a position at the head of the cot. The base shall house the vehicle's heat/AC unit as described in that section of this specification. The material shall be perforated to promote airflow to the unit. An EVS bucket type seat with a built-in child safety seat and 3-point occupant restraint shall be installed on the seat base in the rear-facing position. The seat shall be upholstered to match the vehicle interior, and shall be capable of adjustment from front to rear. Under NO circumstances shall this seat be installed in any manner that allows it to swivel due to the lack of stability and weaker structural characteristics inherent in such designs. The entire seating assembly, as described here, shall be subjected to a Hygee sled test of at least 30 G's to test the structural integrity of the design, as well as seatbelt retention characteristics, in order to assure a certain level of safety for the vehicle occupants.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## SEAT BELTS:

## Pelham, NH Fire Department

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Each seating position shall include seat belts as follows:

Attendant seat: Three point seat belt.  
CPR seat: Three point seat belt with removable third point latch.  
Ends of bench: Three point seat belt with removable third point latch.  
Center of bench: Two point seat belt.

Each seat belt shall have been tested to verify its latching capabilities and performance as well as the extent to which it allows movement by the "spooling effect" within the retractor. Those tests shall verify that this spooling effect allows less than three inches (3") of belt travel before latching.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### **ALUMINUM INTERIOR CABINETS, STREET SIDE:**

This specification requires an all aluminum modular cabinet design. Aluminum, a minimum of .063" thickness, is required over wooden cabinetry due to its lighter weight, greater durability, and the ease with which it can be decontaminated. The main cabinet wall shall be of modular construction. All individual cabinets shall be of welded construction. To insure the safety of patients and attendants in the rear of the vehicle, the main cabinet wall installation shall have been tested to a minimum frontal impact of 30 G's per the requirements of the Safety Certification section of this specification. The main cabinet wall may not be constructed of any wood or wood product. Wooden cabinetry can warp, expand, contract, splinter, separate, or crack. Wood will also harbor blood borne pathogens whereas aluminum can be easily cleaned.

Aluminum will remain stable and securely mounted (no fibers to compress) over many years and miles of continuous service. For these reasons, wooden cabinets, even when laminated with another material, will not be acceptable. Bids received that utilize any material other than that which is specified above will be considered non-responsive and will be rejected without further consideration.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### **INTERIOR CABINETRY, STREET SIDE**

All of the aluminum cabinetry within the vehicle shall be of welded construction. Methods of cabinet construction that utilize rivets or adhesives of any type will not be considered.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### **ALUMINUM CABINET WARRANTY:**

The all aluminum cabinet construction, as described within this section, shall be warranted against any structural defects for a period of time not less than 15 years. This warranty shall be stated within the manufacturer's structural warranty document, and shall not be subject to any mileage limitations.

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Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## INTERIOR OCCUPANT PROTECTION:

For the safety of the attendants working in the patient area, the vehicle shall be equipped with an interior occupant protection system incorporating an emergency inflatable airbag system at both the attendant and the CPR seat locations. In the event of a side impact rollover collision, the bags shall be triggered by an electronic sensor to inflate and protect the occupants against severe head strikes typical of such collisions.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## ATTENDANT'S SEAT PROTECTION:

The attendant seat location shall be protected by an inflatable head cushion technology as well as a unique inflatable tubular system to prevent the attendant from impinging into the danger zones of the inhalation area.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## CPR SEAT PROTECTION:

The CPR seat location shall be protected by a combination of an inflatable tubular system at the forward side to protect against entry into the inhalation area as well as a system of progressive resistance head protection cushions.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## TESTING:

All airbag seating locations shall have been tested with a variety of occupant sizes. Those tests shall include Hybrid III fully instrumented test mannequins including 5% child (115 lbs.), 50% female (163 lbs.), and 95% male (195 lbs.). Testing shall have included at least fourteen (14) fully instrumented destructive dynamic roll crashes and an additional six (6) side impact destructive crashes. Roll crash testing shall be performed at 17-19G's while side impacts shall be approximately 27G's.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## CERTIFICATIONS:

The vehicle must have been certified as compliant to standards ECE R29, SAE J2420, and SAE J2422. The bidder must show evidence that their service facility is trained and certified to service or to replace the airbags should the need arise. Such certification shall be attached to the proposal (NO EXCEPTIONS).

Above section bid exactly as written: ✓

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Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **ADJUSTABLE VERTICAL DIVIDERS:**

Adjustable shelf tracks shall be recessed into the upper and lower walls of the cabinet(s) listed below. Plexiglas dividers shall be fabricated and shall fit vertically into the recessed tracks. The dividers shall be adjustable within the track and held into position with cushioned track shelf supports. Note the quantity and location information provided below: Install 6 dividers full height, with no middle shelf.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **RESTOCKING CABINET FRAMES, STREETSIDE:**

The 3 top street side cabinet(s) shall feature sliding Plexiglas doors that hinge upward for cleaning and restocking of the cabinet in addition to the normal sliding mode of operation. The extruded door frame shall be installed at the top with a full length piano hinge. This will allow the entire frame to flip upwards providing complete access to the cabinet. The door and frame shall be held in the "up" position with two gas-charged cylinders, and in the down position with two sliding dead bolt type latches. The remainder of the door construction shall adhere to the appropriate section of this specification.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **ELECTRIC SIMPLEX LOCK:**

A Kaba Mas electrically activated lock shall be installed on the designated drug storage cabinet.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **LIFE PACK BRACKET:**

A swivel bracket shall be provided for a purchaser furnished Physio-Control LifePack 12. The bracket shall be installed as follows.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **WASTE DISPOSAL:**

An aluminum cabinet shall be installed on a tip-out door in the main cabinet wall per the instructions listed below. This cabinet will house a sharps/waste disposal location. Both the sharps and the waste containers shall be easily removable from this area. The tip-out door will include a Southco latching device to hold it in the 'closed' position.

# Pelham, NH Fire Department

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Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **INTERIOR CABINETS, CURB SIDE:**

All of the cabinets located within this section shall meet the same standards for construction, design, materials, and testing as designated in the previous section. Failure of the bidder to provide cabinets meeting these criteria shall be grounds for rejection of the bid as being non-responsive.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **SQUAD BENCH STORAGE:**

A storage area, fabricated from .125" 5052-H32 aluminum, shall be installed beneath the squad bench cushions. This storage area shall be painted and trimmed per the cabinet construction section of this specification. Access to this area shall be gained by raising the bench cushion. This area shall be as large as possible given the design mandates present in the federal 'K' specifications, and the presence of the wheelhouse directly beneath this area. Note that storage areas made of wood, whether or not they are laminated or otherwise covered with another material, will not be acceptable.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **SHARPS CONTAINER:**

*Install Sage Model 8516-1H locking sharps container. Location will be determined during plant inspection of Pelhams' ambulance.*

Above section bid exactly as written. ☒  
Section not provided. ☐  
Bidder is offering an alternative to this section. ☐

## **DRY ERASE BOARDS:**

One fixed dry erase board shall be provided for the curbside bench window. The board will incorporate backrest cushions on its outer surfaces.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **BENCH END RESTRAINT:**

There shall be a barrier constructed at the head of the squad bench that will provide a "cargo net style" restraint which, when working in conjunction with the above three point belt system will assist in securing the occupant in the event of a rollover collision.

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Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **BENCH END RESTRAINT:**

There shall be a barrier constructed at the head of the squad bench that will provide "cargo net style" restraint which, when working in conjunction with the above three point belt system will assist in securing the occupant in the event of a rollover collision. This restraint is used in conjunction with a dual vertical bottle storage as described below.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **BENCH HOLD OPEN:**

24lb. Gas piston style hold-open devices shall be installed on the flip-up squad bench cushion. These devices will provide for smooth and simple operation. For that reason substitute hold-open devices, such as ratchet style devices, will not be acceptable.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **BENCH HOLD DOWN:**

Paddle style latches shall be installed on each flip-up bench cushion to hold the cushions in the 'closed' position. The operation of these latches shall be passive and shall required intentional unlatching in order to raise the squad bench cushion. Each latch is to be flush mounted in the face of the squad bench riser.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **SQUAD BENCH EDGE PROTECTION:**

An aluminum angled trim piece shall be installed along the bottom edge of each bench cushion. Each piece shall be bent to follow the contour of each cushion on the horizontal plane. These trim pieces shall provide added protection for the upholstery against extensive wear.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **TIP OUT WASTE DISPOSAL:**

A tip out trash door with removable container attached will be installed in the forward portion of the squad bench facing the aisle. A closeout will be installed inside the bench so the area is closed off to in bench storage.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_

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Bidder is offering an alternative to this section: \_\_\_\_\_

## **BENCH CEILING CABINET:**

A cabinet shall be installed at ceiling level over the full length of the squad bench. This cabinet is to be fabricated from .063" 5052-H32 welded aluminum. The interior of the cabinet shall be painted per the cabinet construction description listed elsewhere within this specification. The cabinet is to be accessed through hinged Plexiglas doors that are held in the 'open' position by gas piston hold-open devices. This cabinet is to be a maximum of 9" H to allow enough clearance between the bottom of the cabinet and the top of the seat below to meet KKK-F requirements.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **FRONT WALL CABINET:**

A cabinet shall be provided on the front wall of the patient area just inside the side access door. This cabinet shall run from floor to ceiling and shall be fabricated from .3003-H14 welded polished aluminum diamond treadplate. The cabinet shall be anchored at both the top and bottom for stability. This stability must have been tested through a Hygee sled test of at least 30g's. Under no circumstances shall this cabinet be welded to any module body structural member. This storage area shall be used to house purchaser supplied bagged equipment and supplies.

Shelf Quantity: 3 (.125" thick material)

Shelf Type: 1 fixed, 2 adjustable

Shelf Liner: rubber matting

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **GLOVE STORAGE ABOVE FRONT WALL CABINET:**

Storage for (2) glove boxes shall be provided in the header above the front wall cabinet. The face of the storage area will be covered in matching interior vinyl and include openings for access to each storage area. The header will be hinged for restocking or removal of glove boxes.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **FRONT WALL CABINET HINGED DOORS:**

Access to the front wall cabinet, as described above, shall be provided per the description below.

Door Type: Hinged Plexiglas

Quantity: 4 (Equal size)

Locate: Front wall cabinet

# Pelham, NH Fire Department

Latch Style: Southco

Note: The hinges on the front wall cabinet shall be polished stainless steel stamped from Grade 304 stainless steel to prevent corrosion.

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

## SPECIAL INSTRUCTION, FRONT WALL CABINET:

Non walkthrough vehicle. Install a cabinet with 4 equal solid hinged doors that are lockable with a key and one adjustable shelf below pass thru window counter. Slide out tray for the temperature control unit.

## TEMPERATURE CONTROL UNIT

Install Medi-Fridge Safe Temp4L

Precision Thermo-Electric Mini-Fridge .

Includes a Digital Thermostat & Controller with LED temperature display, and lock.

Location to be determined at post bid meeting.

Above section bid exactly as written. ☒

Section not provided. ☐

Bidder is offering an alternative to this section. ☐

## MODULE INTERIOR ACCESSORIES AND TRIM:

The following section addresses interior accessories and trim features. All installation locations, as noted below, shall be strictly adhered to by the bidder. The items in this section will directly influence the quality of care given to the patient, as well as the safety of the attendants. For these reasons the installation locations listed below must be met without exception.

### IV HOOKS:

Cast Products recessed swing-down IV hangers shall be installed per the instructions listed below. These hangers are to be near flush mounted into the patient area ceiling to reduce their interference with the walkway when not in use. The arms of each hanger shall be rubberized so as to reduce the possibility of injury that may occur if contact is made with them. This style IV hanger shall be sufficient to meet Federal KKK-1822-E.

Quantity: 4

Locate: 2 Mid body over squad bench

Locate: 2 Mid body over cot

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐



# Pelham, NH Fire Department

## ANTI-MICROBIAL COATED COT CEILING GRAB RAIL:

A grab rail shall be installed in the ceiling as noted below. This rail is to be constructed of stainless steel. Integral stanchions shall be welded into place at fixed points along the length of the rail for attachment to the ceiling. The rail shall attach through aluminum mounting plates that are welded to the module roof structure for strength and durability. Because contamination occurs most often as a result of contact, this feature must be treated with an anti-microbial agent consisting of an inorganic ceramic coating embedded with silver ions. This coating shall be effective against a broad range of microbes including bacteria, molds, algae and fungi.

A single 6' rail  
Locate: Over cot, streetside,

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## ANTI-MICROBIAL ANTI-SLIP BENCH CEILING GRAB RAIL:

A grab rail shall be installed in the ceiling as noted below. This rail is to be constructed of stainless steel. Integral stanchions shall be welded into place at fixed points along the length of the rail for attachment to the ceiling. The rail shall attach through aluminum mounting plates that are welded to the module roof structure for strength and durability. Because contamination occurs most often as a result of contact, this feature must be treated with an anti-microbial agent consisting of an inorganic ceramic coating embedded with silver ions. This coating shall be effective against a broad range of microbes including bacteria, molds, algae and fungi. For grip safety the rail is to have a cross-hatched pattern cut into the stainless steel.

Size: 6', over cot bench side

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## PATIENT AREA DOOR GRAB RAILS:

Angled door handles shall be installed on the interior door panels of each access door. The handles shall be one-piece and shall be constructed of stainless steel. The handles shall feature smooth radius corners and flange mounts at each attachment point. Because contamination occurs most often as a result of contact, this feature must be treated with an anti-microbial agent consisting of an inorganic ceramic coating embedded with silver ions. This coating shall be effective against a broad range of microbes including bacteria, molds, algae and fungi.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## COVE MOLDING:

A radius cove molding shall be installed at all areas of the floor that may have seams.

Above section bid exactly as written: ☒  
Section not provided: ☐

# Pelham, NH Fire Department

Bidder is offering an alternative to this section: \_\_\_\_\_

## PROTECTIVE EDGE TRIM:

The 90 degree edges of the squad bench, the attendant seat riser, and the front wall cabinet shall be protected by a chamfered trim angle.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## CEILING:

The patient area ceiling shall be constructed of a bright white Alcopla aluminum composite material consisting of a polyethylene core laminated between two sheets of coated aluminum. The headliner shall be smooth, impervious to moisture, easy to clean and durable. It shall have the same rate of expansion and contraction as the aluminum body. Headliner that is padded or upholstered in any way will not be considered, nor will any headliner made of wood or wood products due to the lower degree of durability and the risk of contamination inherent in such materials. Plastic, fiberglass or ABS headliner material is not acceptable due to the cracking commonly caused by the differing rates of expansion. Lastly, the headliner material shall be treated with an antimicrobial agent. The bidder, at the request of the purchaser, may be required to submit proof of the application along with a detailed description of the agent used and the types of organisms that it affects.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## FIRE EXTINGUISHER:

Two (2) 5# ABC fire extinguishers, with mounting brackets, shall be supplied on the completed vehicle per the notations below.

Note: Ship Loose

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## PATIENT AREA RADIO SPEAKERS:

Two (2) speakers shall be installed in the patient area. The speakers shall include a volume switch that is integral to the rear action area switch panel. The volume shall be controlled by individual up/down switches of the type described in the electrical section of this specification.

Speaker Location: Module ceiling

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## COT MOUNTS AND ACCESSORIES:

# Pelham, NH Fire Department

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The following cot mounting hardware shall be installed per the instructions listed below. The installation shall meet the hardware manufacturer's installation guidelines. In addition, the installation process shall have been subjected to Hygee sled testing as outlined elsewhere within this document.

Does your installation meet the sled testing requirements?

Above section bid exactly as written:       ✓        
Section not provided:                       
Bidder is offering an alternative to this section:           

## **COT MOUNT:**

One (1) Ferno Washington #175-4 cot mount shall be installed per the instructions and recommendations of the hardware manufacturer. The cot mount shall be installed for a dual position. The cot mount installation must meet all requirements for cot retention as set forth in the current federal specification.

Above section bid exactly as written:       ✓        
Section not provided:                       
Bidder is offering an alternative to this section:           

## **FRONT LIGHTBAR FOR 96" BODY:**

The lightbar specified below shall be installed per the lightbar mounting instructions that follow. This lightbar shall be a maximum of 88" wide for installation with a 96" wide body.

Whelen Freedom all super LED light bar with 795H self contained LED IR Opticom and Clear lens

Above section bid exactly as written:       ✓        
Section not provided:                       
Bidder is offering an alternative to this section:           

## **ELECTRICAL EMERGENCY VISUAL WARNING SYSTEMS:**

Warning lights are to be installed per the following instructions:

### **HEADLIGHT FLASHER:**

The vehicle headlights shall alternately flash through the activation of the appropriate switch on the cab control console. This feature shall be accomplished through a solid state flashing device that is a part of the primary electrical control board.

A programmable phase control shall be built into the system board to allow alteration of the light flashing sequence. The flash pattern must be capable of being switched from an alternating pattern to a pulsating pattern.

The phase of "on" time can be programmed to flash when desired for an effective light pattern. For instance: If the left grill light is flashing "on", the right flashing headlight is desired to be "on". Different flash patterns may be achieved through programming.

Above section bid exactly as written:       ✓        
Section not provided:

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Bidder is offering an alternative to this section: \_\_\_\_\_

## **L.E.D. WARNING LIGHTS WARNING LIGHT:**

A 500 series TIR6 LED light with chrome mounting flange shall be installed on the inner door panels of the rear facing compartment doors. The light shall flash when the compartment door is open and the vehicle warning lights are activated.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **TIR6 WARNING LIGHTS ON ACCESS DOORS:**

Install TIR6 L.E.D. lights on the side and rear patient area access door interior door panels. L.E.D. lamps shall be used due to their "cold" operating temperature, low amp requirement, and long life expectancy. The lights are to provide additional lighting to warn traffic and pedestrians of a stationary emergency vehicle with open access doors, and to provide additional safety for the attendants.

Status: Flash

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **LIGHT, AMBER SUPER L.E.D., M9 SERIES, CLEAR LENS**

(2) Whelen M9 Series amber super L.E.D. lighting shall be installed curbside rear at window level, under the red M9 LED lights. All lighting is to include the optional chrome flange.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **L.E.D. RED SUPER LED LIGHTING, M9 SERIES, CLEAR LENS**

10 Whelen 900 Series red super L.E.D. lighting shall be installed at the KKK required locations and rear face at lower window level. All lighting is to include the optional chrome flange.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **WHITE L.E.D. KKK LIGHT, M7 SERIES, CLEAR LENS**

A Whelen M7 Series white L.E.D. light assembly shall be installed below front condenser to function as a KKK light. The light is to include the optional chrome flange.

Quantity: 1  
Lens Color: White

# Pelham, NH Fire Department

Locate: Center of body front face

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **AMBER SUPER L.E.D. KKK REAR LIGHT, M7 SERIES, CLEAR LENS**

A Whelen M7 Series amber super L.E.D. light assembly shall be installed as noted below to function as a KKK light. The light is to include the optional chrome flange.

Quantity: 1  
Lens Color: Amber  
Locate: Centered above rear doors

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **4E SERIES INTERSECTION LIGHT HOUSINGS:**

Whelen #4IITK1 housings shall be provided and installed for use with the specified Whelen intersection lights.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **INTERSECTION LIGHTS: CLEAR LENS**

One pair of Whelen M4 series red super L.E.D. light assemblies shall be installed. One light shall be installed on each chassis front fender. Each light is to include the optional chrome flange.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **GRILLE LIGHTS: CLEAR LENS**

Two pair of Whelen M7 series red super L.E.D. light assemblies shall be provided and installed on the left and right sides of the chassis grille. The installation shall be done in such a way as to not impede airflow through the chassis manufacturer's O.E.M. grille. Aftermarket, modified, or improvised grille work will not be acceptable.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **GRILLE LIGHT HOUSINGS:**

Two pair of Whelen 7GILKT1 angled housings shall be provided and installed for use with the specified grille lights.

Above section bid exactly as written: ☒

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Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## AUDIBLE EMERGENCY WARNING SYSTEMS:

The following audible emergency warning features shall be installed on the vehicle:

### AIR HORNS:

One pair of 25" Grover Stuttertone air horns shall be installed and activated per the information provided below by the chassis O.E.M.

Trumpet Location: One on each side of the hood

Switch Location: Steering wheel and passenger's side of dash

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

### SIREN:

The vehicle manufacturer shall supply and install a Whelen 295HFSA1 siren as noted below.

Siren Location: Cab Radio Console

Quantity: 1

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

### SIREN INSTALLATION:

The electronic siren specified above shall be installed in the designated location and wired for operation through the speakers noted below.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

### SIREN SPEAKERS:

SA3803 speakers shall be installed on the chassis per the instructions listed below. The speakers shall be wired for operation through the siren listed above.

Quantity: 2

Locate: Mounted through bumper

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

# Pelham, NH Fire Department

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## **SIREN SPEAKER INSTALLATION:**

The siren speakers specified above shall be bumper mounted and wired for operation.

Above section bid exactly as written:       ✓        
Section not provided:                       
Bidder is offering an alternative to this section:                     

## **LIGHTING:**

Lighting information is noted below:

## **SIDE BODY RUNNING LIGHTS:**

One Whelen M7 series LED light with a red lens and a chrome flange shall be installed on each side of the vehicle towards the rear of the body. These lights shall function as both running lights and turn signals.

Above section bid exactly as written:       ✓        
Section not provided:                       
Bidder is offering an alternative to this section:                     

## **EXTERIOR COMPARTMENT LIGHTING:**

The compartment lighting for the exterior compartments noted above shall consist of LED lighting strips. Strips of LED lights shall be installed on each side of the compartment opening on the inside of the door jamb and shall direct the light back into the compartment. These light strips shall fit securely into clips installed in this location. These strips shall be semi rigid. Please note that rope lighting is not an acceptable alternative to this requirement.

Above section bid exactly as written:       ✓        
Section not provided:                       
Bidder is offering an alternative to this section:                     

## **ICC MARKER LIGHTS:**

The required ICC marker lights for this vehicle are to be LED. Bidder should note that some lightbars have ICC lights already installed. In that case those lights shall be installed in lieu of the lights described here unless denoted within this document.

Above section bid exactly as written:       ✓        
Section not provided:                       
Bidder is offering an alternative to this section:                     

## **RUNNING BOARD LIGHTS, WHELEN PAR 16 L.E.D.**

Clear Whelen Par 16 round L.E.D. lights mounted in chrome flanges shall be installed in the front of the module body. Locate in the stainless steel stone guard above the running boards. The lights shall be wired to the chassis door switch and illuminate the step/running board.

Above section bid exactly as written:       ✓        
Section not provided:                       
Bidder is offering an alternative to this section:

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## SCENE LIGHTS:

(4) Whelen M Series LED Scene Lights shall be installed in the upper corners of each side of the module. Each light shall include the optional chrome flange. These lights shall be activated by right and left side switches located within the front electrical control console. Additional means of activation, if any, are listed in the electrical section of these specifications.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## LOAD LIGHTS:

(2) Whelen M Series Scene Lights shall be installed OVER THE REAR DOORS. Each light shall include the optional chrome flange. These lights shall be activated when the rear doors are opened, and by a switch located within the front electrical control console. Additional means of activation, if any, are listed in the electrical section of these specifications.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## TAIL LIGHTS:

Whelen M6 Series L.E.D. tail/brake, back-up, and turn signal lights shall be installed on the rear of the module body stacked on the bottom sides. All six of these lighting assemblies shall include the optional chrome flange.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## ELECTRICAL POWER GROUP:

The vehicle electrical system is extremely important to this purchaser. The requirements for the onboard electrical system are noted in detail below. The bidder's electrical system, should it deviate in any way from that which is specified, shall be explained in great detail. This explanation shall present facts relative to the bidder's system only. The bidder shall not draw any comparisons between the electrical system being offered, and the system being specified.

Any comparisons or decisions regarding one system versus another will be made solely by the purchaser and shall be based entirely on the written description as provided by the bidder at the time the proposal is submitted. All decisions made by the purchaser as to the merits of one system over another will be final and will not be subject to discussion, either verbal or written, at any point.

## CONVERTER ADDED ELECTRICAL SYSTEM STANDARDS:

The converter added electrical system must meet all current KKK ambulance design standards. The converter added electrical system has proven to sometimes be the most complex and troublesome system on this type of vehicle. A system is desired that is simple in design so that electrical problem diagnosis and repair time can be minimized. The electrical system must be thoroughly engineered and manufactured to allow simple personnel operation. Finally, the system must be designed so that the probability of experiencing dead batteries, shorted electrical components and engaging in lengthy troubleshooting procedures will be reduced. Past experience



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has shown that the electrical output provided by the chassis charging system can be marginal and under certain circumstances the electrical load can exceed the alternator output. In addition, some electrical systems have not provided proper circuit protection and at times have not provided adequate wiring for the load. To address the above objectives, the following minimum electrical system design is required:

### **CONVERTER ADDED CHASSIS CHARGING ENHANCEMENT:**

The basic design for the chassis electrical output system must include equipment that provides adequate electrical needs to operate the vehicle's electrical components. In addition, a system is desired that continually monitors the chassis voltage and amperage outputs. The end result of the desired electrical output system is longer battery life, less down time associated with charging system repairs, and the fulfillment of each and every emergency response.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **BATTERY SELECTOR SWITCH:**

A two-position power selector, turning the battery power to the ambulance systems either On or Off shall be furnished. The switch shall be located on or near the drivers seat base. Unless otherwise specified, the battery switch shall not disconnect power to the OEM chassis systems. Note: Ford products are not permitted to disconnect chassis power with this switch.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **VARIABLE THROTTLE ADVANCE:**

In order to reduce the number of component parts and unnecessary throttle linkages, the factory electronic throttle control shall be utilized to activate the throttle advance system. The controls shall require that the chassis be placed in Park or Neutral with the Module Disconnect switch in the On position and the Park Brake engaged before activation of the throttle advance. A digital display warning on the driver console, accompanied by an audible tone, must instruct the driver to Set Park Brake or Release Park Brake to engage or disengage the automatic throttle control. No Exceptions.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **AUTOMATIC LOAD MANAGEMENT:**

In order to insure that onboard personnel attention is focused on victim care rather than being occupied with monitoring vehicle systems, an automatic load management system is required. The bidder must provide a system that continually monitors the vehicles charging system while it is sitting on scene. The system design shall have the ability to automatically shut down not less than ten pre-programmed electrical circuits to prevent a deficit charging condition while the vehicle is sitting at idle. The system shall be programmed to automatically scan the electrical system on one-minute intervals.

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If a deficit charging condition continues for more than one minute, a pre-programmed circuit shall shut down, correspondingly reducing the electrical draw. If the deficit condition continues, a second circuit shall automatically shut down. This process shall continue to repeat at one-minute intervals until at least ten circuits are shut down with corresponding load reductions. In the event any circuits are being controlled (disabled) by the load management system, the driver must be informed in two ways. First, a digital display warning shall appear on the driver information panel indicating Load Management Active. At the same time, the L.E.D. switch indicator light shall begin to flash for each specific circuit that is being disabled. Systems that cannot indicate specific circuits being affected by the Load Management System are not acceptable.

Load management systems must be programmed through a microprocessor based logic and memory system rather than a series of mechanical relays. Systems that require manual activation of Load Management will not be acceptable. Once the deficit condition ceases to exist, the system must be capable of restarting any disabled circuit without any action required by the driver.

The bidder is required to furnish a system that permits the end user, if he so desires, to determine prior to production the order of priority for shedding loads. Although the entire system must function automatically, it must also be designed so that it can be set by the end user to a System Off mode for restocking, training, or maintenance convenience. The System Off setting shall not be merely a switch which would permit the operator to easily turn off Load Management. The intent is to keep the system active at all times when the vehicle is in operation.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **LOW AMPERAGE SWITCHING:**

Electrical devices that are not activated automatically shall be controlled from either the cab or patient area control panels through the use of manual switches. A low amperage switch that sends only an on/off signal to the central electrical distribution area is required. The switches provided shall have documented durability ratings at a minimum of fifty million (50,000,000) cycles. The switch design shall include magnetic technology to attain the required durability ratings. Membrane or rocker style switches will not be acceptable due to their tendency to degrade and fail in continued field use. To eliminate loose or poor contacts, it is unacceptable to have soldered or terminal type connections for the switches. The switches must be an inherent part of the panels.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **SWITCH "ON" INDICATOR LIGHT:**

All switches (unless otherwise noted) on the panels described below shall include a red L.E.D. indicator light that will indicate when power is being applied to a circuit. Designs that have indicator lights that activate to indicate switch position only are not acceptable. In addition, the indicator lights shall be independently programmable to flash or steady burn as required to meet the end user specification.

Above section bid exactly as written: ☒

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Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **SWITCH PANEL DESIGN:**

Each console shall contain a combination of control switches as described above and also an integral digital vacuum florescent message center. The message center shall provide driver/attendant information as described below. The message center is required over the use of buttons, lights or gauges because of the ease in acknowledging the specific information. The drivers display shall be capable of displaying at least four sets of 20 character messages at one time. The rear display shall be capable of displaying two sets of 20 character messages at the same time. Both the cab and patient area switch panels shall be fabricated on a pre-printed circuit board. The circuit boards must be common in design and must be interchangeable between all models offered by the manufacturer being proposed. Switch panels that are not standard in design and are not interchangeable from one unit to another will not be considered.

The switch panels shall be fabricated so that they can be removed for service in less than three minutes. The removal of each panel shall be facilitated by the use of a single four-wire connector for panel control and communication. An optional rear AM/FM speaker system will have its own six-wire connector in addition to the standard panel connection. Volume control must not have any protruding knobs. It shall be flush to the panel surface and shall meet the following requirements for decontamination and spill resistance.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **SWITCH PANEL DECONTAMINATION AND SPILL RESISTANCE:**

Both the driver and the patient area switch panels must be designed so they can be easily decontaminated. Current designs make decontamination impossible when an attendant must use a contaminated glove to operate the switch panel while treating a patient. These areas become breeding grounds for bacteria. For this reason, the switch panels must be built in such a manner that there are no openings or crevices on the panel faces. The entire switch panel must be sealed with a protective overlay material. There shall be no printing or labeling on the face of this material. Holes in the panel through which switches, backlighting, or legends are inserted will be unacceptable. The panels must be cleanable with any commercially available spray type cleaner or disinfectant commonly used by fire and EMS services with no damage created by fluid leaking through openings onto the circuit boards or switch contacts.

The panel surface must be covered with a polyester film laminate for enhanced solvent resistance, strength, and durability. Both front and rear switch panels shall have been tested to at least a 24 hour exposure under DIN 42 115 Part 2 for the following commonly used chemicals: hydrogen peroxide <25%, bleach <20%, glycol, isopropanol, xylene, benzene, phosphoric acid <30%, ammonia <2%, hydrochloric acid <10%, acetic acid <50%, sulphuric acid <10%, diesel fuel, silicone oil, linseed oil, Windex, Formula 409, Fantastic, Wisk, Downey, washing powders, fabric conditioner, Ajax, and glycerin. The bidder shall be required, if asked, to provide the appropriate documentation showing that the above chemicals produced no visible damage after at least a 24 hour exposure. Bidders should be cautioned that commonly used polycarbonate or vinyl membrane fascia and nameplate substrates for electrical panels will not meet this requirement.

The panels shall be spill resistant to shed accidental moisture from spilled soft drinks or coffee cups. In

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addition, the surfaces of the panels shall be antimicrobial. This purchaser reserves the right to request documentation showing that the panel surfaces will kill microbes on contact. This antimicrobial property is to be inherent in the surface material itself and shall not need to be reapplied at any point in the future. Products offered that include aftermarket treatments of the panel surfaces will not be considered.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **SWITCH PANEL BACKLIGHTING:**

Both switch panels shall have backlight with fiber optic technology, powered with high intensity L.E.D. lights. All switch perimeters shall be lighted and raised for ease of switch location at night. In addition, the drivers control panel shall include a red color-coded area to further distinguish warning and emergency controls as well as specific blue color-coded areas for vehicle operation and maintenance systems. The remainder of the switch perimeters shall be green for easy nighttime visibility.

The switch panels shall include, on each panel, an individual intensity control. Switch panel lighting that operates at the same level as the cab instrument panel or that illuminates both the front and rear panels at the same intensity will not be considered. The bidder must provide totally independent control for each panel.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **CAB CONTROL SWITCHING AND DIGITAL DISPLAY:**

#### Switch Activation:

The cab control center shall include 34 switches installed in a backlight aluminum control panel. The following minimum circuits shall be provided on the switch panel:

- Module Disconnect
- Master Warning Circuit
- Light Bars
- Red Flashing Lights
- Primary/Secondary Override (Each position shall have a red On indicator light
- Right Scene Light
- Left Scene Light
- Rear Loading Lights
- Rear Heat/AC with temperature adjustment
- Single Button Vehicle Electrical Diagnostics
- Horn/Siren
- Vehicle Trip Odometer

#### Digital Message Center:

The following digital displays will appear on the faceplate of the cab console when selected:

- Voltage (to the nearest 0.10 volt)

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- Amperage (to the nearest amp)
- Engine Tachometer
- Inside Patient Area Temperature
- Access or Compartment Door Open Warning Message
- Oxygen Warning For Both Tank and Line Pressure
- Electrical System Diagnostics
- 24 Hour Clock
- Trip Odometer
- Emergency Brake Warning
- The System Shall be Capable of Displaying Specific Verbiage As Directed By The Customer

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

## **PATIENT AREA CONTROL SWITCHES AND DIGITAL DISPLAY:**

### Switch Activation:

The patient area control center shall include 28 switches installed in a backlight aluminum control panel. The following circuits shall be provided on the switch panel:

- Rear Heat/AC Activation and Separate Temperature Control
- Rear Heat/AC Fan Speed Control
- Power Vent
- Cot Dome Lights and Bench Dome Lights
- Oxygen and Suction
- Patient Status
- Stop Clock
- Oxygen Line Pressure
- Oxygen Cylinder Pressure
- Radio Volume Control (when required)
- Electronic Privacy Glass Activation (when required)

### Digital Message Center:

The following digital displays shall appear on the faceplate of the patient area control console when selected:

- Patient Area Temperature
- Thermostat Setting
- Oxygen Tank Pressure
- Oxygen Line pressure
- Oxygen Warning
- Stop Clock
- The System Shall Be Capable Of Displaying Specific Verbiage As Directed By The Customer

Above section bid exactly as written: ☒

Section not provided: ☐

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Bidder is offering an alternative to this section: \_\_\_\_\_

## **SPARE SWITCHES:**

Any spare or unused switches must be capable of being programmed later for additional functions including the ability to act as macro switches (one switch activating multiple features) without the need for rewiring.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **MODULE COMPARTMENT AND ACCESS DOOR SWITCHES:**

Exterior circuits such as loading lights, side scene lights and compartment lights shall be activated by low amperage, non-mechanical switches. The type of switch desired is a magnetic sensitive switch that activates the circuit when the magnetic plane is broken. Plunger type switches are not acceptable because of their short useful life and higher amperage requirements.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **DOOR OPEN INDICATOR:**

A Door Open warning indicator, with accompanying audible chime shall be installed in both the cab and patient area. A digital display shall appear on both consoles indicating which specific door has been left ajar. In the case of access doors, the display will read Front Access Door Ajar or Rear Access Door Ajar. In the case of a module compartment door, the display will read Compartment #1 Ajar etc.

Under no circumstances will red flashing lights or systems that do not specifically pinpoint a specific open door be acceptable.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **CENTRAL ELECTRICAL DISTRIBUTION AREA:**

The converter-added electrical system is to be centered around the use of a logic-controlled microprocessor built into a single circuit board. This logic control system is required to maximize reliability of the electrical system and to minimize downtime. It must be provided in order to match the type of control system used in the chassis and to prevent communication problems caused when dissimilar systems are employed. The design of the system must totally separate chassis operation from converter feature installations. In the unlikely event of converter component failure, the chassis must still remain operable.

The computer based electrical system must utilize components similar in design to the computerized chassis functions such as the OEM cruise control system, fuel feed system, transmission control system and braking system.

Above section bid exactly as written: \_\_\_\_\_ ✓

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Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **MULTIPLEXED ELECTRICAL COMMUNICATIONS SYSTEM:**

Because most chassis manufacturers have chosen multiplex electrical communication technology to operate the chassis system, this purchaser requires the same technology for the converter-added systems. A standardized electrical control and wiring system is required. The central processing distribution board must be pre-printed and must be common in design and interchangeable between all similar models offered by the manufacturer. The vehicle manufacturer must own and control all rights to the electrical system. Standard systems controlled by outside vendors and modified for a specific vehicle or manufacturer will not be acceptable due to the unpredictability for future parts or service. Switch panels or main boards that are not standard in design and are not interchangeable from one unit to another will not be considered. The system must consist of logic-controlled solid state circuitry installed on a pre-printed circuit board. Since solid state logic-controlled technology is commonly available and not proprietary to any one manufacturer and has been proven to be more reliable with greater benefits, a blanket exception or clarification regarding the electrical specification is not acceptable and will be cause for automatic rejection of the bid.

In addition to the main distribution board, the system will consist of a series of input or output control modules to manage and feed information and to control the various circuits required by this specification. All modules shall be pre-printed, solid state devices. Each output module must have 10 or more outputs and shall communicate with the central processing unit over a single wire. The output modules shall be capable of carrying 10 amps load per output or a total load of 50 amps per module. The total system must be capable of expanding to control at least 160 output circuits. Each input module must have 10 or more switch inputs. The total system shall be capable of expanding to handle at least 40 inputs. AMP Mate-Lock connectors shall be used for all load connections. Molex connectors shall be used for data transmission lines. Under no circumstances will systems be acceptable that utilize screw type terminals or card connectors due to their susceptibility to working loose due to vibration normally encountered on a vehicle.

The system shall include as standard 16 analog inputs to manage information such as oxygen pressure, amperage, voltage etc. coming from an analog source. These analog inputs must be capable of being used in logic statements to enhance the operation and control of the vehicle.

Under no circumstances may the operation of the central processing unit or the input or output modules be based upon the operation of mechanical relays. Relay based systems require higher amperage operating current and rely on mechanical contact points designed to degrade with use, creating short duty cycles for the vehicle electrical system. Relay based systems, due to those limited short duty cycles, will not be acceptable for the requirements of this specification.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **CENTRAL PROCESSING UNIT FUNCTION:**

The central processing unit shall be fully programmable and shall control a number of functions. The minimum functions to be controlled are as follows:

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- No Load Starting Circuit (as defined in subsequent sections of this specification)
- Load Management
- Sequenced Start Circuit Activation
- Electrical System Diagnostics
- Climate Control Heat/AC operation
- Intensity Controls for Patient Dome Lights
- Oxygen Warning System (high and low pressure)
- All Warning Light Flashers and Flash Patterns
- Patient Status System
- Electrical Diagnostics

Above section bid exactly as written: ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **CIRCUIT PROTECTION:**

Each converter added electrical circuit must have circuit protection for both over current limit and over temperature condition. The circuit protection shall be provided by solid-state circuit breaker/switching devices (MOSFETS) for both the input and output wire feeds for each circuit. The circuit protection shall require no user intervention such as that required for circuit breakers or fuses. For added protection and system reliability, all MOSFETS shall have heat sinks. Lack of heat sinks will be cause for automatic rejection of the system being offered. The system shall indicate an output fault warning on the digital display in the driver control area. Should a problem occur, the warning shall identify the specific module and the output number for easy troubleshooting and to minimize the down time of the vehicle.

Above section bid exactly as written: ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **FIELD PROVEN AND TIME TESTED ELECTRICAL SYSTEM:**

The converter-added electrical system represents the most important system in the design of this ambulance. Reliability and proven performance is essential. Therefore, the bidder must be able to demonstrate that he has at least ten years experience with solid state logic-controlled electrical systems installed in emergency vehicles. Further, the bidder must be capable of all programming required by the system without turning to outside vendors. This includes custom-programmed items as may be delineated in this specification.

The bidder may be required to demonstrate an in production or in service vehicle in order to guarantee compliance with this requirement. Prototype or first of a kind electrical systems are not acceptable. The purchaser may require the bidder to furnish specific references to further document compliance.

Above section bid exactly as written: ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **SPLICE-LESS WIRING:**

Each converter-added circuit shall be powered through an individual wire that is free of any splices within the



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wire harness. For ease of troubleshooting and for greater reliability, one end of the wire shall plug directly into the output module and the other end shall connect to the device or the pigtail of the device being powered.

The use of daisy-chain wiring will not be acceptable. The direct wiring technique described above is the only wiring system that will be accepted.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **WIRING:**

The following minimum wiring standards are required:

#### Identification

By color, by itemized number, and by actual circuit name, stamped every 4-6"

#### Size:

Size will vary and will be dependent upon each wire being able to carry a minimum of 125% of the actual circuit load.

#### Protection of Wiring:

All wiring must be run in breakaway wire loom for protection against abrasion or chafing.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **NO LOAD STARTING:**

To assure the ability to start the unit, the vehicle electrical system must have the ability to manage electrical loads during the engine startup or cranking period. The system shall automatically shut down all converter-added electrical loads when the ignition is activated and the engine is cranking.

Once the engine has started, the system shall automatically turn back on all loads that were previously in the On condition. This feature must be accomplished by system programming and not by means of a relay or a series of relays which are subject to failure, thereby causing the entire converter-added electrical system to fail. Relay based systems will not be considered.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **SEQUENCED START CIRCUIT ACTIVATION:**

To prevent the heavy load burden placed on the alternator and charging system when all emergency warning circuits are activated at the same time by pre-loading the master switch, the vehicle electrical system shall automatically sequence all load-managed warning circuits so they come on one at a time. This sequenced start activation shall be an integral part of the electrical system and shall be accomplished without the use of

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relays or after market add-on systems.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### ELECTRICAL SYSTEM DIAGNOSTIC CHECK:

The electrical system must have built-in capability to self check each converter-added circuit and identify a short or open circuit by means of a single diagnostic switch. . The diagnostic system shall be operable from the drivers seat without exiting the vehicle. Diagnostic systems that are incorporated into exterior compartments, patient area interior cabinets, or remote locations will not be acceptable. The relevant information shall be displayed on the digital display on the cab switch panel. When the operator activates the Run Diagnostic switch, the unit will initiate the systems check. The digital display shall flash the message Running Diagnostics while the check is in progress. The system must go through all outputs for the vehicle to check for malfunctions. If a malfunction is found, the display shall stop flashing and steady burn to indicate the message Module #, Output #, Fail. This message will direct the service staff to the correct output module and the correct wire number in order to troubleshoot and repair the system. Once a failure is identified, the operator may continue to run the remainder of the diagnostic by pressing the Warning Reset switch. The bidder shall furnish with the vehicle a detailed diagram indicating each input and output module number and identifying each circuit controlled by the module.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### ELECTRICAL SYSTEM SUPPORT DATA:

Being able to service the electrical system should the need arise is of the utmost importance. To reduce the down time associated with servicing, the following information shall be provided at the time of delivery:

1. Electrical system operating instructions
2. Patient area heating/AC schematic and parts list
3. Oxygen and vacuum system schematic, parts list and leak check instructions
4. Battery and alternator schematic and system description
5. communications installation instructions
6. Wire description list for converter added wiring
7. Individual schematics for all converter added electrical circuits

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### MODULE DISCONNECT DEFAULT:

The 'Module Disconnect' circuit shall default to the "on" position when the battery switch is activated. Manual activation of the switch is not acceptable.

Above section bid exactly as written: ☒  
Section not provided: ☐

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Bidder is offering an alternative to this section: \_\_\_\_\_

## SECOND REAR CONTROL PANEL:

A second patient area electrical control panel, duplicating the panel listed above, shall be installed near the squad bench. The panel shall be surface mounted and shall permit operation of all patient area electrical functions without the attendant having to leave the squad bench or unfasten the seatbelt. Selection of the panel to be used shall occur automatically without manual transfer switches. Systems requiring the use of manual transfer switches, systems utilizing different control panels for each side, or systems that are not capable of allowing this second control panel will not be acceptable.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## BATTERY SWITCH:

A two position 'On-Off' "Master" battery switch shall be installed on the vehicle within easy reach of the driver. This switch shall control power to the converter-added electrical circuits. Items specified to be wired "Battery Hot" shall not be affected by the Master battery switch. Under no circumstances shall this switch control the chassis O.E.M circuitry. All chassis power (ignition, headlights, etc.) shall remain as designed by the chassis builder.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## INVERTER:20-1050cul w charger, on demand

The vehicle converter shall furnish and install the above model inverter.

Wiring Location: Street side auxiliary compartment

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## 110V INTERIOR OUTLETS:

Duplex 110V interior electrical outlets shall be installed. Quantity and location information is noted below. Each outlet shall be GFI protected and shall illuminate when powered.

Quantity: 5

Locate: Inhalation Area (1), and 1 to be determined at post bid meeting

Locate: Wall Over Bench, in pass thru counter, and upper portion, front all cabinet

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

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## 12V OUTLETS:

12 volt electrical outlets shall be installed within the vehicle. Quantity, location, and adapter type are provided below. All 12 volt outlets shall be protected by a Schottky medical isolator. In addition, the 12 volt outlets shall be wired through a 20 amp manual reset circuit breaker. All outlets, unless noted otherwise below, shall be battery switched. All 12 volt outlets shall be labeled.

Adapter Type: Cigarette Lighter Style

Quantity: 5

Locate: Inhalation Area (1) and 1 to be determined at post bid meeting

Locate: Front Wall Cabinet, wall over squadbench, in pass thru counter. Hot at all times

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

## SHORELINE:

The vehicle shall be equipped with a Kussmaul Auto Eject shoreline. The male shoreline inlet shall be installed as noted below. This inlet shall be a straight three-prong type and shall include the female adapter plug. The shoreline shall be designed so that the plug will automatically eject from the inlet in the event that the vehicle is started while still plugged in. The shoreline shall include a hinged cover to protect it from the elements. The shoreline system shall be designed to handle a 20 amp load, and shall also include a 20 amp inline GFI breaker.

Locate: Street Side of Module Body as Far Forward as Possible

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

## SHORELINE INDICATOR:

A small AC pilot indicator light shall be installed as noted below. The light shall be wired in after the applicable circuit breaker so as to indicate not only the presence of AC power, but the fact that the circuit breaker is in the closed position.

Locate: Over Shoreline Inlet

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

## EXTRA CIRCUIT BREAKER:

A Spare 15 amp manual resetting circuit breaker shall be installed as a provision for the possible installation, at a later time, of additional equipment. This feature is in addition to any prewire that may be included elsewhere within this vehicle specification. The total number of spare breakers is listed below:

# Pelham, NH Fire Department

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Quantity: 1

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **CAB SWITCH PANEL INSTALLATION:**

The cab control panel for the converter-added electrical circuits shall be flush mounted in the OEM dash area. The digital readout and switches must be visible to both the driver and passenger positions.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **REVERSE ACTIVATED REAR SIDE SCENE LIGHTS:**

The rear scene lights on either side of the vehicle shall be programmed to be activated when the vehicle is placed into reverse gear. This is in addition to the other modes of operation as described elsewhere within this document. This feature shall be attained through the programming of the onboard electrical system. Systems that require additional wiring in order to provide this feature are not acceptable.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **SIDE DOOR ACTIVATED CURB SIDE SCENES:**

The curb side scene lighting shall be programmed to be activated when the patient compartment side access door is opened. This is in addition to the other modes of operation as described elsewhere within this document. This feature shall be attained through the programming of the onboard electrical system. Systems that require additional wiring in order to provide this feature are not acceptable.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **REVERSE ACTIVATED LOADING LIGHTS:**

The load lighting on the rear of the vehicle shall be programmed to be activated when the vehicle is placed into reverse gear. This is in addition to the other modes of operation as described elsewhere within this document. This feature shall be attained through the programming of the onboard electrical system. Systems that require additional wiring in order to provide this feature are not acceptable.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## **MODULE DISCONNECT TIMER:**

The "Module Disconnect" circuit shall be wired to shut down when left in the 'On' position with the engine not

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running and the battery switch 'On.' If the shoreline is plugged in, then this feature will be disabled. Toggling the Module Disconnect switch shall reset the circuit for an additional time interval. The time interval shall be adjustable through software programming.

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

### **AUDIBLE LOW VOLTAGE ALARM::**

An audible alarm shall be programmed to warn the operator should the vehicle's voltage drop below 11.8 volts for 120 seconds.

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

### **EMERGENCY BRAKE WARNING:**

When the vehicle is placed into 'Park' or 'Neutral' with the "Module Disconnect" switch 'On' and the "Red Flashing Light" switch 'On', then an audible alarm, accompanied by a visual readout on the cab console digital display, shall warn the vehicle operator to engage the emergency brake. Likewise, when the vehicle is placed into gear, then the same alarm will sound with a visual display warning the operator to disengage the emergency brake.

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

### **BENCH ACTIVATED LOAD AND SCENE LIGHTING:**

The scene lights on either side of the vehicle, along with the rear load lights, shall have control switches installed in the patient area at the foot of the bench in the riser. These control switches are in addition to the switches in the cab control console. There shall be a total of three (3) switches at this location to control the left side, right side, and rear lighting. These shall be momentary switches of the same style used in the front and rear control consoles. These switches shall operate in the following manner:

-If the light is 'On', then the switch will turn it 'Off'.

-If the light is 'Off', the switch will turn it 'On'.

-If the lights are 'Off' because the front console light switches are 'Off', then the switch will turn the lights 'On'.

-The lights will automatically turn 'Off' after closing the rear module entry doors so that the correct pre-selection of the front console switches will be maintained.

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

### **REPORT LIGHT:**

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Report lighting, as described below, shall be installed within the patient area. The fixture shall have three separate incandescent bulbs that can be illuminated either one, two, or all three at one time depending on the amount of light required. The fixture shall be controlled via two switches, one at either end. One switch will illuminate one bulb, the other switch shall illuminate two bulbs. Activation of both switches simultaneously will illuminate all three bulbs. The fixture will be wired through a switch on the rear electrical control panel. Activation of that switch will activate the lighting depending on the setting of the fixture switches. This design will allow for simple "one touch" operation while still providing for flexibility in terms of lighting needs.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **CLOCK:**

A digital clock shall be installed over the rear doors.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **STEP WELL LIGHT:**

A Weldon chrome LED light shall be installed in the side step well to light the step well area when the side access door is opened. The light shall be activated by a magnetic door switch installed on the door as described elsewhere within this document.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **FLUORESCENT LIGHT:**

Fluorescent lighting shall be installed per the quantity and location information noted below. Each light shall be a 24" Thinlite and shall be operable from the rear switch panel. Other modes of operation, as applicable, shall be noted elsewhere within this document.

Total-3

Locate:                      Spaced Evenly from Front to Rear

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## **PROGRAMMABLE LIGHT TIMER:**

A momentary switch shall be installed as noted below to operate the specified lighting with the battery switch in the 'Off' position and the shoreline plugged in. The switch shall activate a programmable timer that will automatically shut the lights off after the specified period of time. This timer shall be field-programmable to allow the time to be adjusted after the vehicle has been delivered. The initial time setting shall be determined.:

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_

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Bidder is offering an alternative to this section: \_\_\_\_\_

### **DOME LIGHTS:**

Weldon LED dome lights shall be installed in the patient area ceiling. Quantity and location information is listed below. The lights shall be recessed into the headliner and shall not protrude from the ceiling more than 1". All dome lighting shall be adjustable and shall be controlled via solid state switching at the patient area electrical control console.

Over Cot:	3
Over Squad Bench:	3
Over walk/passthrough	1

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **INTERIOR CABINET LIGHTING, MAIN WALL:**

All main wall interior cabinets shall be equipped with LED cabinet lights. Lights shall include a snap-in 45 degree clip for light dispersion and ease of replacement. LED's shall be spaced a minimum of 1" apart. The lights shall be controlled through a switch in the rear control panel.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

### **AUXILIARY PATIENT AREA LIGHT CONTROL:**

The lighting defined below shall be controlled as follows. This control is in addition to the method of control dictated in the preceding section.

-A switch on the front control panel can be used to activate the patient area lighting should it be off. The switch can also be used to deactivate the patient area lighting should it be on.

-The patient area lighting shall reset to normal operational programming should a patient area access door be opened, or if the master battery switch is turned 'off', and then 'on' again.

### **AUXILIARY LIGHT CONTROL REQUIREMENTS:**

Due to the complicated requirements of the auxiliary lighting control, as described above, a circuit using additional switches and relays to achieve the same functionality is not acceptable. Added relays, switches, wires, and connections deviates from the single wire, solid state, microprocessor-based system as outlined in this specification. The above feature, like others that have been specified, may reduce the reliability of a relay-based system. This electrical feature, like all others on this vehicle, must be attained through solid state microprocessor-based technology.

Above section bid exactly as written: \_\_\_\_\_ ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_



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## PANEL LIGHT:

A Hella goose neck panel light shall be installed at the location described below. An 'On/Off' switch shall be incorporated into the light fixture.

Quantity: 1  
Locate: Cab Console

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## HEATING AND AIR CONDITIONING:

A temperature control system is desired that provides quick and simple operation while maintaining a uniform temperature throughout the patient compartment. The unit itself must be located so that it is easy to access for service. This location must also be near the O.E.M. heat/AC connection points when provided so as to increase the overall efficiency of the unit. The following minimum design standards must be adhered to in order to best meet the needs of this purchaser.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## SYSTEM CONTROLS:

The climate control functions shall be controlled through a primary location in the inhalation panel, and through a secondary location in the cab electrical control console. The switches used for the operation of this system shall be identical to the switches described in the "Electrical" section of this specification. Switches shall be present in the front console to select either 'Heat', 'A/C', or 'Off' functions and to select the desired temperature. Switches shall be present in the rear control panel to select either 'Heat', 'A/C', or 'Off' functions, 'Automatic' or 'Manual' mode of operation, and to select the desired temperature.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## THERMOSTAT:

The temperature level shall be adjustable from both the front and rear electrical control panels for the 12V system. Two switches at each location shall be used to scroll through desired temperature settings on one degree intervals. Once the desired temperature is set, then the system shall retain that setting regardless of the position of the battery switch. The temperature sensor for the system shall be located at the inhalation panel so as to attain a true patient compartment temperature. The temperature setting and the actual temperature reading shall be viewable from both the front or rear digital displays.

This system is to be controlled through the converter-added electrical system. Under no circumstances shall household type thermostats be acceptable.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

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## SYSTEM OPERATION:

The system shall allow for both automatic and manual operation. When set to the manual mode the fan speed shall be infinitely adjustable from the rear control panel for extra ventilation. When set to the automatic mode the fan speed shall be controlled by the thermostat setting. The temperature that is selected shall be continuously maintained. When the selected temperature has been reached, then the system shall automatically cycle the fan speed down to reduce unnecessary electrical load.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## HEATER WATER CONTROL:

The flow of hot water from the chassis to the converter-added heat/AC system shall be controlled by an electrically operated valve located under the hood. Water flow to the rear heater shall be activated when either the front or rear heater switch is turned to the 'On' position. It is a requirement of this specification that this type of valve be used unless the converter is supplying a self-contained heat-AC system. The term "self-contained" is defined as being a unit that does not require any water flow from the chassis. Under no circumstances will manual valves be considered. Manual valves are inconvenient and tend to leak.

Above section bid exactly as written: ✓  
Section not provided: \_\_\_\_\_  
Bidder is offering an alternative to this section: \_\_\_\_\_

## UNIT LOCATION AND SERVICE:

It is required that the heat/AC unit be installed inside a custom-made aluminum box beneath the attendant's seat. This box shall be perforated to provide air flow to the heat/AC unit mounted beneath the seat. This is required for efficiency, serviceability, and safety.

Many O.E.M. chassis builders provide tap-in points for the converter-added heat/AC unit behind the driver's seat. Therefore, system efficiency is higher when the hot water from the chassis is pumped to the area beneath the attendant's seat. Efficiency is not lost by pumping the water over an extended distance or up to ceiling level. Such a condition would naturally result in reduced patient area temperature levels as excessive flow resistance would be present.

The attendant's seat shall be installed on a hinged top cover for the aluminum heat/AC system housing. This allows the seat to be hinged forward and out of the way for service work. The unit will be accessible by removing two bolts located behind the seat and lifting the seat forward as opposed to dismantling cabinetry, etc.

In the unlikely event of a system leak the specified installation location will allow the leakage to run out onto the ground. Systems that are installed above cabinetry may leak into the cabinets, thus ruining the cabinets (if they are wood) and the cabinet contents.

Above section bid exactly as written: ✓

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Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **FILTRATION SYSTEM:**

A replaceable carbon filter shall be installed at the air intake area of the heat/AC system. Replacement of the filter shall be simple, and shall require very little time so as to assure that the vehicle will not have to be taken out of service. Replacement filters shall be readily available and shall be capable of being cut to the proper size to fit the vehicle.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **AIR FLOW:**

The installation of the heat/AC system shall include an air duct system to direct the airflow in such a way as to provide uniform temperature levels throughout the patient compartment. Air intake shall be from the floor level. The air shall be channeled through a duct that is aft of the heat/AC unit. The air shall exit through adjustable vents at the ceiling level above the attendant's seat. This design will allow for a circular flow of air throughout the patient compartment.

Auxiliary A/C condenser to be located on the roof of the cab.

The specified design will separate the intake and exhaust ports. Separation of the intake and exhaust will decrease air turbulence and improve overall efficiency of the system. Systems that combine intakes and exhausts within the same grille work will not be acceptable.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **12V HEAT/AC SYSTEM:**

The 12V heat/AC system shall be installed per the instructions listed above. This system shall be designed to be independent from the chassis O.E.M. AC system. At no point shall the converter-added A/C system tap into the O.E.M. system. The system provided shall include an evaporator, compressor, and a bottom-mount condenser designed for use with the DT466 engine. The BTU and CFM ratings on this unit shall be as follows:

Heat: 65,000BTU

A/C: 32,000BTU

CFM: 650

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **ULTRAVIOLET LAMP IN A/C SYSTEM DUCT:**

A 13 watt Germicidal Ultraviolet Lamp shall be installed in the heat A/C duct in the patient area to reduce bacteria and mold growth. The lamp should have a wavelength of 254 nm and shall be resistant to vehicle

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vibration and shall be no more than 6" long. For maximum efficiency the lamp must be installed in the duct itself and not in the heat A/C unit. The lamp should be activated automatically anytime the blower fan for the heat A/C system is in the "on" position.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### HEAT/AC INTAKE FILTER:

A three-ply air filter shall be installed at the heat/AC air intake point. This filter shall not be made of paper products. The filter is to include an internal wire frame and is to be constructed with a self-gasketing perimeter to prevent leaks. This filter is to be used in lieu of any other filters that the manufacturer may typically provide.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### ROOF MOUNTED POWER VENT:

A power vent shall be installed on the roof of the module body and shall be wired through a switch located on the rear control panel. The vent shall also be capable of being manually closed from inside the patient area.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### STATIC ROOF MOUNTED VENT:

A static vent shall be installed on the roof of the module body. The vent shall be capable of being manually closed from inside the patient area.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

### CAB CONSOLE AND COMMUNICATIONS:

The vehicle communications and console features are designated below:

#### ANTENNA COAX #1:

An RG 58U coax shall be installed. A removable access plate in the patient area ceiling shall be provided for access to the exterior termination point located on the module body roof. Under no circumstances shall the vehicle design necessitate disassembly of the interior finish work to access the coax termination point. The coax shall terminate at the inhalation area:

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

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## ANTENNA COAX #2:

A second RG 58U coax shall be installed. A removable access plate in the patient area ceiling shall be provided for access to the exterior termination point located on the module body roof. Under no circumstances shall the vehicle design necessitate disassembly of the interior finish work to access the coax termination point. The coax shall terminate behind the drivers seat:

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## RADIO PULL WIRE:

A pull wire shall be installed to aid radio cable installation and prevent removal of interior panels once the vehicle has been completed. The following pull wire shall be installed:

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## CAB CONSOLE:

A console shall be installed in the cab. The console shall be installed at floor level and shall allow space for siren and radio head installation. The console shall be color coordinated with the cab interior. The top of the console shall be on a slant and shall house the recessed emergency control panel and integral digital display. Under no circumstances shall the console interfere with the OEM vehicle controls or gauges, nor shall the control panel be installed in such a manner as to interfere with either the OEM vehicle controls, gauges, or the driver's line of vision.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## CONSOLE EXTENSION:

An aluminum console extension shall be fabricated and installed in the vehicle cab. The extension shall attach to the front console and shall include a location to mount siren and/or radio heads, as well as three slots for storage of map books and binders. The console extension shall be covered in carpet to compliment the interior cab color. Console will be reinforced to hold computer stand

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## RADIO POWER/GROUND:

The vehicle manufacturer shall install heavy gauge cable B positive and ground for radio power. Termination is to be to insulated studs. Radios to be installed by manufacture. Radios to be supplied by purchaser.

Locate: Behind Driver Seat

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Status: Battery Switched

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

## **OXYGEN AND SUCTION SYSTEMS:**

Reliability, safety, and ease of operation are essential characteristics of the onboard oxygen and suction systems. System design must meet the following minimum guidelines. Bidders are asked to respond to each section appropriately per the bid requirements and to explain any variations to these requirements.

## **SWITCHING FOR OXYGEN AND SUCTION:**

The rear switch panel shall contain two switches labeled "OXYGEN" and "VACUUM". Each of these switches shall electrically activate those respective systems. That activation shall be instantaneous. Systems that are not instantaneously responsive to their activation will not be considered.

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

## **SYSTEM DESIGN:**

A single piece manifold assembly shall serve as the basis for the oxygen delivery system. The manifold assembly shall incorporate ports for installation of O2 lines to all specified outlets, an electrically activated oxygen delivery solenoid, and a manual bypass valve. The assembly shall be installed behind the inhalation panel and shall be easily accessible.

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

## **ELECTRICAL OXYGEN ACTIVATION:**

The switch, located on the rear control panel and labeled "OXYGEN", shall activate the solenoid. This design will allow for the instantaneous flow of oxygen while eliminating the need to manually turn a valve to initiate oxygen flow.

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

## **MANUAL BYPASS:**

The oxygen solenoid shall be equipped with a manual bypass valve. Located behind the inhalation panel, the valve shall be easily accessible so that, in the unlikely event of an electrical failure, administration of oxygen may continue.

Above section bid exactly as written: ☒

Section not provided: ☐

Bidder is offering an alternative to this section: ☐

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## SYSTEM REGULATION:

The patient area shall be free of high pressure oxygen lines. To accomplish this the vehicle converter shall install a KKK approved regulator at the oxygen cylinder. The regulator shall include an integral dial type gauge to monitor the cylinder contents. A single low pressure line shall be installed from the regulator to the O2 manifold assembly. This method shall insure that all high pressure is maintained in an exterior compartment away from the interior patient area.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## OXYGEN LINES:

The O2 line connecting the regulator to the manifold assembly shall be rated at 200 psi working pressure and 1,250 psi burst pressure. The line shall be UL approved. There shall be NO connections installed in the line between the regulator and manifold assembly as these create a possibility for leakage. All connections shall be DISS style and shall be specific to the gas being supplied.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## LINE PROTECTION:

The O2 line shall be protected from crimping through the installation of a flexible spring guard on the portion of the line in the cylinder storage compartment.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## SYSTEM MONITORING:

The condition of the oxygen system shall be continually monitored and reported to the vehicle operators through the vehicle's onboard electrical system. Digital readouts containing the information listed below shall be available primarily at the patient area control console. The secondary location for availability of this information shall be the cab console. The information available shall include the following:

- Cylinder Pressure
- Line Pressure

In addition, this system shall be designed to offer a warning, both audible and visual, if the condition of the oxygen system falls outside of the following pre-programmed parameters:

- Low Cylinder Pressure (500 psi or below)
- Low Line Pressure (40 psi or below)
- High Line Pressure (75 psi or above)

These oxygen system warnings shall immediately notify the personnel of a problem, again, via a digital readout

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and audible alarm. The system shall require the personnel to acknowledge receipt of the information.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## PRELIMINARY SYSTEM TESTING:

The oxygen system shall be tested prior to installation in the vehicle. This test shall be performed by the vehicle manufacturer and shall subject the system to three times (3X) the working pressure. This test shall be conducted for a minimum of four (4) hours.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## FINAL SYSTEM TESTING:

The completed system shall be tested again once it is installed in the vehicle. This test shall be performed at working pressure for a minimum of four (4) hours. After the system has passed the inspection process it shall be capped and tagged per Federal KKK specifications.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## ADDITIONAL OXYGEN AND VACUUM SUPPLIES:

The oxygen and suction systems shall be complete upon delivery with the exception of the O2 cylinder. The cylinder shall be supplied and installed by the purchaser after delivery of the vehicle has taken place. One disposable mask shall be supplied with the completed vehicle.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## OXYGEN BOTTLE MOUNT, VERTICAL TRACK FOR QRM-V:

Vertical track for mounting of a QRM-V O2 bottle mount shall be welded on the back wall of the compartment in the right hand corner. The O2 bottle mount is adjustable for "M" or "H" size tanks.

Above section bid exactly as written: ☒  
Section not provided: ☐  
Bidder is offering an alternative to this section: ☐

## ZICO QRM-V CYLINDER BRACKET:

A Zico QRM-V oxygen cylinder bracket shall be installed in the main O2 compartment.

Above section bid exactly as written: ☒  
Section not provided: ☐



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Bidder is offering an alternative to this section: \_\_\_\_\_

## ACCESS TO CYLINDER VALVE FROM PATIENT AREA:

A clear Plexiglas door shall be provided in the patient area wall for access to the oxygen cylinder valve. The door shall be hinged so that it swings into the oxygen cylinder storage compartment. The opening shall be trimmed with anodized aluminum edging.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## OXYGEN OUTLETS:

Two oxygen outlets shall be installed in the rear inhalation panel unless otherwise noted below.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## ADDITIONAL OXYGEN OUTLETS:

Additional oxygen outlets shall be installed in ceiling over chest of cot.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## OHIO MEDICAL OXYGEN AND SUCTION OUTLETS:

The oxygen and suction outlets installed in the vehicle shall be Ohio Medical Quick Connect style outlets.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## OXYGEN AND SUCTION OUTLET STYLE:

The oxygen and suction outlet adaptors shall be:

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## FLOWMETER:

Dial type flowmeter(s), in the quantity listed below, shall be supplied with the completed vehicle. Each flowmeter shall be supplied with a mating quick connect adapter. The flowmeter shall provide a maximum flow of 25 LPM.

Quantity: 1

Above section bid exactly as written: \_\_\_\_\_ ✓

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Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **CYLINDER WRENCH:**

A cylinder wrench shall be installed inside the oxygen compartment. The wrench shall be installed in such a way as it will not move or rattle. The wrench shall be chained to the compartment so that it cannot be removed, however, the chain must not interfere with the operation of the wrench.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **HUMIDIFIER:**

A disposable humidifier shall be supplied with the completed vehicle.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **SMITHWORKS IV WARMER:**

A Smithworks IV warmer shall be installed as noted below. The warmer is to be plugged into 12V ignition activated power. Street side interior compartment above the airway seat.

Locate: Install by dealer after Pelham Fire views actual vehicle

## **SPARE 'D' BOTTLE STORAGE:**

2 FW #521 single 'D' bottle brackets shall be provided and installed in the location listed below.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **"D" BOTTLE STORAGE IN HEAD OF BENCH:**

Recessed storage for two (2) "D" size bottles shall be provided. These bottles are to be secured using the F.W. #521 bottle brackets specified elsewhere within this document. This storage area shall be installed at the head of the squad bench and recessed into the floor. Access will be provided by an opening in the face of the bench facing the step well.

Above section bid exactly as written: \_\_\_\_\_

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **PRIMARY VACUUM OUTLET:**

A single vacuum panel shall be installed in the inhalation area. The outlet shall be of the same style as those of the oxygen system and shall be connected to the onboard vacuum pump.

# Pelham, NH Fire Department

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Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **KKK SUCTION KIT:**

A suction kit shall be included with the finished vehicle and shall include a suction rinsing bottle, (1) pharyngeal tip, and (1) yoke connector.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **LETTERING:**

Interior doors and exterior rear shall have matching Chevron pattern applied by dealer after Pelham fire views actual vehicle

## **LETTERING DESIGN:**

This specification calls for lettering to be supplied and installed by the successful bidder after Pelham Fire representatives view actual vehicle.

Above section bid exactly as written: \_\_\_\_\_ ✓

Section not provided: \_\_\_\_\_

Bidder is offering an alternative to this section: \_\_\_\_\_

## **TRADE IN:**

Bidders to take a 2000 E450 Horton Type III Ambulance as a trade in, value to be determined by bidder and is trade "as is" condition. Vehicle is able to be viewed at Pelham Fire by appointment. (NO EXCEPTIONS)

**Drive way specification. Successful ambulance must be able to navigate the following drive way specifications in regards to angles of approach and departure:**

### **Driveways and Other Accesses for Single Family and Duplex lots**

Driveways and other accesses to the local street network or proposed streets shall be constructed in accordance with the relevant provisions of the Pelham Subdivision Regulations, and the most recent version of the document entitled "State of New Hampshire Department of Transportation Policy and Procedure for Driveways and Other Accesses to the State Highway System". Driveways shall be defined in accordance with the definitions given in the most recent version of the Institute of Transportation Engineers Guidelines for Driveway Design and Location. Both of these documents are hereby incorporated into these regulations by reference. The more stringent requirements of the Pelham Subdivision regulations shall apply where different. The Planning Board shall retain approval authority for all wetland or WCD crossings or other lot access where steep slopes or other special features are present.

# Pelham, NH Fire Department

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All driveways and other lot accesses shall be constructed as permitted then approved by the Fire Chief as the Authority Having Jurisdiction (AHJ) in accordance with NFPA I and in conjunction with Highway Safety Committee review and guidance prior to issuance of a building permit. The Fire Chief or his agent shall have jurisdiction for the design and location of all dry hydrants, fire cisterns or other water access.

A Special Permit will be required by the Planning Board before a driveway approved under these regulations is relocated with review and comment by the Highway Safety Committee and approval by the Fire Chief or his agent prior to the issuance of a building permit.

## **Driveway Specifications:**

1. Driveways shall meet the roadway at a perpendicular angle and shall be flared 2 feet on each side where it meets the roadway. The driveway shall have a maximum slope of +/- 5% for the first 20 feet and any curves in the driveway shall have a minimum radius of 25' at the inside of the curve and 50' at the outside curb line.
2. Driveways of 150' or less in length shall be a minimum of 12' in width with a maximum slope of +/- 10% after the first 20' and the alignment shall permit a WB-50 Vehicle to pass (standard fire truck).
3. All driveways between 150' and 300' shall be a minimum of 14' in width with a maximum slope of +/- 10% after the first 20'.
4. All driveways exceeding 300' in length shall be a minimum of 14' in width after the first 20' with a maximum slope of +/- 10% and must be terminated with a paved turn-around area adequate for a WB/50 vehicle with a maximum slope of +/- 5% within the turn-around area.
5. All driveways 500' or more in length shall be a minimum of 14' in width, with a maximum slope of +/- 10% after the first 20' and shall include a pull over at the midpoint to accommodate a WB/50 vehicle allowing another WB/50 vehicle to safely pass. Driveways of this length shall be terminated with a paved turn-around area adequate for a WB/50 vehicle with a maximum slope of +/- 5% within the turn-around area.
6. All New subdivisions shall submit plans showing proposed driveways conforming to these minimum standards of this section in order to be approved.

## Pelham, NH Fire Department

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7. Whenever a building permit is pulled the applicant shall submit a driveway application with a certified driveway plan that either conforms to the subdivision plan approved under these standards, or they must seek a special permit from the Planning Board and prove a new location of their choosing meets these minimum standards. Verification that the driveway complies with this section shall be made in writing by the Planning Board's review engineering firm.
  
8. All private driveways serving Senior and Elderly Housing projects shall be constructed to Town Road Specifications as defined within this document in addition to meeting all the requirements of the Fire Chief under NFPA I as described in this section.

Town of Pelham NH  
Pelham Fire Department  
8 Old Bridge Street  
Pelham NH 03076

April 6, 2012

Dear Town Officials,

Greenwood Emergency Vehicles Inc. is pleased to submit this proposal for the purchase of (1) One Emergency Medical Vehicle.

Greenwood represents Horton Emergency Vehicles of Columbus Ohio. Horton is well known for quality and dependability. Horton ambulances are driven over the road to their final destination.

All service and/or warranty work is performed at Greenwood's state of the art facility by EVT (Emergency Vehicle Technician) certified mechanics.

As one of Hortons' largest volume dealers, we offer full factory support, trained skilled technicians, and excellent post sale support.

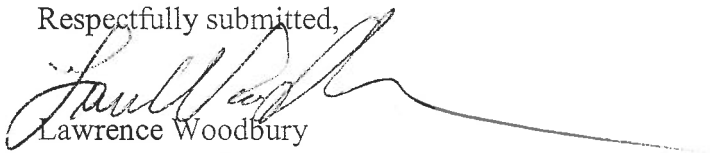
This Horton meets or exceeds all 2012 KKK-1822-F regulations.

This Horton ambulance meets or exceeds all current Government emissions standards.

This chassis may be a 2013 model, depending on the date of signing final contracts.  
Delivery is anticipated within 180 working days of signing final contracts.

Price for Horton ambulance as specified	\$207,877.00
Accessories as per bid	<u>\$4,000.00</u>
	\$211,877.00
Value for 2000 trade in	<u>-\$6,500.00</u>
 TOTAL FOR AMBULANCE	 \$205,377.00

Respectfully submitted,



Lawrence Woodbury  
Ambulance Sales Manager  
Greenwood Emergency Vehicles

**PELHAM FIRE DEPARTMENT**

Chief James Midgley

**Year:** 2012  
**Chassis:** Terrastar 108"  
**Type:** MED  
**Model:** 623  
**Rev 2** Print Features

1228

**CATEGORIES:**

**A** Chassis  
**B** Body Connection Pass Thru Type  
**BH** Chassis Accessories  
**BL** Chassis  
**C** Conversion Model  
**CB** Module Body  
**D** Module Body Hardware  
**E** Paint and  
**F** Cabinet Doors, Handles and  
**G** Interior Colors  
**H** Interior Cabinets, Streetside  
**I** Interior Cabinets, Curbside  
**J** Front Wall  
**K** Interior Accessories and  
**L** Cot Mount, and Patient  
**M** Warning Systems, Visual  
**MN** Warning Systems, Audible  
**O** Lights, Non Emergency  
**P** Electrical Power Group  
**Q** Heat, Ventilation, Air conditioning  
**R** Console, Radio, and communications  
**T** Oxygen and Suction  
**U** Lettering and Graphics  
**Z** Other

**Prepared By:** Larry Woodbury

GREG ATWOOD

**Year:**

2012

**Chassis:**

Terrastar 108"

**Model:**

623

<i>Option</i>	<i>Std</i>	<i>Qty</i>	<i>Header/Description/Data</i>	Proposal Total
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AA000000	1	1	SPECIFICATION FOR A NEW EMERGENCY MEDICAL VEHICLE	
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AB			Horton Emergency Vehicles Feature Lis	
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AIN22012	0	1	CHASSIS, 2012 Terrastar, 108" C/A The chassis required to complete the ambulance conversion shall be supplied by Portland North	
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AJNSPIC0	1	1	CHASSIS INTERIOR COLOR SHALL BE GRAY	
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B			CHASSIS MODIFICATIONS, HARDWARE AND ACCESSORIES	
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BH02F000	1	1	HUB & LUG NUT COVERS, STAINLESS FOR NAVISTAR 19.5" Polished stainless steel hub and lug nut covers shall be installed on all four outside wheels.	
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BH02H000	1	1	TIRE SIZE, 19.5", MEDIUM DUTY: This vehicle is specified to have 19.5" tires.	
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Greenwood Emergency Vehicles  
Larry Woodbury

1:11:31 PM

*Print Features*  
Rev 2 Page 2 of 30



GREG ATWOOD

**Year:**

2012

**Chassis:**

Terrastar 108"

**Model:**

623

<i>Option</i>	<i>Std</i>	<i>Qty</i>	<i>Header/Description/Data</i>	<i>Proposal Total</i>
BH03A000	1	1	<b>MUD FLAPS: front</b> Install rubber mud flaps behind each front tire.	
BH03B000	1	1	<b>MUD FLAPS: rear</b> Install individual rear mud flaps behind each set of rear wheels.	
BH040000	1	1	<b>CHASSIS IS EQUIPPED WITH HORIZONTAL EXHAUST</b> The chassis specified above is to include a horizontal exhaust. <i>The exhaust will exit on the drivers side of the vehicle unless otherwise noted.</i>	
BH04G000	0	1	<b>CHASSIS HORSEPOWER RATING IS 300HP</b>	
BH08D000	0	1	<b>RUNNING BOARDS, DIAMOND PLATE FOR TERRASTAR</b> Diamond plate running boards are to be installed on the chassis.	
BH11A000	0	1	<b>RECESSED REAR STEP POCKET IN REAR RISER</b> A diamond plate pocket shall be fabricated into the rear riser. When the rear step is in the up position it will be nearly flush with the outer surface of the riser to assist in patient loading.	
BH32OR00	1	1	<b>AIR SUSPENSION SWITCH: dump override</b> A switch will be installed where specified, to override the automatic dump feature activated by the left rear patient compartment entry door. <i>Switch Locate: curbside rear door</i>	
BH55CC00	0	1	<b>DELETE THE ON SPOT AIR COMPRESSOR</b> The On Spot automatic tire chain air compressor shall be deleted. The tire chains shall operate off of the chassis air system.	

GREG ATWOOD

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**Option Std Qty Header/Description/Data**

**Proposal Total**

BH55IH00	0	1	ON SPOT CHAINS, On Spot automatic tire chains shall be installed on the chassis. Activation shall be through a switch located on the front console.
BHSPD006	0	1	MIRROR: OEM The mirror set shall be OEM supplied, and installed by the chassis manufacturer.
BL26B000	1	1	BACKUP ALARM RESET Backup alarm to automatically reset to on if alarm was canceled during previous use.
BL26L000	0	1	DUAL PURPOSE CAMERA SYSTEM, BACKUP AND PATIENT AREA VIEWING Install a Voyager VCCS130 backup camera over the rear doors. Install a second camera on the interior of the vehicle as noted below. Install a Voyager AOM711 7" LCD screen in the cab rearview mirror area. Wire to activate the backup camera when the vehicle is placed into reverse. The second camera is to provide a view of the patient area when selected.  INTERIOR CAMERA LOCATION OVER REAR DOORS.
BL32A000	1	1	OEM AM/FM/CD PLAYER SHALL BE PROVIDED BY THE OEM MANUFACTURER OEM AM/FM/CD player shall be provided by the OEM manufacturer on all Horton supplied chassis.
BSP00001	0	1	SPECIAL INSTRUCTION, CHASSIS MODIFICATION HARDWARE & ACCESSORIES  4/2/2012 Install 3 batteries in slide out battery compartment, ,/// Install Echo vision Obstacle detection system in rear of vehicle to alert driver when object is about to come in contact with object in rear of vehicle.

**C CONVERSIONS**

GREG ATWOOD

Year:

2012

Chassis:

Terrastar 108"

Model:

623

**Option Std Qty Header/Description/Data**

Proposal Total

**CA660000 0 1 CONVERSION MODEL: 623T TERRASTAR**

MINIMUM BODY DIMENSIONS:

(Exterior)

-Height: 89"

-Width: 96"

-Length: 173"

(Interior)

-Height: 72"

-Aisle 20"

-Width: 20" (from edge of cot in wall position to bench riser)

-Length: 169"

OVERALL DIMENSIONS (Including Chassis, Module and Step):

-Height: 117" (to top of vent)

-Width: 100"

-Length: 296"

**CA660001 1 1 623T STREETSIDE FORWARD:**

Clear Door Opening: 18.7" wide x 79.1" high

Actual Compartment 21.5" wide x 82.1" high x 20"

This area shall be accessed through a single outside hinged door.

The compartment shall house the vehicle's primary O2 cylinder. The compartment shall be vented to the outside.

**cb040000 0 1 COMPARTMENT HEIGHT Modify: first, street side**

The height of the standard compartment for this model shall be modified. This is the first street side compartment height modification and shall include affected modifications to the interior cabinet.

4/2/2012 Height Modification: fabricate a compartment above Compartment #1 for the vehicles compressor, suction pump and electrical equipment normally found in streetside#2

**CA660002 1 1 623T STREETSIDE INTERMEDIATE:**

Clear Door Opening: 51.8" wide x 39.8" high

Actual Dimensions: 55.5" wide x 43.0" high x 20"

This area shall be accessed through double, outside hinged doors.

Both doors shall have exterior door handles and latching devices.

**dr09lb00 0 1 SHELF FOR LED LIGHTED DOUBLE DOOR COMPARTMENT**

A diamond plate adjustable shelf shall be installed in the area listed below.

4/2/2012 Locate: Adjustable

GREG ATWOOD

Year:

2012

Chassis:

Terrastar 108"

Model:

623

**Option Std Qty Header/Description/Data**

**Proposal Total**

**CA660004 1 1 623T STREETSIDE REAR:**

Clear Door Opening: 32" wide x 39.8" high  
Actual Dimensions: 37.4" wide x 43.0" high x 20"  
This area shall be accessed through double, outside hinged doors.  
Both doors shall have exterior door handles and latching devices:

**cb04a000 0 1 COMPARTMENT HEIGHT MODIFY: second, street side**

The height of the standard compartment for this model shall be modified. This is the second street side compartment height modification. Interior cabinet modifications included in the "COMPARTMENT HEIGHT MODIFY: first, street side" option B04  
*Height Modification: door ht. to be 59.8" to match Pelham's existing Horton.*

**CA660005 1 1 623T CURBSIDE REAR:**

Clear Door Opening: 25.1" wide x 80.7" high  
Actual Dimensions: 29.6" wide x 83.6" high x 20"  
This area shall be accessed through a single outside hinged door

**dr08l000 0 2 SHELF FOR LED LIGHTED VERTICAL COMPARTMENT**

A diamond plate adjustable shelf shall be installed in the following location.  
*Locate: between divider and front wall*

**dr11a000 0 1 DIVIDER FIXED, VERTICAL COMPARTMENT**

Install a 16" deep fixed vertical divider shall be installed in the location listed below. (Divider material is to match the compartment material)  
*Locate: 10" from front wall*

**dr12a000 0 1 ROK BACKBOARD STRAP**

Install a ROK backboard strap in the designated backboard compartment.

**CA660006 1 1 623T CURBSIDE FORWARD WITH BATTERY COMPARTMENT:**

Clear Door Opening: 22.1" wide x 79.1" high  
Actual Dimensions: 26.7" wide x 83.6" high x 30"  
This area shall be accessed through a single outside hinged door and from an opening located on the curb side forward wall. The area shall be primarily used for storage of customer furnished battery compartment will be modified to accept three batteries.

GREG ATWOOD

Year:

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Terrastar 108"

Model:

623

<i>Option</i>	<i>Std</i>	<i>Qty</i>	<i>Header/Description/Data</i>	<i>Proposal Total</i>
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CAB93AF0	0	1	<b>KKK-A-1822F CERTIFICATION LABEL</b> The vehicle shall have weight/payload, electrical load and KKK-A-1822F certification stickers installed in the O2 compartment. 4/2/2012	
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**CB BODY MODIFICATIONS/OPTIONS**

CB06R000	0	1	<b>GRIP STRUT STEP SURFACE IN SIDE ENTRY DOOR</b> Install a recessed step well at the side entry door with a removable grip strut insert that is flush with the threshold.	
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CB06SW00	1	1	<b>DOUBLE STEP CURBSIDE ENTRY, 3"</b> The curbside skirt, forward of the rear wheel well shall be dropped 3 inches. Two integral ALD steps within the side patient door step well shall be available upon opening the side door for easier and lower access to the patient compartment.	
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CB07R000	1	1	<b>BODY MOLDING:</b> Install standard body side molding. (Does not apply to wheelwell compartments)	
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CB09SA00	1	1	<b>PATIENT AREA SOUND PROOFING/ACOUSTIC ENHANCEMENT PACKAGE</b> Install standard sound control package.	
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CBR12D00	0	1	<b>STREETSIDE WHEEL WELL COMPARTMENT/PULL OUT DRAWER</b> A compartment shall be constructed above the street side wheelhouse. The door for this compartment is to be fixed to the face of a slide-out tray housed within the compartment. Install Accuride slides on tray. <i>Note: This does not include any compartment lighting.</i>	
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**D MODULE BODY HARDWARE**

GREG ATWOOD

**Year:**

2012

**Chassis:**

Terrastar 108"

**Model:**

623

<b>Option</b>	<b>Std</b>	<b>Qty</b>	<b>Header/Description/Data</b>	<b>Proposal Total</b>
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DG06D000	0	1	<b>ELECTRONIC PRIVACY WINDOWS IN PATIENT DOORS:</b> The patient area door windows shall include liquid crystal privacy control. When privacy is needed, a switch shall be activated to turn the windows solid so they cannot be seen through even at a very close distance. The windows shall return to clear with a second touch of the switch. All door windows to have fixed glass. The switches shall be labeled  <i>Switch Location: adjacent to side patient door &amp; in rear control</i>	
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DG06E000	0	1	<b>ELECTRONIC PRIVACY WINDOW OVER SQUAD BENCH:</b> The patient area window over the squad bench shall include liquid crystal privacy control. When privacy is needed, a switch shall be activated to turn the window solid so they cannot be seen through even at a very close distance. The window shall return to clear with a second touch of the switch. The window shall have fixed glass. The switch shall be labeled "PRIVACY".	
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DH03B000	1	1	<b>MIRROR STAINLESS STEEL SPLASH SHIELDS</b> Install #8 mirror stainless splash shields on the lower front face of the body just behind the cab access doors. These splash shields are to be the same height as the diamond plate front  )	
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DH04B000	0	1	<b>MODULE BODY FENDERS: rubber</b> Rubber extruded fenders shall be installed around the rear wheel well opening.	
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DH050000	0	1	<b>RUB RAILS, RUBBER</b> The lower body rub rails shall be rubber ILOS>	
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DH330000	1	1	<b>REAR DOOR HOLD OPENS, GRABBER</b> Install chrome Cast Products "Grabber" style rear door hold opens.	
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GREG ATWOOD

**Year:**

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623

**Option Std Qty Header/Description/Data**

**Proposal Total**

**DL48A000 1 1 ELECTRIC DOOR LOCKS: access doors**

Power activated door locks shall be installed on patient area access doors. Locks shall be activated by a switch at each patient area door, a switch in the front radio console and controlled with the access door locks. Locks may be overridden by a manual slide lever or by the door key.

**DL48B000 0 1 ELECTRIC DOOR SWITCH: concealed**

Install a concealed switch on the exterior of the vehicle to operate the power door lock circuit. Doors shall be wired to unlock only on this circuit.

*Locate: front grill*

**DL48D000 0 1 ELECTRIC DOOR LOCKS WIRED TO OEM SWITCHES**

The module door locks and compartment locks (if ordered) are to be wired to the chassis door lock switches.

**DLH42000 0 1 RECESSED LICENSE PLATE BRACKET INCLUDING BACKUP LIGHTS**

A Cast Products #LP0003 recessed license plate bracket shall be installed per the attached drawing. The bracket will include lighting in the top to illuminate the license plate. It will also include (2) lights, 1-on either side of the license plate that will be wired to the reverse circuit.

**DM100000 1 1 REFLECTORS:**

All patient compartment entry doors shall have red reflectors in the lower corner.

**DR220000 1 1 RUBBER MATTING IN EXTERIOR COMPARTMENTS**

Ribbed rubber matting will be installed on the floor and shelves of all exterior compartments.

**DR23A000 1 3 RUBBER COVERED WALLS IN BACKBOARD COMPARTMENT**

The interior of the backboard compartment is to be covered with rubber matting to protect equipment stored in this area.

*Color: GRAY- rubber coated walls in streetside front, streetside rear and curbside rear compartments*

GREG ATWOOD

Year:

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Chassis:

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Model:

623

<i>Option</i>	<i>Std</i>	<i>Qty</i>	<i>Header/Description/Data</i>	<i>Proposal Total</i>
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DR23GL00	0	1	<b>GRIP LOCK TRIM ON FACE OF EXTERIOR SHELVES AND DIVIDERS</b> Install grip lock trim on the vertical edges of the compartment shelves and the front face of any vertical divider.	
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**E PAINT AND STRIPING**

ED02F000	0	1	<b>PAINT CHASSIS, medium duty</b> The chassis cab shall be painted with the following special paint color and paint code:  <i>Color: Match Red Sikkens 3225, and black autocrylic 101 chassis to be red from the bottom of the windows down. Hood to be red, window pillars and chassis roof to be black.</i>	
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ED050000	0	1	<b>MODULE PAINT: other color</b> Paint MODULE special color <i>Paint Color: match Sikkens FLNA 3225 : top match Black Autocryl 101</i>  <i>Module to be red from 1" below the Red M9 series lights;Upper section and roof to be black.</i>	
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ED20AA00	1	1	<b>STRIPE: 8" Scotchlite beltline</b> Apply an 8" Scotchlite beltline stripe in the color listed below: <i>Color: Black Scotchlite</i>	
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ED300000	1	1	<b>PIN STRIPE: 1/4" black</b> The single color stripe as described above shall include a 1/4"black pinstripe that surrounds the entire accent stripe. <i>Install at paint break on chassis and body.</i>	
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**F INTERIOR CABINET DOORS, HANDLES & HARDWARE**

FE010000	1	1	<b>FULL HEIGHT PULL HANDLES ON SLIDING PLEXIGLAS DOORS</b> All sliding cabinet doors to have full length pull handles.	
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GREG ATWOOD

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**Option Std Qty Header/Description/Data Proposal Total**

**FE01FT00 1 1 LATCH, HINGED DOOR: Southco flush stainless steel pull style**  
Install stainless flush mount Southco pull latches on the hinged interior cabinet doors.

**FE02A000 1 1 PLEXIGLAS COLOR: light tint**  
All Plexiglas doors to be light tint.

**FE06B000 0 3 AVONITE COUNTER TOP WITH COVERED INTERIOR EDGES**  
An Avonite counter top shall be installed made from the material listed below. The inside vertical and horizontal shall have a smooth rounded radius instead of a 90 degree mated surface.  
*Color: Brazilian blue*

**FE08ST00 1 1 INHALATION PANEL (STANDARD):**  
The inhalation panel is to be fabricated from composite material and covered with Formica to match to color selected.

**G INTERIOR COLORS, UPHOLSTERY AND SEATING**

**GF01H000 0 1 INTERIOR COLOR SCHEME: DESIGNER BLUE METALLIC**  
Floor: LONCOIN FLECKSTONE SAPPHIRE #152  
Risers: WILSONART INDIGO #D379-01  
Walls: WILSONART WHITE #1570-01  
Cabinets: WHITE PAINT  
Upholstery: SPIRIT MILLENIUM IMPERIAL BLUE #US432  
Countertop: STAINLESS STEEL  
(option) AVONITE - BRAZILIAN BLUE #K3-8100  
Accent Stripes: WILSONART COPPER DUST #L6432

**GF02M000 1 1 INSIDE CABINET FINISH: paint**  
The interior of all aluminum cabinets shall have a durable paint finish. The painted surface shall be washable and non-absorbent.

GREG ATWOOD

**Year:**

2012

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**Model:**

623

<b>Option</b>	<b>Std</b>	<b>Qty</b>	<b>Header/Description/Data</b>	<b>Proposal Total</b>
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<b>GF02P000</b>	<b>1</b>	<b>1</b>	<b>RISERS:</b> The interior of this vehicle is to contain no wood or wood products. The risers are to be made of reinforced structural composite board covered with Formica per the color description.	
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<b>GK12D000</b>	<b>0</b>	<b>1</b>	<b>EVS CHILD SAFETY SEAT WITH 3-POINT SEAT BELT</b> Delete the standard attendant seat cushion. Install a high back bucket seat with built in child seat restraints and 3-point occupant restraint. The seat to be adjustable front to rear.	
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<b>GK140000</b>	<b>1</b>	<b>1</b>	<b>SEAT BELTS:</b> Install standard seat belt package for use with HOPS.	
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**H INTERIOR CABINETRY, STREET SIDE**

<b>HK001000</b>	<b>1</b>	<b>1</b>	<b>HOPS SYSTEM:</b> The unit is to be equipped with the HOPS system.	
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<b>HK01D000</b>	<b>0</b>	<b>1</b>	<b>ADJUSTABLE VERTICAL DIVIDERS:</b> Install adjustable shelf tracks recessed into the upper and lower interior cabinet walls. Fabricate Plexiglas dividers to fit vertically into the cabinet and between the recessed tracks. The dividers shall be adjustable within the track and held into position with cushioned track shelf supports.  <i>Locate: full height, no middle shelf: cabinet above action area</i> <i>Qty:6</i>	
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<b>HK01R000</b>	<b>0</b>	<b>3</b>	<b>LIFT UP CABINET FRAMES: street-side</b> Fasten the Plexiglas door frame extrusion to a piano hinge secured to the cabinet wall. The complete frame and doors shall hinge open upward providing total access to the cabinet behind. The frame shall be held open with gas charged cylinders and secured in the down position with a sliding dead bolt.  <i>Locate: three top cabinets</i>	
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**Chassis:**

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**Model:**

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- |          |   |   |   |  |
|----------|---|---|---|--|
| HK03D000 | 0 | 1 | <b>PULL OUT DRAWER INSTALLATION IN MAIN CABINET WALL</b><br>Pull out drawer(s) shall be installed in the main cabinet wall at the locations listed below.<br><i>Location: by CPR seat, see bid drawings</i>   |  |
| HK11F000 | 0 | 1 | <b>LOCKING DOOR: SIMPLEX ELECTRIC LOCK:</b><br>A Simplex electric lock shall be installed where designated.<br><i>Locate: Kaba Mas electric lock installed on designated drug cabinet in HVAC stack.</i>  |  |
| HK14B000 | 0 | 1 | <b>LIFEPAK 12 SWIVEL BRACKET</b><br>A swivel bracket for a Lifepak 12 shall be installed as counter aft of CPR seat   |  |
| HK17G000 | 0 | 1 | <b>SHARPES/WASTE STORAGE IN A TIP OUT DOOR IN MAIN CABINET WALL</b><br>Install both sharps and waste containers on a tip-out door within the main cabinet wall. The door shall be specifically located as noted below.<br><i>Locate: under action area counter next to CPR seat. See bid Drawings</i> |  |
| HK270000 | 0 | 1 | <b>INSIDE/OUTSIDE ACCESS TO STREETSIDE REAR COMPARTMENT</b><br>Provide interior access to exterior compartment to the street side rear compartment.<br><i>Door Style: sliding plexiglas ( see bid drawings)</i>   |  |

**I INTERIOR CABINETS AND SQUAD BENCH, CURB SIDE**

- |          |   |   |   |  |
|----------|---|---|---|--|
| IA200000 | 1 | 1 | <b>SQUAD BENCH STORAGE:</b><br>Storage shall be provided under the bench cushions. The area shall be approximately 6" deep and shall run where possible under the bench. The storage pan shall be fabricated from aluminum and shall be accessed by raising the split cushions. |  |
| IG06EB00 | 0 | 1 | <b>WINDOW: eraser board</b><br><br><i>Fixed dry erase board near the squad bench window.</i>  |  |

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IG070120	0	1	<b>HOPS END RESTRAINT USED WITH DUAL VERTICAL BOTTLE STORAGE</b> Install a restraint that is 19" above the seating surface at the head end of the bench. Standard for use in conjunction with HOPPS 3-point seat belts. Used in conjunction with option #IN09F000 dual vertical bottle storage. <i>Install a cargo Net from the top of the barrier wall to the ceiling.</i>	
IG10A000	1	1	<b>BENCH HOLD OPENS: gas</b> Install gas spring hold opens on squad bench lid.	
IG10Q000	1	1	<b>BENCH HOLD-DOWN: paddle latches (Pair)</b> Install recessed paddle latches into the squad bench riser to retain the squad bench lids in the closed position. The latches shall be both passive and positive.	
IG15A000	1	1	<b>BENCH CUSHION EDGE TRIM:</b> Trim bench cushion edge with protective aluminum trim, to protect horizontal edge of squad bench cushion from tears..	
IK17B000	0	1	<b>TIP OUT WASTE DISPOSAL IN FORWARD AISLE SIDE OF SQUAD BENCH</b> A tip out trash door with removable container attached will be installed in the forward portion of the squad bench facing the aisle. A closeout will be installed inside the bench so the area is closed off to in bench storage. <i>tipout trash only. Horton will install a Sage Model 8616-1H locking sharps container at location determined at customer final inspection.</i>	
IK18AA00	1	1	<b>CURBSIDE OVERHEAD CABINET: hinged doors</b> Storage shall be provided above the squad bench. The storage shall run the full length of the squad bench and shall be accessed through hinged Plexiglas doors that are held in the open position with gas activated rods. The entire cabinet shall be fabricated from aluminum. The cabinet is to be 9" H to meet current K	
IN09F000	0	1	<b>"D" BOTTLE STORAGE IN HEAD OF BENCH FACING STEP WELL</b> Recessed storage for (2) F.W. #521 bottle brackets will be provided in the head of bench recessed through the floor. Access will be provided by an opening in the face of the bench facing the step well. (FW #521 brackets must be selected separately).	

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ISP00001 0 1 SPECIAL INSTRUCTION, CURBSIDE CABINETRY

*top cabinet shall have storage for two gloves boxes ( see drawings)*

**J INTERIOR CABINETS, FRONT**

JE040000 4 4 FRONT WALL DOORS: Plexiglas

Front cabinet wall to have hinged Plexiglas doors, and latch type as designated.

Type: Plexiglas

Latch Style: Southco

JK140000 0 1 CROSSOVER CABINET

An aluminum crossover cabinet is to be installed above the Walkthrough/passthrough and is to include a solid hinged door.

*cabinet will include Kaba Mas Electronic lock*

SP00001 0 1 SPECIAL INSTRUCTION, FRONT WALL CABINET

*Install full width cabinet with 4 equal sized solid hinged doors. Doors will have K lock. For locks to function, there must be a fixed shelf. Slide out shelf will be installed, and electrical outlet provided. Final details will be determined at post bid meeting. Greenwood will supply Medi Quick safe Temp4L, precision Thermo Electric Mini- Fridge with LED temp display and lock.*

**K MODULE INTERIOR ACCESSORIES AND TRIM**

KG02B000 2 4 IV HANGER, CAST PRODUCTS WITH RUBBER ARM

Cast products recessed IV hangers with rubber arms for attaching solution bags shall be installed in the designated locations.

Locate: Per prints

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**KG08I000 0 3 GRAB RAIL INSTALLATION,. ANTI-MICROBIAL ANTI-SLIP**

Install 2' anti-slip stainless steel grab rail with anti-microbial Coating by curbside door and two 6" rails over cot.

**KG09K000 1 1 PATIENT DOOR GRAB RAILS: angled with anti-microbial coating**

All patient access doors to have heavy duty angled stainless steel grab rails with smooth radius corners and flange mounting and anti-microbial coating.

**KG110000 1 1 FLOOR TRIM**

Trim floor with cove molding at non rolled areas of floor.

**KG120000 1 1 CABINET TRIM**

Trim all vertical and horizontal edges.

**KG16B000 1 1 CEILING MATERIAL, PLATINUM WHITE ALUMINUM COMPOSITE**

The standard module ceiling material shall be platinum white aluminum composite.

**KG17A000 2 2 FIRE EXTINGUISHERS: 5lb ABC**

Supply five pound fire ABC extinguisher(s). Ship loose, or identify mounting location(s).

Locate: SHIP LOOSE

**KL33B000 0 1 REAR RADIO SPEAKERS**

Install two rear speakers in patient compartment.  
Volume control to be integral to the rear switch panel and controlled by individual up/down momentary switches.

Locate: Module Ceiling

**L COT MOUNTS AND ACCESSORIES**

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LG03B000	1	1	<b>COT MOUNT STYLE: 175-4 dual position</b> Cot mount to be dual position FW 175-4 for CPR cabinet wall.	
MAM148F0	1	1	<b>FRONT LIGHTBARS FOR 96" BODIES</b>	
mam15f8c	0	1	<b>LIGHTBAR FRONT, 4500 CUSTOM 88"</b> Configure: <i>Whelen Freedom Super LED light bar with built in LED Opticom. R/C/R/Opticom/R/C/R . Note: all lens are to be clear.</i>	
mam20d00	0	1	<b>LIGHT BAR MOUNT: front box roof, surface mount</b> Mount light bar on front of module body roof.	
MM			<b>ELECTRICAL EMERGENCY VISUAL WARNING SYSTEMS</b>	
MM01A000	0	1	<b>WIG WAG HEADLIGHTS:</b> Install wig wag headlight flasher.	
MM03000	1	1	<b>WHELEN M SERIES LIGHTING OPTIONS:</b>	
mm04r00	0	2	<b>M4 SERIES LED, RED</b> Whelen M4 series L.E.D. lights shall be installed in the designated locations. <i>Location: Intersection lights Lens color:Clear</i>	
mm07a00	0	1	<b>M7 SERIES LED, AMBER</b> Whelen M7 series L.E.D. lights shall be installed in the designated locations. <i>4/4/2012 Location:Over rear doors per KKK Lens color:Clear</i>	

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mm07r00	0	4	<b>M7 SERIES LED, RED</b> Whelen M7 series L.E.D. lights shall be installed in the designated locations. <i>Location: (4) in grill,</i> <i>Lens color: Clear</i>	
mm07w00	0	1	<b>M7 SERIES LED, WHITE WITH CLEAR LENS</b> Whelen M7 series L.E.D. lights shall be installed in the designated locations. <i>Location: (front center on Module, per KKK)</i>	
mm09a00	0	2	<b>M9 SERIES LED, AMBER</b> Whelen M9 series L.E.D. lights shall be installed in the designated locations. <i>Location: rear at door level, under Red KKK lights</i> <i>Lens color: Clear</i>	
mm09r00	0	10	<b>M9 SERIES LED, RED</b> Whelen M9 series L.E.D. lights shall be installed in the designated locations. <i>Location: All KKK corner locations (2), and rear at window level (2) over Amber lights.</i> <i>Lens color: Clear</i>	
MM10C500	0	4	<b>COMPARTMENT WARNING LIGHT, 500 SERIES TIR6 LED</b> A 500 series TIR6 LED light with chrome mounting flange shall be installed on the inner door panel of the selected compartment door. The light shall flash when the compartment door is open and the vehicle warning lights are activated. <i>Compartment: all Streetside compartments, and Curbside rear compartment.</i> <i>Locate: Tops of doors</i> <i>Color: RED</i>	
MM10D500	0	3	<b>ENTRY DOOR OPEN WARNING LIGHT, 500 SERIES TIR6 LED</b> A 500 series TIR6 LED light with chrome mounting flange shall be installed on the inner door panel of the module body entry door. The light shall flash when the entry door is open and the vehicle warning lights are activated. <i>A 500 series TIR6 LED light with chrome mounting flange shall be installed on the inner door panel of the module body entry door. The light shall flash when the entry door is open and the vehicle warning lights are activated.</i> <i>Locate: tops of doors</i> <i>Color: red</i>	



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**MM26SH00 1 1 HOUSINGS FOR I-SECTION LIGHTS, 400 HALOGEN OR STROBE, NAVISTAR**  
Whelen #4IITK1 housings will be utilized to mount Whelen 4E series strobe or halogen intersection lights.

**MM26UL00 1 1 HOUSING FOR WHELEN 700 SERIES L.E.D. GRILLE LIGHTS, NAVISTAR**  
Whelen #7GILKT1 housings will be utilized to mount Whelen 700 series L.E.D. grille lights.

**MM800000 0 1 WHITE LIGHT CUTOFF SWITCH**  
A switch shall be installed in the front control panel that will deactivate all forward facing white flashing lights.

**MN AUDIBLE EMERGENCY WARNING SYSTEMS**

**MN09N000 1 1 AIR HORN: medium duty chassis**  
The chassis shall have air horns installed from the chassis manufacturer. The air horns shall use the chassis air system. The air horns can only be activated when the vehicle is in gear.  
*Trumpet Locate: front fenders*  
*Activation: steering wheel, and passenger side of dash*

**MN35CA00 0 1 SIREN, WHELEN #295SLSA1**  
A Whelen #295SLSA1 siren shall be installed.  
*NOTE Model: Whelen 295HFSA1*

**MN40A000 1 1 SIREN INSTALL:**  
The siren listed above shall be supplied and mounted as defined.

**MN45UM00 1 1 SPEAKERS, SA3808**  
Install SA3808 siren speakers.

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**MN50A000 1 1 SPEAKER INSTALL: bumper**  
Speaker Selections (Bumper Installed)

**O LIGHTS**

**OL09M000 0 1 KKK SIDE BODY MARKER LIGHTS, M6 SERIES L.E.D. (PAIR)**  
Install red Whelen L.E.D. M6 series turn/marker lights on each rear side of the module body. Lights provide module body night time side lighting visibility and turning signal indication.  
*Clear lens if available*

**OL34L000 1 1 LED EXTERIOR COMPARTMENT LIGHTING**  
All exterior compartments will be lighted with LED strip lighting.  
A vertical strip will be installed inside both sides of each compartment. The lights shall be directed toward the back of the compartment.  
*Note: This does not include wheelwell compartments.*

**OL350000 1 1 ICC MARKER LIGHTS**  
LED ICC marker lights shall be installed.

**OL41B000 0 1 RUNNING BOARD LIGHTS, WHELEN PAR 16 L.E.D.**  
Clear Whelen Par 16 round L.E.D. lights mounted in chrome flanges shall be installed in the front of the module body. Locate in the stainless steel stone guard above the running boards. The lights shall be wired to the chassis door switch and illuminate the step/running board.

**OM25CW0 0 6 M9 SERIES LED SCENE LIGHT**  
Install Whelen M9 series LED side scene lights.  
*Locate: two per side, by drip rails(4), as per drawings, and mount (2) M series 17 degree loading lights over rear doors.*

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OM30D000	0	1	<b>TAIL LIGHTS, M6 SERIES</b> Whelen M6 series brake/tail, amber arrow turn and backup lights to be installed in the selected location. <i>Locate: Stacked on rear</i>	
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P			<b>ELECTRICAL POWER GROUP</b>	
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PAL00003	1	1	<b>INTELLIPEX MULTIPLEX ELECTRICAL SYSTEM:</b> Install the Intelliplex Multiplex electrical system.	
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PAL00S00	0	1	<b>SECOND REAR CONTROL PANEL-SURFACE MOUNT:</b> Install a second rear electrical control panel. The control panel is to be a duplicate of the inhalation area panel and is to be surface mounted as noted below. <i>Locate: On curbside wall between door and window</i>	
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PAL01B00	1	1	<b>BATTERY SWITCH: std. operation</b> The "Master" battery switch shall switch battery power "on" and "off" to the ambulance body and conversion added electrical circuits only. All OEM chassis electric's, (headlights, ignition, keep alive) shall remain wired "hot" and have no ability to be switched "off", and provide circuit function as provided by the chassis manufacturer.	
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PAL02200	1	1	<b>INVERTER INSTALL OPTIONS:</b>	
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PAL02M00	0	1	<b>INVERTER: 20-1050CUL-DC W/CHARGER &amp; 20 AMP AUX POWER, MEETS KKK-F</b> A Vanner Inverter #20-1050CUL-DC with battery charger and 20 amp auxiliary power source shall be installed in the selected location. In addition an inverter status panel #LSIL and battery status panel #LSCR shall be installed. This charger and auxiliary power source conforms with KKK 1822F specification.	
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4/4/2012 *Locate: Streetside top compartment*

*On Demand*

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**PAL30A00 2 6 110V INTERIOR OUTLET**

Two 110V interior outlets are provided as standard on all models. The standard locations are in the inhalation area and the wall over the squad bench. Additional outlets are to be specified as to their location.

Locate: Inhalation area,

Locate: Wall over squad, over and under pass thru counter.

Locate: upper back wall, front cabinet

**PAL31C00 3 5 INTERIOR 12VDC OUTLETS: cigarette lighter type**

12 volt outlets to use cigarette lighter style connectors.

Locate: Inhalation area (2) TBD

Locate: Front wall cabinet, pass thru wall, & squad bench

Configure: Always hot

**PAL38C00 0 1 SHORELINE: 20 amp eject**

Install a 20 amp Kussmaul auto ejection shoreline receptacle. Include a dynamic disconnect.

Locate: street side module body

**PAL38IL0 0 1 SHORELINE INDICATOR:**

Install an indicator pilot light to show power to A.C. circuits and presence of activated shoreline.

Locate: ABOVE THE SHORELINE INLET

Configure: LED

**PAL40000 1 1 EXTRA 12VDC CIRCUIT BREAKER:**

An extra circuit breaker shall be installed.

**PL10B000 1 1 SWITCH PANEL MOUNT:**

Switch panel to be flush mounted in OEM dash area over the front console.

**PL11A000 0 1 LIGHT PROGRAMMING: side rear scene**

The side rear scene lights shall be wired to transmission reverse, plus standard mode of operation.

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PL11B000	0	1	<b>LIGHT PROGRAMMING: right side scene</b> The right side scene lights shall come "on" when the side patient door is opened.	
PL11C000	0	1	<b>LIGHT PROGRAMMING: load light</b> The rear load lights shall be wired to transmission reverse, plus the standard mode of operation.	
PL11F000	1	1	<b>PROGRAMMING: AUDIBLE LOW VOLTAGE ALARM</b> Program an audible alarm to activate if the voltage drops below 11.8 volts for 120 seconds.	
PL11G000	1	1	<b>LIGHT PROGRAMMING: park brake</b> A warning shall display on the front console readout, advising to set the Parking Brake, should the modular disconnect switch be "ON" and the transmission placed in "PARK" or "NEUTRAL". It will also advise to Disengage the Parking Brake should the vehicle be placed into gear.  <i>Configure:                      wire alarm to activate with red flasher circuit</i>	
PL14A000	0	1	<b>LIGHT PROGRAMMING: cancel switches</b> Install (3) patient area momentary switches to control-rear loading, street side scene and the curbside scene lights. These switches shall override the position of the front control panel switches. The system shall default to normal operation with the door open circuit or by cycling the battery switch.  <i>Locate at foot of squad bench on riser</i>	
PL190000	1	1	<b>REPORT LIGHT:</b> A report light shall be located at the action wall to light the counter area	
PL20F000	0	1	<b>CLOCK, HORTON LARGE FACE DIGITAL</b> Install a Horton large face digital Franklin 12/24 hour clock in the location noted below.  <i>Locate:                              Over rear doors</i>	

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**PL220000 1 1 STEP WELL LIGHT:**

Install one step well light for the right side patient door.  
Light to come on when door is opened.

**PL24B000 0 3 FLUORESCENT LIGHTS:**

Install 24 inch 12 volt fluorescent ceiling light fixtures. Wire to charger/conditioner in addition to standard mode of operation.  
*Locate: space evenly over cot*

**PL24T000 0 1 LAMP TIMER: programmable**

Install an electronic momentary touch timer switch where specified. The switch will enable time limited operation of the below listed lights, with the battery switch in the off position.  
*Locate: curbside HOPS wall*  
*Light(s) Controlled: florescents*  
*SET ELAPSED TIME FOR 15 MINUTES*

**PL27CC00 0 7 LED PATIENT CEILING DOME LIGHT, WELDON**

Weldon LED dome lights will be installed in the designated areas of the patient ceiling.

*Locate: (3) OVER COT, (3) OVER BENCH and (1) above the walkthrough.*  
*(Recommended)*

**PL280000 1 1 GOOSE NECK PANEL LIGHT**

Install a flexible goose neck panel light in the following area.  
*Locate:by cab passenger seat*

**Q HEATING, AIR CONDITIONING AND INTERIOR ENVIRONMENT**

**QH29I100 1 1 HEAT/AC SYSTEM-COMPRESSOR & CONDENSOR, NAVISTAR,**

Install a ProAir 12V heat/AC system, complete with compressor and condenser, for the Navistar 4300. Unit is to include 3-ply replaceable carbon filters at the air intake point. This system shall not tap into the chassis OEM heat/AC system. Bottom mount condenser for DT466 installed under the vehicle.

*Note: Compressor to be ordered with the chassis.*

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QH29I200	0	1	<b>HEAT/AC SYSTEM-COMPRESSOR &amp; CONDENSOR, NAVISTAR, FACE</b> Install a ProAir 12V heat/AC system, complete with compressor and condenser, for the Navistar 4300. Unit is to include 3-ply replaceable carbon filters at the air intake point. This system shall not tap into the chassis OEM heat/AC system. Includes a top mounted condenser for DT466.	
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QH29N000	0	1	<b>PAINT AUXILIARY CONDENSOR, FRONT FACE, TO MATCH BODY:</b> Paint the auxiliary condensor mounted on the front face of the body to match the body color. Standard color is white.	
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QH300000	0	1	<b>ULTRAVIOLET LAMP IN A/C SYSTEM DUCT</b> Install an ultraviolet light in the A/C air duct.	
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QH310000	1	1	<b>3-PLY PANEL INTAKE FILTER</b> Install a 3-Ply Panel air intake filter ILOS. (1) 16.75" x 8.75" #10008973 for attendant seat base or above right front cabinet. (2) 13" x 18" #10009296 over #1 compartment or in bottom of linen cabinet. Filters will be behind stainless steel intake grills.	
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QL43A000	1	1	<b>POWER VENT: roof mount</b> Install roof mounted power vent.	
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QL43B000	1	1	<b>STATIC VENT: roof mount</b> Install roof mounted static vent.	
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**R CAB CONSOLE AND COMMUNICATIONS**

RJ01A000	1	1	<b>ANTENNA COAX 1:</b> An RG 58U coax shall be installed so that the ambulance conversion need not be disassembled.  <i>Exterior Termination: Module roof</i> <i>Interior Termination: Behind inhallation area</i>	
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RJ01B000	0	1	<b>ANTENNA COAX 2:</b> Install additional antenna coax and accesses. <i>Exterior Termination: Module roof</i> <i>Interior Termination: behind the driver seat</i>	
RJ040000	1	1	<b>RADIO CABLE PULL WIRE</b> A standard pull wire for radio installation shall be installed from behind the driver's seat to behind the inhalation panel.	
RJ05B000	1	1	<b>FRONT CONSOLE:</b> A console shall be fabricated to coordinate with the interior cab color. Room shall be provided on the face of the console for installation of radio and siren controls.	
RJ05C000	0	1	<b>CONSOLE EXTENSION:</b> A box for mounting radio heads and storage maps, books, or binders will be attached to the standard engine cover console. Standard box includes (3) 2.5 storage sections, and 8.5 faceplate for radio mounting.	
RJ080000	1	1	<b>RADIO POWER/GROUND:</b> Install 6 gauge cable to positive and ground studs for radio <i>Locate: bulkhead wall, behind driver seat</i> <i>Configure: battery switched</i>	
T			<b>OXYGEN AND SUCTION</b>	
TN002000	1	1	<b>OXYGEN BOTTLE MOUNT, VERTICAL TRACK FOR QRM-V</b> Vertical track for mounting of a QRM-V O2 bottle mount shall be welded on the back wall of the compartment in the right hand corner. The O2 bottle mount is adjustable for "M" or "H" size	
TN01MW00	1	1	<b>OXYGEN BOTTLE, CYLINDER BRACKET: Zico</b> Zico QRM-V oxygen bracket shall be installed. <i>Locate: standard location</i> <i>Tank Size: "M"</i>	



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<b>TN020000</b>	<b>0</b>	<b>1</b>	<b>OXYGEN ACCESS:</b> A clear Plexiglas door shall be provided in the patient area wall for access to the oxygen cylinder valve. The door shall be hinged so that it swings into the oxygen cylinder storage compartment. The opening shall be trimmed with anodized aluminum edging. O.D. dimension of the access is 7" wide x 11" high.	
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<b>TN030000</b>	<b>2</b>	<b>2</b>	<b>OXYGEN OUTLETS, STANDARD</b> Two oxygen outlets shall be provided as standard and shall be located in the inhalation panel.	
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<b>TN03A000</b>	<b>0</b>	<b>1</b>	<b>OXYGEN OUTLET: additional</b> Install additional oxygen outlet(s). <i>Locate: Over cot</i>	
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<b>TN040000</b>	<b>1</b>	<b>1</b>	<b>STANDARD OXYGEN OUTLETS,</b>  Oxygen and suction outlets are to be NCG style.	
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<b>TN04A000</b>	<b>0</b>	<b>1</b>	<b>ADAPTER TYPE: Ohio Diamond II</b> Oxygen outlets to be Ohio Diamond II.	
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4/4/2012

<b>TN050000</b>	<b>1</b>	<b>1</b>	<b>FLOWMETER:</b> Supply dial type flowmeter.	
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GREG ATWOOD

**Year:**

2012

**Chassis:**

Terrastar 108"

**Model:**

623

**Option Std Qty Header/Description/Data**

**Proposal Total**

<b>TN060000</b>	<b>1</b>	<b>1 OXYGEN WRENCH:</b> Install oxygen wrench in oxygen compartment. Mount secure so not left hanging. Mount with length of chain or cable so not	
<b>TN070000</b>	<b>1</b>	<b>1 HUMIDIFIER:</b> Supply (1) disposable oxygen humidifier.	
<b>TN100000</b>	<b>1</b>	<b>1 VACUUM OUTLET: inhalation wall</b> A single vacuum panel shall be installed in the inhalation area. The outlet shall be of the same style as the oxygen system and hooked to the onboard vacuum pump.	
<b>TN11A000</b>	<b>1</b>	<b>1 ASPIRATOR: RS-4X disposable</b> Install Rico RS-4X aspirator.	
<b>TN120000</b>	<b>1</b>	<b>1 VACUUM PUMP:</b> Install 12vdc electric suction pump.	
<b>TN160000</b>	<b>1</b>	<b>1 KKK SUCTION KIT:</b> A suction kit shall be included and shall incorporate a suction rinsing bottle, (1) pharyngeal tip, and (1) yoke connector.	
<b>TSP00001</b>	<b>0</b>	<b>1 SPECIAL INSTRUCTION, OXYGEN &amp; SUCTION</b>  Two FW 521 D bottle storage units will be installed at head of squad bench.	
<b>TSP00002</b>	<b>0</b>	<b>1 SPECIAL INSTRUCTION, OXYGEN &amp; SUCTION</b>  4/4/2012 Dealer will supply and install Smithworks IV warmer per instructions of Pelham Fire.	
<b>U</b>		<b>LETTERING</b>	

GREG ATWOOD

**Year:**

2012

**Chassis:**

Terrastar 108"

**Model:**

623

<b>Option</b>	<b>Std</b>	<b>Qty</b>	<b>Header/Description/Data</b>	<b>Proposal Total</b>
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<b>UP010000</b>	<b>0</b>	<b>1</b>	<b>LETTERING:</b> Lettering to be included.  <i>4/4/2012 Chevron pattern will be included on rear of vehicle except doors, and on bottom section of three module doors. The Chevrons vehicle stripe will be applied by Horton before lights are installed. All other lettering will be applied by dealer after Pelham fire views actual vehicle.</i>	
<b>UP180000</b>	<b>1</b>	<b>1</b>	<b>DOOR REFLECTORS</b> Install 2" x 12" strips of red Scotchlite at the top of each entry door placed horizontally.	
<b>Z02</b>	<b>0</b>	<b>1</b>	<b>Factory Pickup and Transportation</b> Allowance for vehicle pickup, transportation and drivers fee.	
<b>Z03</b>	<b>0</b>	<b>1</b>	<b>Dealer Prep. and Dealer Delivery</b> Allowance for vehicle preparation and delivery.	
<b>Z04</b>	<b>0</b>	<b>1</b>	<b>Fuel, Tags, Etc.</b> Allowance for fuel, tags and administrative.	

***Year:***

2012

***Chassis:***

Terrastar 108"

***Model:***

623

***Option Std Qty Header/Description/Data***

Proposal Total

***Total Configured***

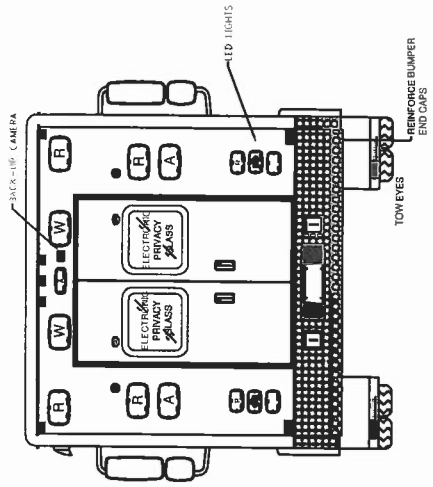
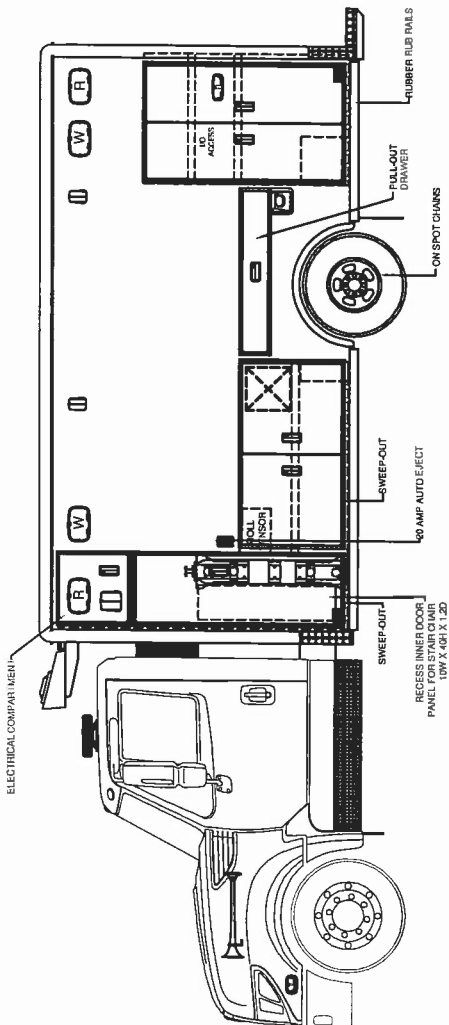
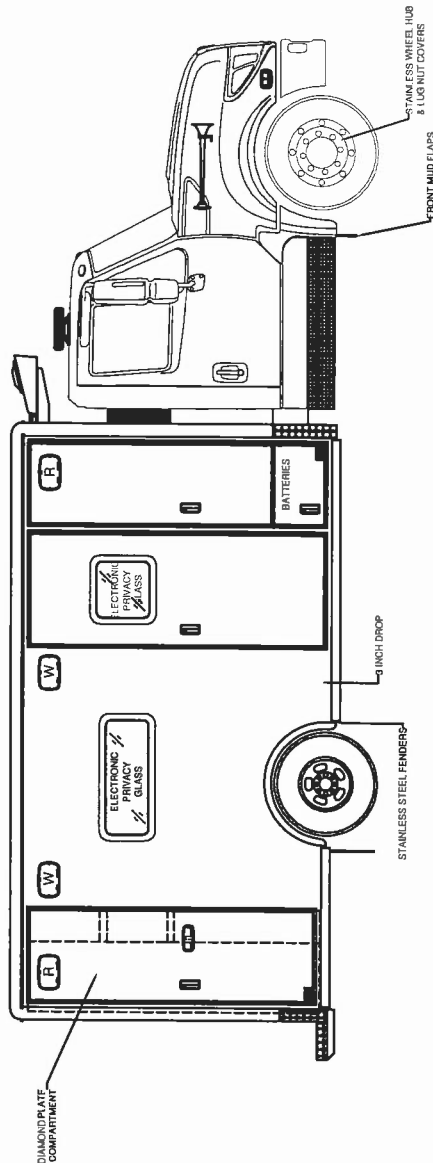
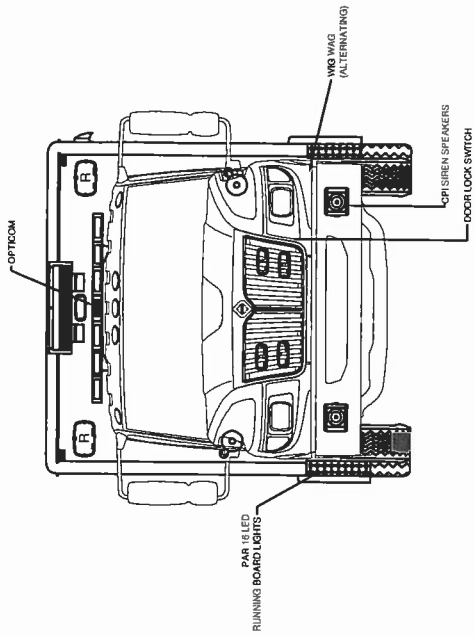
\$207,877.00

***Authorized Department Signature(s):***

PELHAM, N.H.

REVISIONS		
REV	DESCRIPTION	DATE
A	623 EXTERIOR	8/13/09

DRAWN BY: CMH



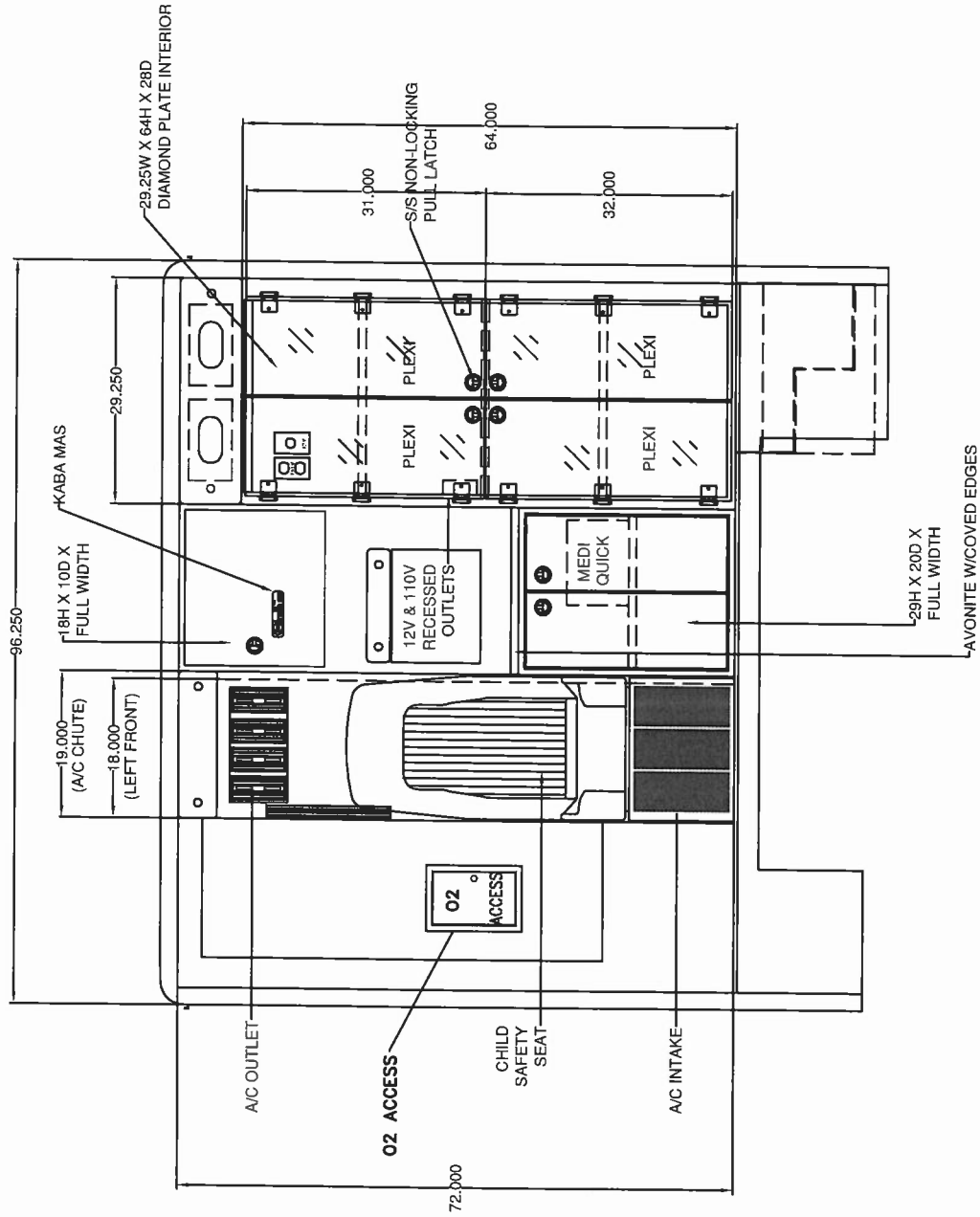
PROPOSAL DRAWING

1112-111

PELHAM, N.H.

REVISIONS		
REV	DESCRIPTION	DATE
A	623 WT FRONT WALL	8/12/09

DRAWN BY: CMH



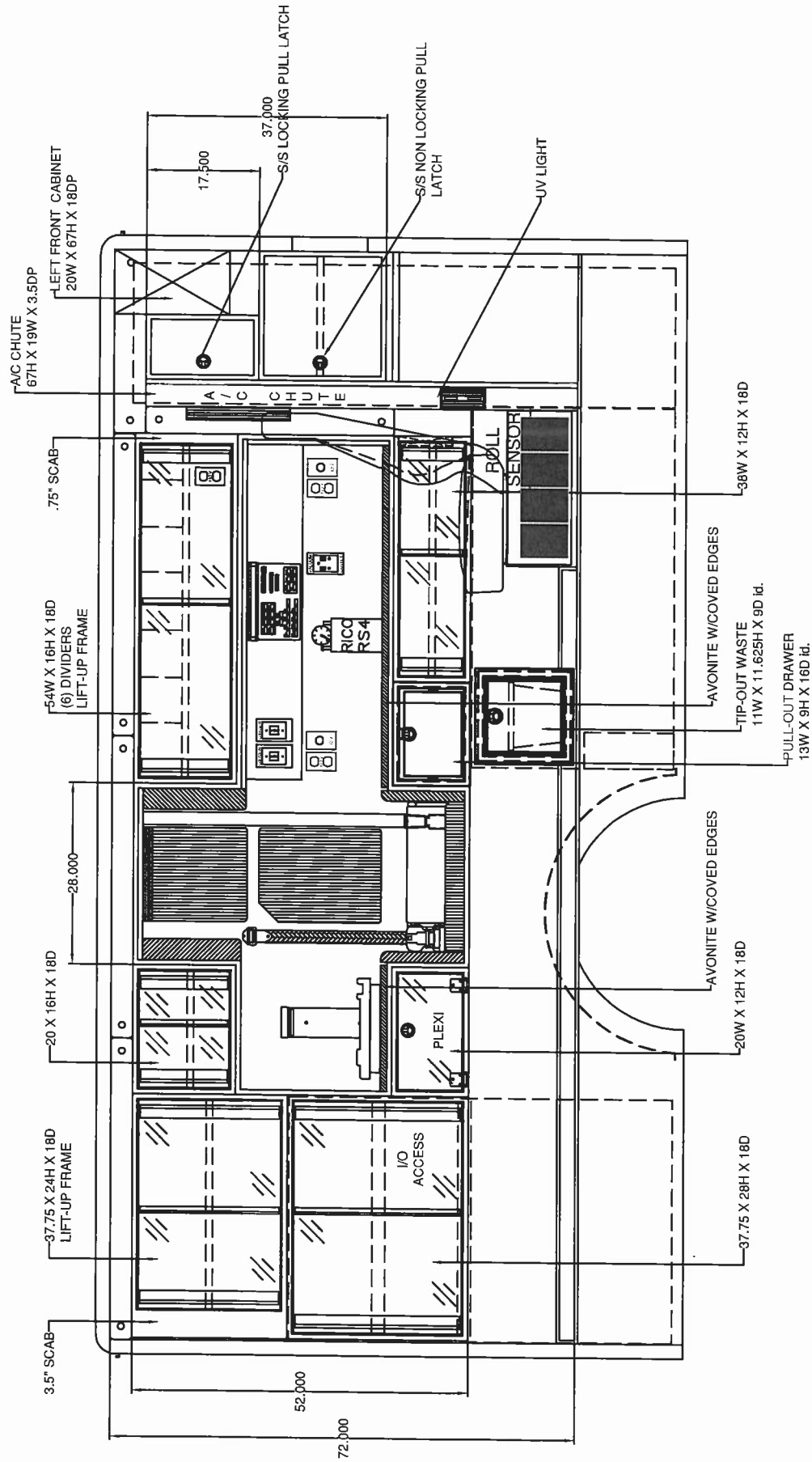
PROPOSAL DRAWING

1112-111

PELHAM, N.H.

REVISIONS		
REV	DESCRIPTION	DATE
A	623 WT CABINET WALL B	8/12/09

DRAWN BY: CMH

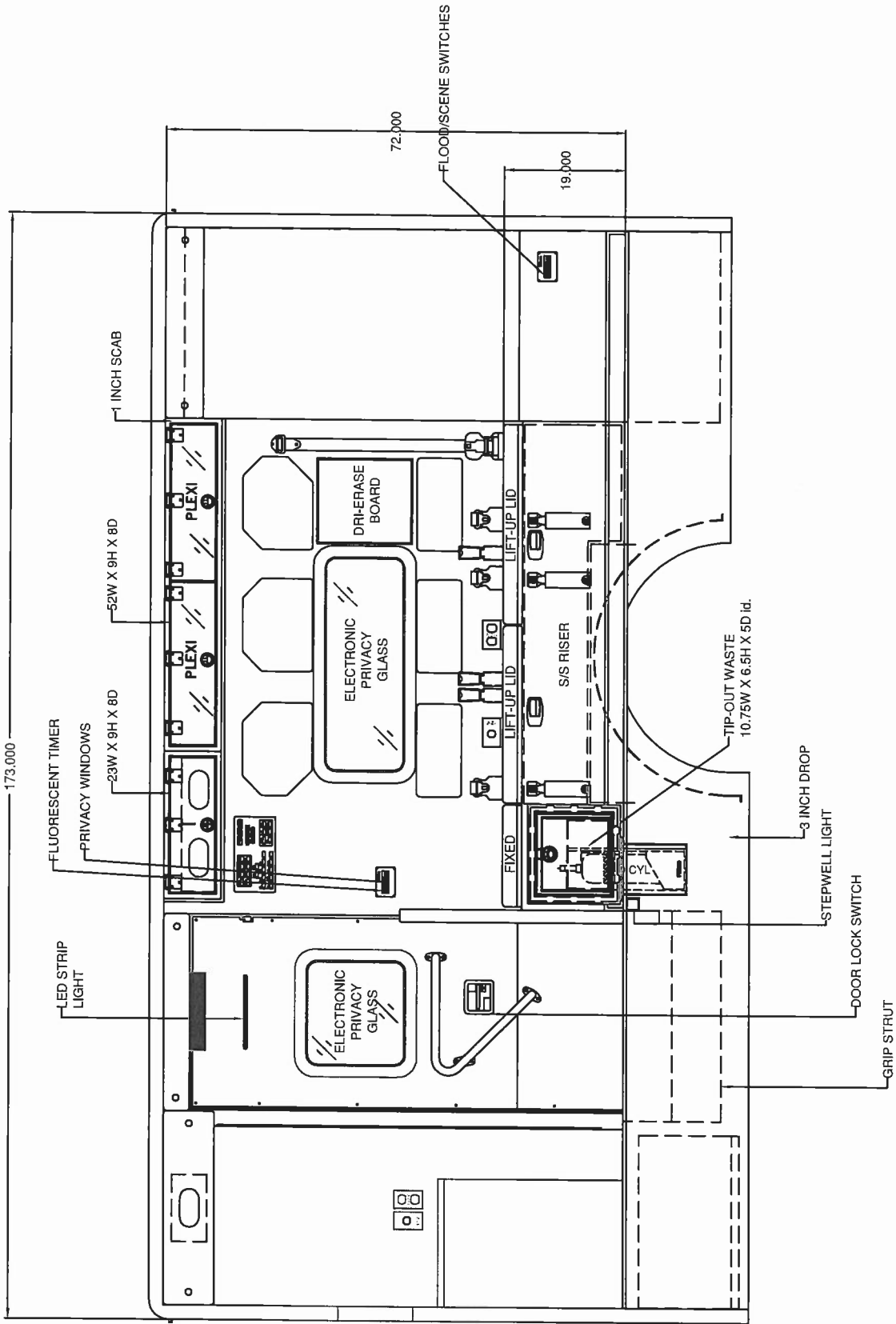


PROPOSAL DRAWING

1112-11

PELHAM, N.H.

REVISIONS		
REV	DESCRIPTION	DATE
A	623 WT SIDE WALL	8/12/09
DRAWN BY: CMH		



PROPOSAL DRAWING

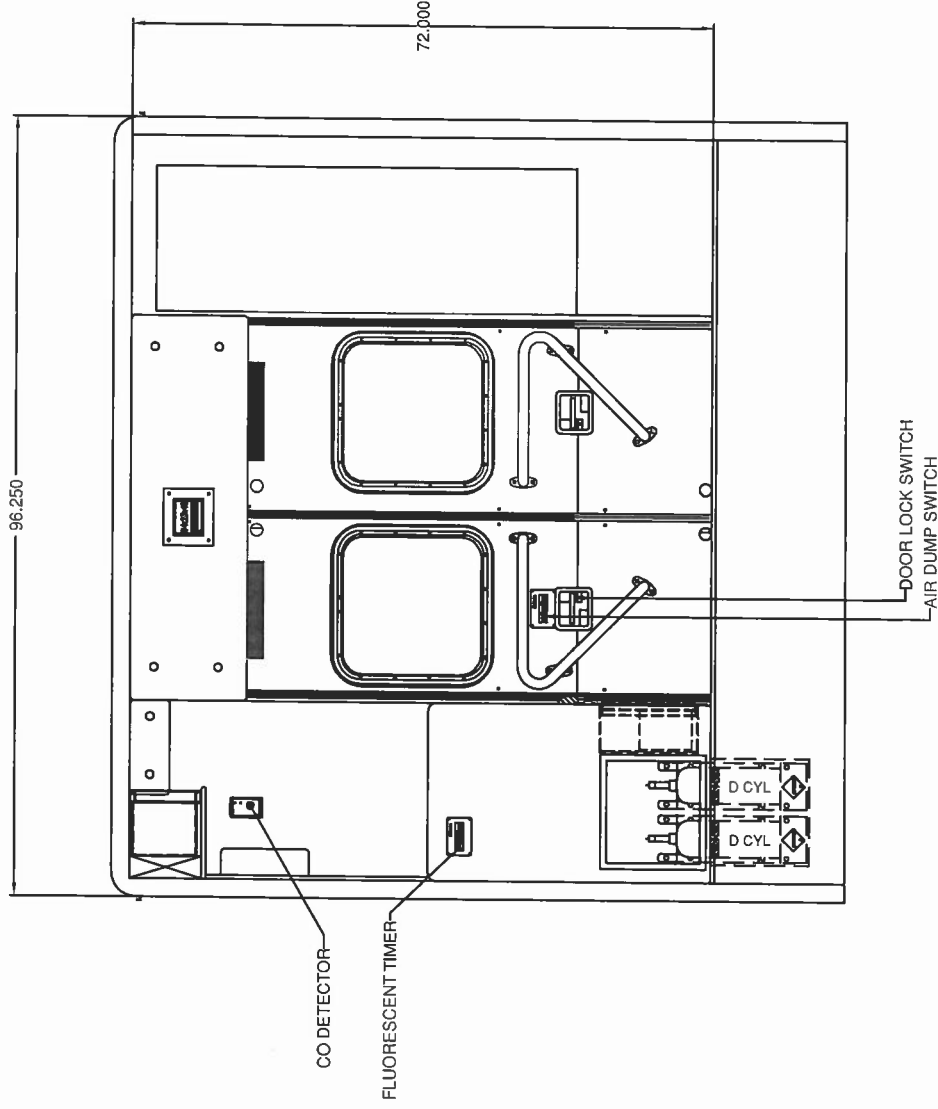
1112-111



# PELHAM, N.H.

REVISIONS		
REV	DESCRIPTION	DATE
A	623 HEAR WALL	8/12/09

DRAWN BY: CMH



## PROPOSAL DRAWING

## 1112-111

REVISIONS		
REV	DESCRIPTION	DATE
A	623 WT OVERHEAD B	8/13/09

DRAWN BY: CMH





3800 McDowell Road  
Grove City, Ohio 43123

(614) 539-8181  
FAX (614) 539-8165

Product No. 483.0002

**Non-Structural Warranty:** Horton Emergency Vehicles Company (HEVC), hereby warrants to each original purchaser of a Type I or Type III ambulance manufactured by HEVC that all non-structural material and workmanship incorporated in such ambulance by HEVC shall be free of defects.

This warranty extends only to standard HEVC features and published Standard HEVC Options. Special options and features not a part of HEVC's published option list shall be subject to such warranty, if any, as HEVC may designate in writing in each specific case.

The term of the warranty shall be a period of two (2) years from the date of manufacture (as noted on the Final Manufacturer's Certification Plate) or until the vehicle has been driven 24,000 miles, whichever occurs first.

Horton Emergency Vehicles Company extends no warranty with respect to the chassis, to components or equipment manufactured, assembled or installed by the chassis manufacturer or any interim manufacturer (including tires, batteries, bulbs, seats, upholstery, and other wear items) or to any components or equipment manufactured by others and installed by HEVC, all of which are the subject of warranties issued by other parties. HEVC will assist each owner in processing any claims under such other warranties.

This warranty is conditioned upon i) normal use and reasonable maintenance of such vehicle and covered attachments as recommended by HEVC, ii) prompt written notice of all defects to HEVC or its then authorized dealer in the owner's area, and iii) all repairs, modifications, and additions thereto being performed by HEVC or a party authorized by it. This warranty does not extend to, and will not cover, defects or conditions resulting from misuse, negligence, accident, or overloading beyond applicable weight rating. Upon the failure to satisfy any such conditions, this warranty shall become void and unenforceable.

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# Warranty

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Should repairs become necessary under the terms of this warranty, the extent of that repair shall be determined solely by HEVC and shall be performed solely by HEVC or a repair facility designated by HEVC. The expense of any transportation to or from such repair facility shall be for the account of the owner and is not covered by this warranty.

Within 60 days of transfer of ownership by the original purchaser, this warranty may be revalidated, provided that the original owner or subsequent owner has the vehicle inspected by HEVC or its authorized dealer and completes and files warranty revalidation forms available from HEVC. Upon subsequent transfers of ownership, this warranty may be revalidated in the same manner, provided that it has been revalidated on each proceeding transfer.

Horton Emergency Vehicles Company reserves the unrestricted right at any time and from time to time to make changes in the design of, and/or improvements on, its products without thereby imposing any obligation on itself to make corresponding changes or improvements in or on its products therefore manufactured.

**EXCLUSIONS AND LIMITATIONS:** THIS MANUFACTURER'S WARRANTY IS PROVIDED IN PLACE OF ANY AND ALL OTHER REPRESENTATIONS OR EXPRESS OR IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY. NO PERSON IS AUTHORIZED TO MAKE ANY OTHER OR FURTHER REPRESENTATION OR WARRANTY ON BEHALF OF HORTON EMERGENCY VEHICLES OR ANY OF ITS DEALERS. YOUR RIGHT TO SERVICE AND REPLACEMENT OF PARTS ON THE TERMS EXPRESSLY SET FORTH HEREIN ARE YOUR EXCLUSIVE REMEDIES AND NEITHER THE MANUFACTURER NOR ANY OF ITS DEALERS SHALL BE LIABLE FOR DAMAGES, WHETHER ORDINARY, INCIDENTAL OR CONSEQUENTIAL.



## IMPORTANT OWNER INFORMATION CONCERNING THE HORTON SERVICE WARRANTY

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### **What should be done to obtain warranty service?**

Contact an authorized Horton dealer or representative. They will make arrangements for the work to be done locally or at Horton Emergency Vehicles in Columbus, Ohio. Occasionally your dealer may need to obtain authorization from Horton Emergency Vehicles for major repair work. Please do not make arrangements yourself, since without approval from a Horton representative, you may be responsible for the total cost of repairs.

All bills for service under warranty must be submitted to Horton Emergency Vehicles by an authorized dealer. If you have any problems concerning service under warranty, please contact Horton Emergency Vehicles.

### **Does my warranty cover travel expenses to the service facility?**

No. This service warranty does not cover towing charges, mileage, travel expenses or personnel time.

### **What if I find it necessary to modify a component part of the vehicle?**

Your Horton warranty covers the vehicle as delivered. It is possible that a change or modification could alter the structural integrity of the vehicle or damage the equipment. Specific consent must be obtained from Horton engineers, in writing, if your warranty is to remain in effect.

### **What items are not covered by the Horton Service Warranty?**

Your Horton warranty covers only defects in workmanship or replacement of parts incorporated in the conversion of your vehicle. It does not cover chassis parts and equipment.

Loss of vehicle use, loss of time, inconvenience, or consequential damages are not covered under the Horton Service Warranty.

**Batteries** Batteries are as warranted by the manufacturer. If your battery fails due to a defect in material or workmanship, return it to the local outlet servicing that battery. If no outlet is immediately available, contact your Horton dealer or Horton Emergency Vehicles.

**Tires** Tires are subject to separate service adjustments offered by the manufacturer and complete details are noted in a booklet supplied by them. If you have a tire problem, take your vehicle to a representative of the manufacturer. Should you need assistance, contact your Horton dealer.

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## STRUCTURAL WARRANTY OF MAJOR COMPONENTS

Subject to the provisions, limitations and conditions set forth herein, Horton Emergency Vehicles Company (HEVC) hereby warrants to each original purchaser that each new modular ambulance body (exclusive of paint finish, hardware, moldings, windows, and other appointments and accessories) is structurally sound and free of all structural defects of both material and workmanship. HEVC further warrants that each such body will maintain its structural integrity for a period of fifteen (15) years from the date of manufacture, as designated on the manufacturer's certification plate attached thereto.

HEVC further warrants that the exterior doors and exterior door hinges of each such modular body are structurally sound and will remain free of joint separation, cracks, and all other structural defects for said fifteen (15) year period, and that all such exterior doors will remain in proper adjustment during said fifteen (15) year period.

The interior aluminum cabinetry, (exclusive of paint finish, hardware, moldings, and accessories) is warranted to be structurally sound and free of structural defects, and is warranted against structural damage caused by any water or engine coolant, during said fifteen (15) year period. Such cabinetry is warranted to be modular and removable and to be capable of being updated without welding or cutting of the body structure. (Updated cabinets installed at the owner's request will be at the owner's cost.)

Should the ambulance body be rechassis by HEVC during the original warranty period, the structural warranty set forth above will be revalidated for an additional five years from the expiration of the original warranty period. If the ambulance body is rechassis by HEVC a second or subsequent time during the original or any extended warranty period, HEVC will extend this structural warranty to five additional years from the date on which the body is last rechassis, provided that necessary repairs are authorized by the owner and performed by HEVC. The opportunity to extend this warranty will remain in effect for the life of the body and is subject to the conditions that i) the rechassis work must be performed only by HEVC and ii) that the rechassis work must be completed during the original or an extended warranty period. Any rechassis or modification work performed on the body by another party will immediately and permanently void this warranty.

This warranty is conditioned upon i) normal use and reasonable maintenance of such modular body and covered attachments as recommended by HEVC ii) prompt written notice of all defects to HEVC or its then authorized dealer in the owner's area, and iii) all repairs, modifications, and additions thereto being performed by HEVC or a party authorized by it. This warranty does not extend to, and will not cover defects or conditions resulting from misuse, negligence, accident, or overloading beyond applicable weight ratings. Upon the failure to satisfy any such condition, this warranty shall become void and unenforceable.

Should repairs become necessary under the terms of this warranty, the extent of that repair shall be determined solely by HEVC and shall be performed solely by HEVC or a repair facility designated by HEVC. The expense of any transportation to or from such repair facility shall be for the account owner and is not covered by this warranty.

Within 60 days of transfer of ownership by the original purchaser, this warranty may be revalidated, provided that the original or subsequent owner has the vehicle inspected by HEVC or its authorized dealer and completes and files warranty revalidation forms available from HEVC. Upon subsequent transfers of ownership, this warranty may be revalidated in the same manner, provided that it has been revalidated on each proceeding transfer.

Horton Emergency Vehicles Company reserves the unrestricted right at any time and from time to time to make changes in the design of, and/or improvements on its products without thereby imposing any obligation on itself to make corresponding changes or improvements in or on its products theretofore manufactured.

**EXCLUSIONS AND LIMITATIONS:** THIS MANUFACTURER'S WARRANTY IS PROVIDED IN PLACE OF ANY AND ALL OTHER REPRESENTATIONS OR EXPRESS OR IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY. NO PERSON IS AUTHORIZED TO MAKE ANY OTHER OR FURTHER REPRESENTATION OR WARRANTY ON BEHALF OF HORTON EMERGENCY VEHICLES OR ANY OF ITS DEALERS. YOUR RIGHT TO SERVICE AND REPLACEMENT OF PARTS ON THE TERMS EXPRESSLY SET FORTH HEREIN ARE YOUR EXCLUSIVE REMEDIES AND NEITHER THE MANUFACTURER NOR ANY OF ITS DEALERS SHALL BE LIABLE FOR DAMAGES, WHETHER ORDINARY, INCIDENTAL OR CONSEQUENTIAL.

## HORTON EMERGENCY VEHICLES COMPANY

3800 McDowell Road, Grove City, Ohio 43123



## ELECTRICAL SYSTEMS WARRANTY

Horton Emergency Vehicles Company (HEVC) hereby warrants to each original purchaser of a Type I, or Type III ambulance manufactured by HEVC incorporating HEVC's Intelliplex electrical system that the solid state components of such system, including all circuit boards, circuit board components, and circuit board connectors, shall be free of defects in material and workmanship, including loose connections, for a period of six (6) years from the date of manufacture, as designated on the manufacturer's certification plate attached thereto, or until the vehicle has been driven 72,000 miles, whichever occurs first. Specifically included in this warranty are the following:

- . flashers
- . ammeter, voltmeter and tachometer
- . automatic throttle
- . halogen light flasher units
- . patient area climate controls

The stationary wiring harness in such ambulance is warranted to be free of defects in materials and workmanship, including broken wires, chafed or pinched wires, and defective splices, for a period of ten (10) years from such date of manufacture. The harness includes that part of the wiring which is mounted in the modular body, up to but not including the termination points at the distribution boards or at accessory items.

Except as provided below, all other components of such system, including relays and solenoids, are warranted to be free of defects in material and workmanship for a period of two (2) years from the date of manufacture or until the vehicle has been driven 24,000 miles, whichever occurs first. Normal maintenance items such as light bulbs are not warranted.

Horton Emergency Vehicles Company extends no warranty with respect to chassis electrical systems or components, any electrical components or equipment installed by the chassis manufacturer, or to any components or equipment manufactured by others and installed by HEVC, all of which are the subject of warranties issued by other parties. HEVC will assist each owner in processing any claims under such other warranties.

This warranty is conditioned upon i) normal use and reasonable maintenance of such vehicle and covered attachments as recommended by HEVC, ii) prompt written notice of all defects to HEVC or its then authorized dealer in the owner's area, and iii) all repairs, modifications, and additions thereto being performed by HEVC or a party authorized by it. This warranty does not extend to, and will not cover, defects or conditions resulting from misuse, negligence, accident, or overloading beyond applicable ratings. Upon the failure to satisfy any such conditions, this warranty shall become void and unenforceable.

Should repairs become necessary under the terms of this warranty, the extent of the repair shall be determined solely by HEVC and shall be performed solely by HEVC or a repair facility designated by HEVC. The expense of any transportation to or from such repair facility shall be for the account of the owner and is not covered by this warranty.

Within 60 days of transfer of ownership by the original purchaser, this warranty may be revalidated, provided that the original or subsequent owner has the vehicle inspected by HEVC or its authorized dealer and completes and files warranty revalidation forms available from HEVC. Upon subsequent transfers of ownership, this warranty may be revalidated in the same manner, provided that it has been revalidated on each preceding transfer.

Horton Emergency Vehicles Company reserves the unrestricted right at any time and from time to time to make changes in the design of, and/or improvements on, its products without thereby imposing any obligation on itself to make corresponding changes or improvements in or on its products theretofore manufactured.

**EXCLUSIONS AND LIMITATIONS: THIS MANUFACTURER'S WARRANTY IS PROVIDED IN PLACE OF ANY AND ALL OTHER REPRESENTATIONS OR EXPRESS OR IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY. NO PERSON IS AUTHORIZED TO MAKE ANY OTHER OR FURTHER REPRESENTATION OR WARRANTY ON BEHALF OF HORTON EMERGENCY VEHICLES OR ANY OF ITS DEALERS. YOUR RIGHT TO SERVICE AND REPLACEMENT OF PARTS ON THE TERMS EXPRESSLY SET FORTH HEREIN ARE YOUR EXCLUSIVE REMEDIES AND NEITHER THE MANUFACTURER NOR ANY OF ITS DEALERS SHALL BE LIABLE FOR DAMAGES, WHETHER ORDINARY, INCIDENTAL OR CONSEQUENTIAL.**

### HORTON EMERGENCY VEHICLES COMPANY

3800 McDowell Road, Grove City, Ohio 43123



## **HORTON LIMITED FOUR YEAR 48,000 MILE PAINT WARRANTY**

Horton Emergency Vehicles hereby warrants to the original purchaser of any Horton Emergency Vehicle that the paint finish on the modular body will be free of defects in materials or workmanship and will perform according to the paint manufacturer's technical specifications for a period of four years or 48,000 miles, whichever occurs first, subject to the terms and conditions below.

This warranty is a full coverage warranty with no prorated items. All warranty coverage must be handled and authorized by Horton Emergency Vehicles, through its distributor network. During the warranty period, Horton will repair any defect covered by this warranty.

This warranty is subject to 1) normal use and reasonable maintenance of such modular body and other attachments as recommended by Horton Emergency Vehicles 2) prompt written notice of all defects to Horton Emergency Vehicles or its then authorized distributor in the owner's area prior to the expiration of the warranty period and 3) all repairs, modifications, and additions thereto being performed by Horton or a party authorized by Horton. This warranty does not extend to, and will not cover defects or conditions resulting from misuse; negligence; accident; or chips, scratches and gloss reduction due to normal use and wear. It will not cover chassis paint that is applied by the chassis manufacturer or paint applied to specific accessories by the manufacturer of said accessory. The failure to satisfy any such condition shall make this warranty void and unenforceable.

Should repairs become necessary under the terms of this warranty, the extent of the repair shall be determined solely by Horton Emergency Vehicles or a repair facility designated by Horton. The expense of any transportation to and from such facility shall be the obligation of the owner and is not covered by this warranty. Horton shall have no obligation to provide a replacement vehicle while repairs are made.

Horton Emergency Vehicles reserves the right at any time and from time to time to make changes in the design of, and/or improvements on its products without thereby imposing any obligation on itself to make corresponding changes or improvements in or on its products theretofore manufactured.

This manufacturer's warranty with regard to paint defects is provided in place of any and all representations and warranties, expressed or implied, including the implied warranty of merchantability. No person is authorized to make any other or further representation or warranty on behalf of Horton Emergency Vehicles. The terms and conditions expressly set forth herein are the sole and exclusive remedies with regard to any and all paint defects and neither Horton Emergency Vehicles nor any of its distributors shall be liable for damages as a result of any paint defect, whether ordinary, incidental, or consequential.

**HORTON EMERGENCY VEHICLES**

3800 Mc Dowell Rd., Grove City, Ohio 43123





**Ford Motor Company**

*Is proud to recognize*

*Horton Emergency Vehicles*

*as a participant in the*

*Ambulance*

*Qualified Vehicle Modifier Program*



A handwritten signature in black ink, reading "Randy M. Feiburger".

Randy M. Feiburger -- SVE Quality Programs Mgr.

*February, 2009*





**NATIONAL TRUCK EQUIPMENT ASSOCIATION**

*is proud to recognize*

**Horton Emergency Vehicles Co.**

*as a member in good standing of the*



**Ambulance Manufacturers Division**

Since August, 1986

*David L. Kell*  
AMD Secretary



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
6/28/2011

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

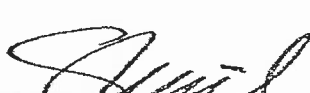
PRODUCER	Lockton Companies, LLC-1 St. Louis Three City Place Drive, Suite 900 St. Louis MO 63141-7081 (314) 432-0500	CONTACT NAME:	
		PHONE (A/C, No, Ext):	FAX (A/C, No):
		E-MAIL ADDRESS:	
		INSURER(S) AFFORDING COVERAGE	NAIC #
		INSURER A: The Charter Oak Fire Insurance Company	25615
		INSURER B: The Phoenix Insurance Company	25623
		INSURER C: National Union Fire Ins Co Pittsburgh PA	19445
		INSURER D: Travelers Property Casualty Co of America	25674
		INSURER E:	
		INSURER F:	

COVERAGES HOREN60 2256 CERTIFICATE NUMBER: 10936407 REVISION NUMBER: XXXXXXXX  
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY	N	N	Y-660-4052-R029-COF-11	7/1/2011	7/1/2012	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY						
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR						
	GENL AGGREGATE LIMIT APPLIES PER:						
	<input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						
B	AUTOMOBILE LIABILITY	N	N	Y8104052R029PHX11	7/1/2011	7/1/2012	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ XXXXXXXX BODILY INJURY (Per accident) \$ XXXXXXXX PROPERTY DAMAGE (Per accident) \$ XXXXXXXX Comp/Coll Ded \$ 1,000
	<input checked="" type="checkbox"/> ANY AUTO						
	<input type="checkbox"/> ALL OWNED AUTOS						
	<input type="checkbox"/> HIRED AUTOS						
	<input type="checkbox"/> SCHEDULED AUTOS						
	<input type="checkbox"/> NON-OWNED AUTOS						
	<input checked="" type="checkbox"/> Garage Keepers*						
C	UMBRELLA LIAB	N	N	BE11172345	7/1/2011	7/1/2012	EACH OCCURRENCE \$ 25,000,000 AGGREGATE \$ 25,000,000
	<input checked="" type="checkbox"/> EXCESS LIAB						
	<input type="checkbox"/> CLAIMS-MADE						
	DED <input checked="" type="checkbox"/> RETENTION \$ 10,000						
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	N	N	YJUB-2555R-798-11	7/1/2011	7/1/2012	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER EL EACH ACCIDENT \$ 1,000,000 EL DISEASE - EA EMPLOYEE \$ 1,000,000 EL DISEASE - POLICY LIMIT \$ 1,000,000
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	Y/N	N/A				
	If yes, describe under DESCRIPTION OF OPERATIONS below						
D	PROPERTY	N	N	KTIJ-CMB-4072-R69-2-11	7/1/2011	7/1/2012	\$55,272,000 Blanket Property Limit Replacement Cost/Agreed Value \$100,000 deductible

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)  
THIS CERTIFICATE CONFERS NO ADDITIONAL INSURED RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

## CERTIFICATE HOLDER

10936407 HORTON EMERGENCY VEHICLES 3800 MCDOWELL ROAD GROVE CITY OH 43123	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 



# Horton

## EMERGENCY VEHICLES

November 15, 2010

Horton Emergency Vehicles, in conjunction with CTL Engineering, Inc., Transportation Research Center, Inc., and Progressive Engineering, Inc., has successfully completed and required tests as set forth in Federal Specification KKK-A-1822F, dated February, 2008, for the below listed vehicles, components and equipment of Horton Emergency Vehicles located at 3800 McDowell Road, Grove City, Ohio 43123.

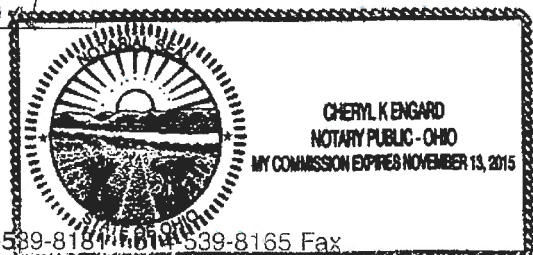
<u>TYPE</u>	<u>CHASSIS</u>	<u>WHEELBASE</u>	<u>GVWR</u>	<u>ENGINE TYPE/SIZE</u>	<u>MODULE SIZE</u>	<u>FLOOR PLANS</u>
I	FORD F-350	164.8"	12,500	DIESEL/6.0L	403 & 453	A & B
I	FORD F-450	164.8"/189"	16,500	DIESEL/6.01	453, 457, F603 & F623	A & B
I	NAVISTAR	169"	20,000	DIESEL/DT 466	603	A & B
I	NAVISTAR	175"	20,000	DIESEL/DT 466	623	A & B
III	CHEV/GMC C-4500/C-5500	165.5"	17,500	DIESEL/6.6L	525 & 555	A & B
III	FORD E-350SD	138"	11,500	DIESEL/6.0L & GAS/6.8L	403 & 453	A & B
III	FORD E-450SD	158"	14,050	DIESEL 6.0L & GAS/6.8L	533 & 553	A & B
I	DODGE 4500	168.5"/188.5"/192.5"	16,500	DIESEL 6.7L	403, 453, 457. & D623	A & B
III	CHEVY/GMC G-4500	139"	12,300	DIESEL/6.6L	403 & 453	A & B
III	CHEVY/GMC G-4500	159"	14,200	DIESEL/6.6L	553	A & B
I	FREIGHTLINER	168"	20,000	DIESEL/6.7/8.3L	603	A & B
I	FREIGHTLINER	174"	20,000	DIESEL/6.7/8.3L	623	A & B

Respectfully submitted,

David M. Lamon  
President

Sworn to and subscribed in my presence by DAVID M. LAMON  
this 15 day of NOVEMBER 2010.

My commission expires November 13, 2015.  
Notary Public Cheryl K. Engard



3800 McDowell Road • Grove City, Ohio 43123 • 614-539-8181 • 614-539-8165 Fax



18881 US 31 North  
P.O. Box 1020  
Westfield, Indiana  
46074-1020

Phone  
(317) 896-9531  
Fax  
(317) 867-2305

March 14, 2007

Mr. Malley  
Horton Emergency Vehicles  
3800 McDowell Road  
Grove City, OH 43123

Dear Mr. Malley

This document is to confirm that on February 22, 2007, IMMI's Center for Advanced Product Evaluation (CAPE) witnessed the dynamic roof pre-load, static roof load and dynamic rear impact tests as regulated by ECE R29, SAE J2422 and SAE J2420 on a Horton Emergency Vehicles ambulance box. The events were documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers and a laser speed trap.

This document also reports that the Horton Emergency Vehicles ambulance box is in compliance with the requirements and intent of standards ECE R29, SAE J2422 and SAE J2420. Whereby, the testing with regard to the above-mentioned standards was carried out by CAPE on February 22, 2007 at IMMI's Center for Advanced Product Evaluation in Westfield, Indiana.

Sincerely,

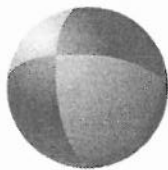
James R. Chinni P.E.  
Director of CAPE

Ref: CTR02181



# Crash Test Documentation





March 14, 2007



Mr. Malley  
Horton Emergency Vehicles  
3800 McDowell Road  
Grove City, OH 43123

Dear Mr. Malley

18881 US 31 North  
P.O. Box 1020  
Westfield, Indiana  
46074-1020

Phone  
(317) 896-9531  
Fax  
(317) 867-2305

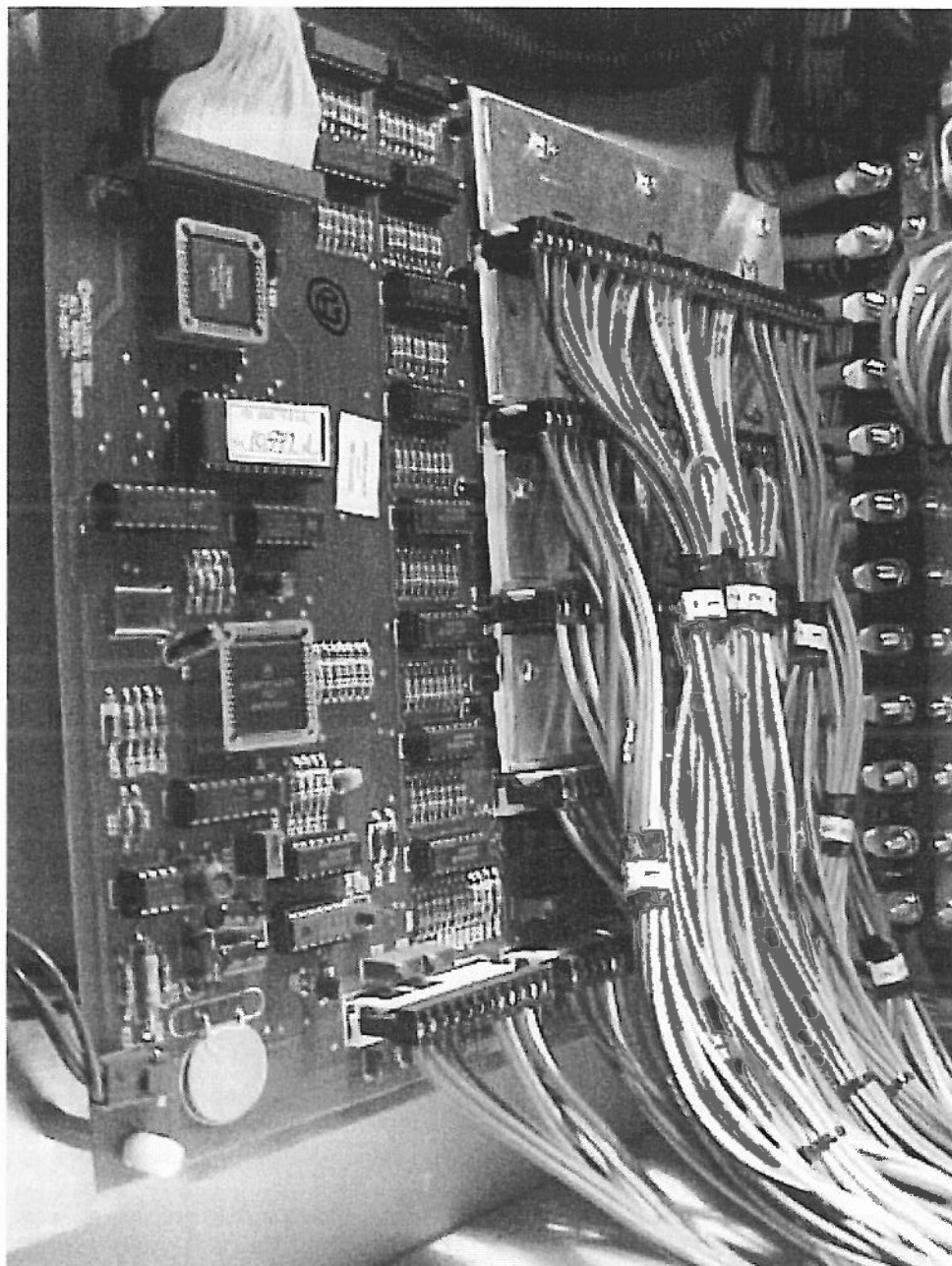
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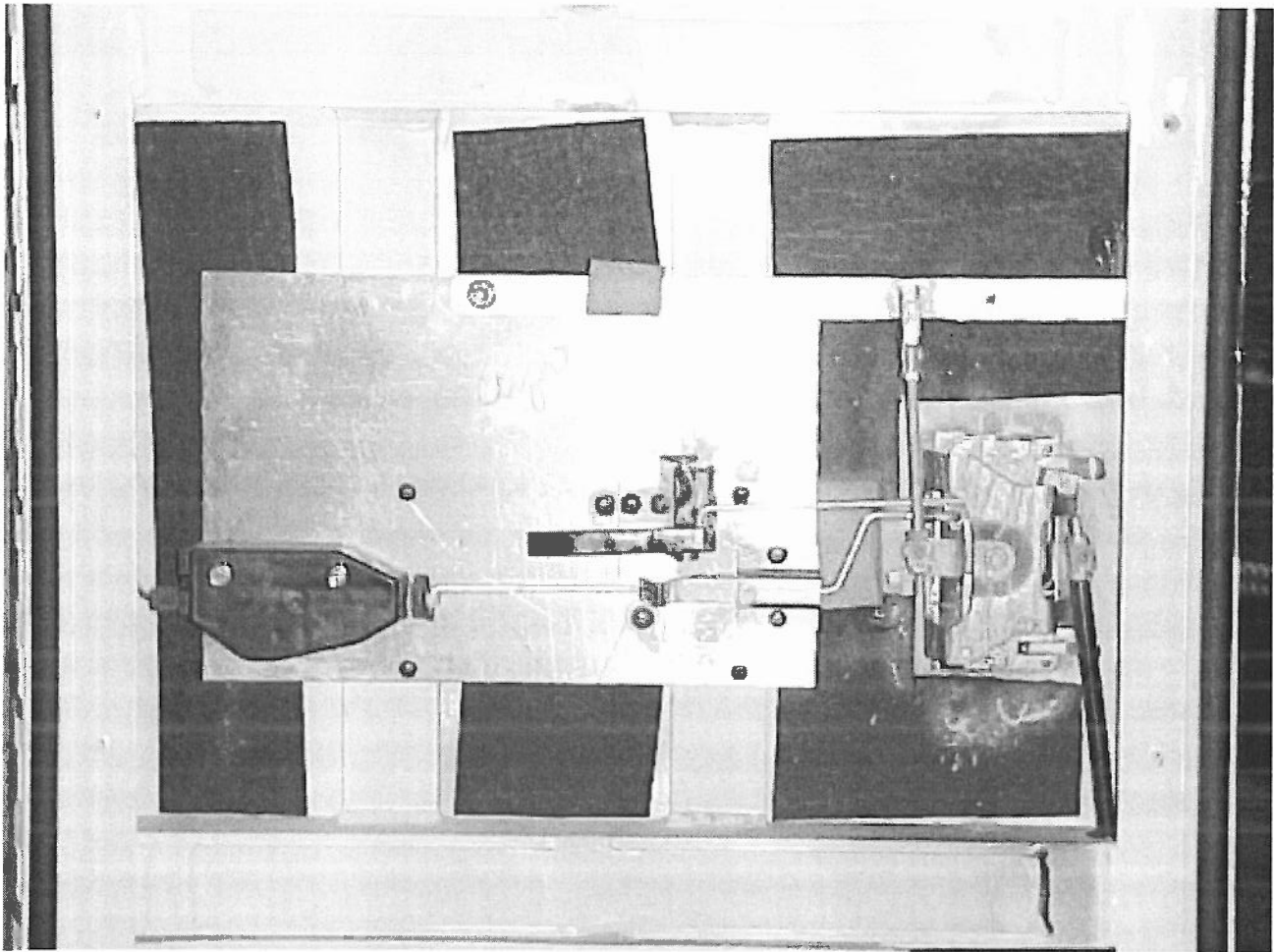
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Sincerely,

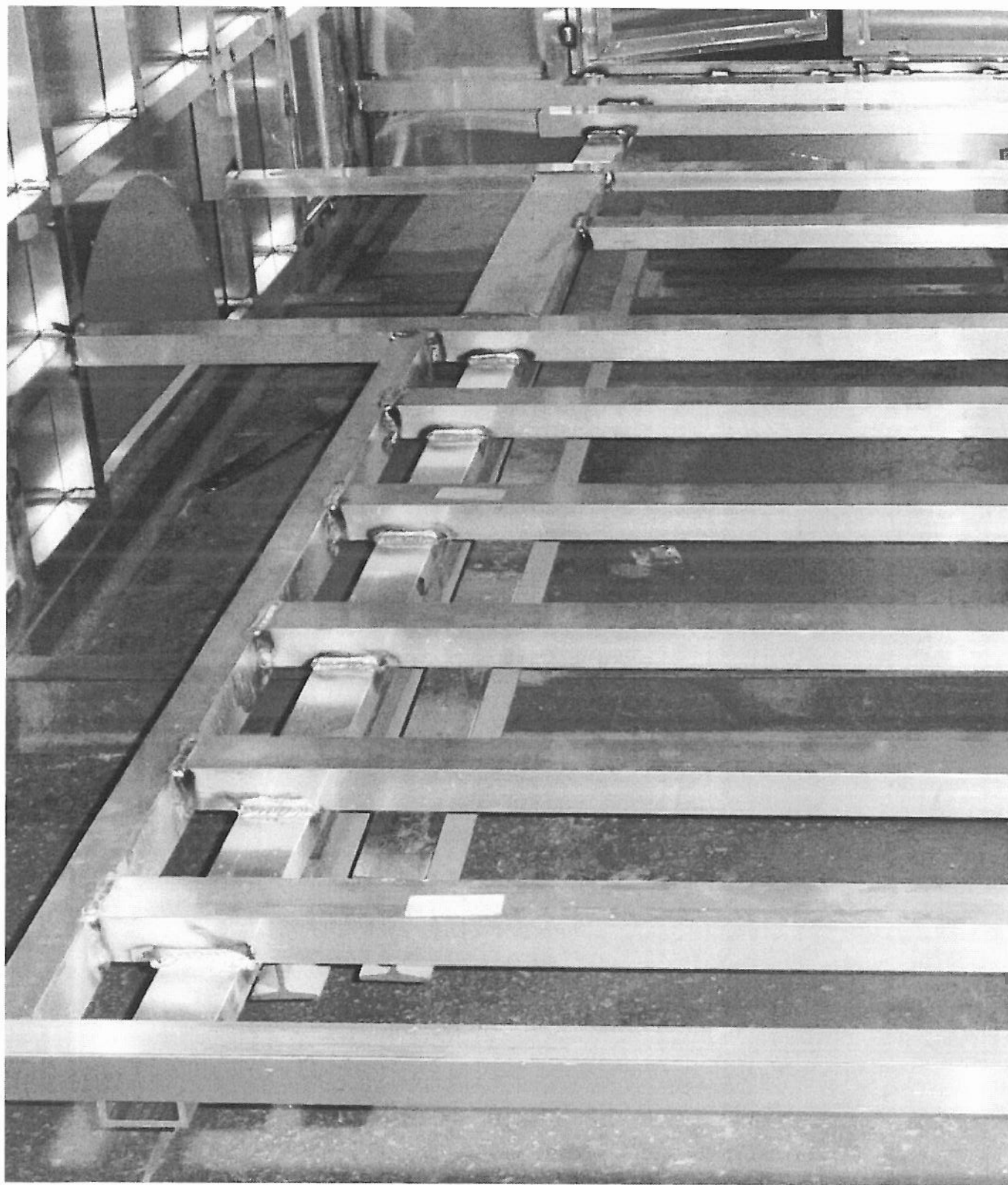
James R. Chinni P.E.  
Director of CAPE

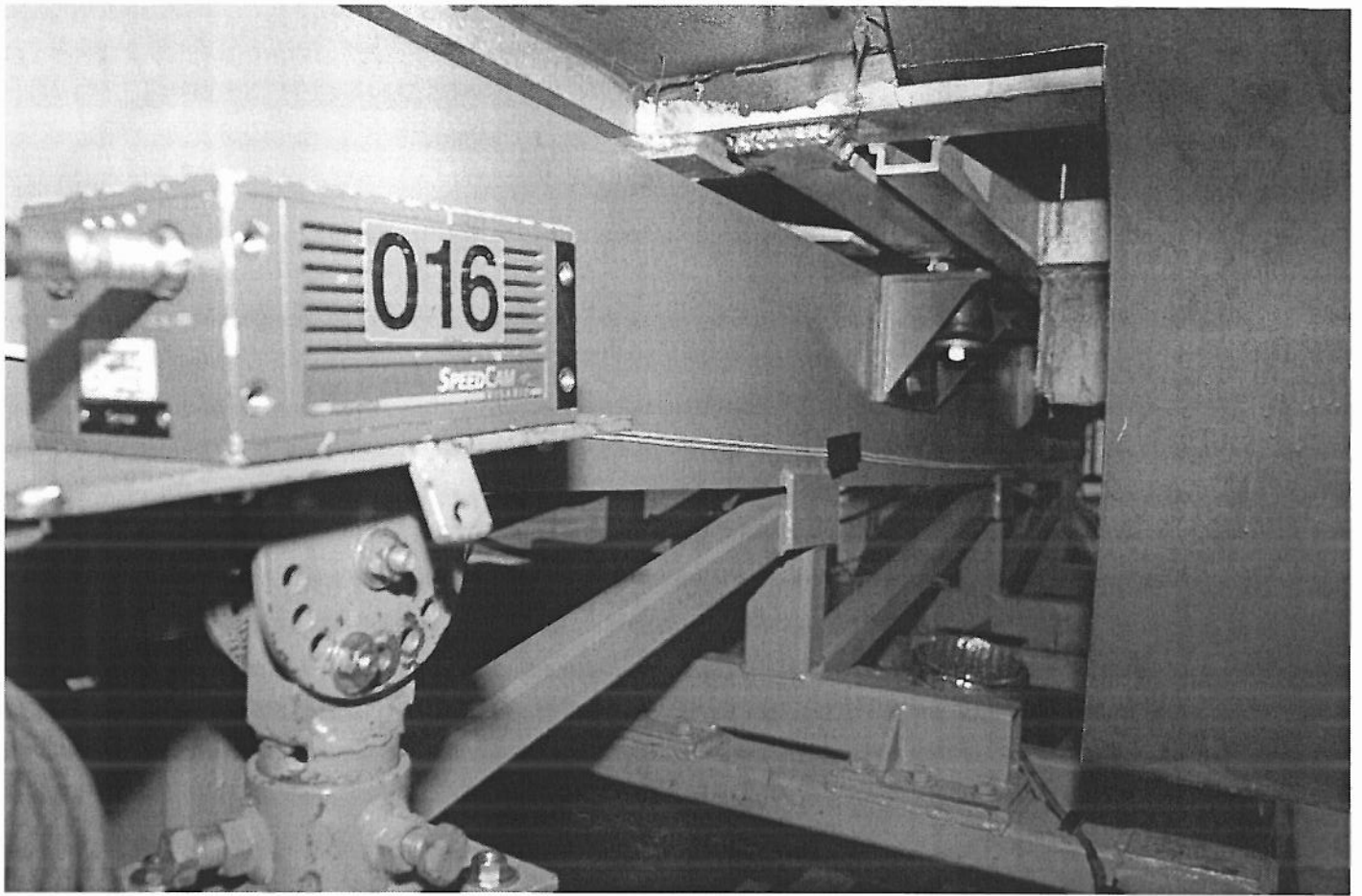
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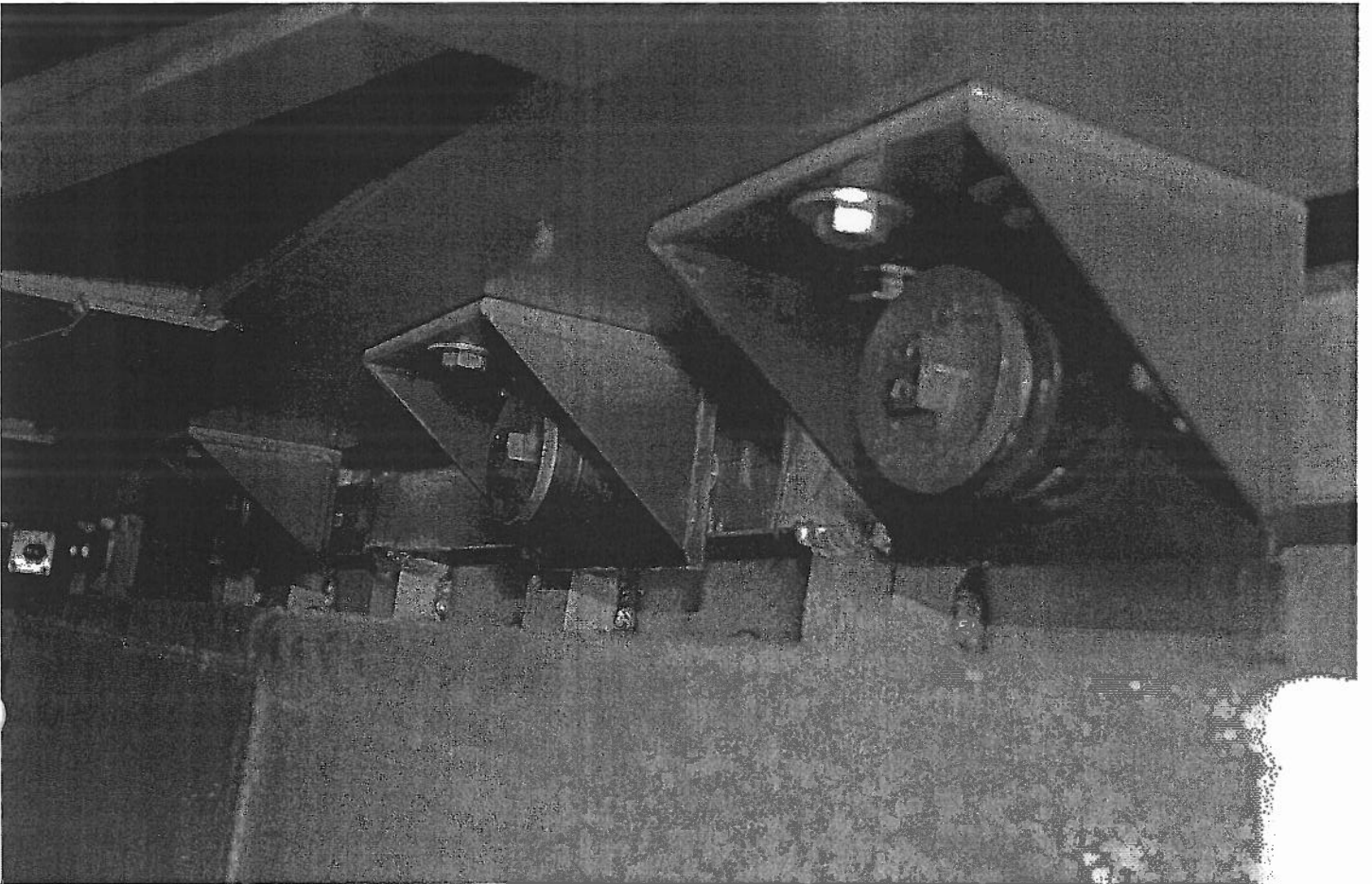
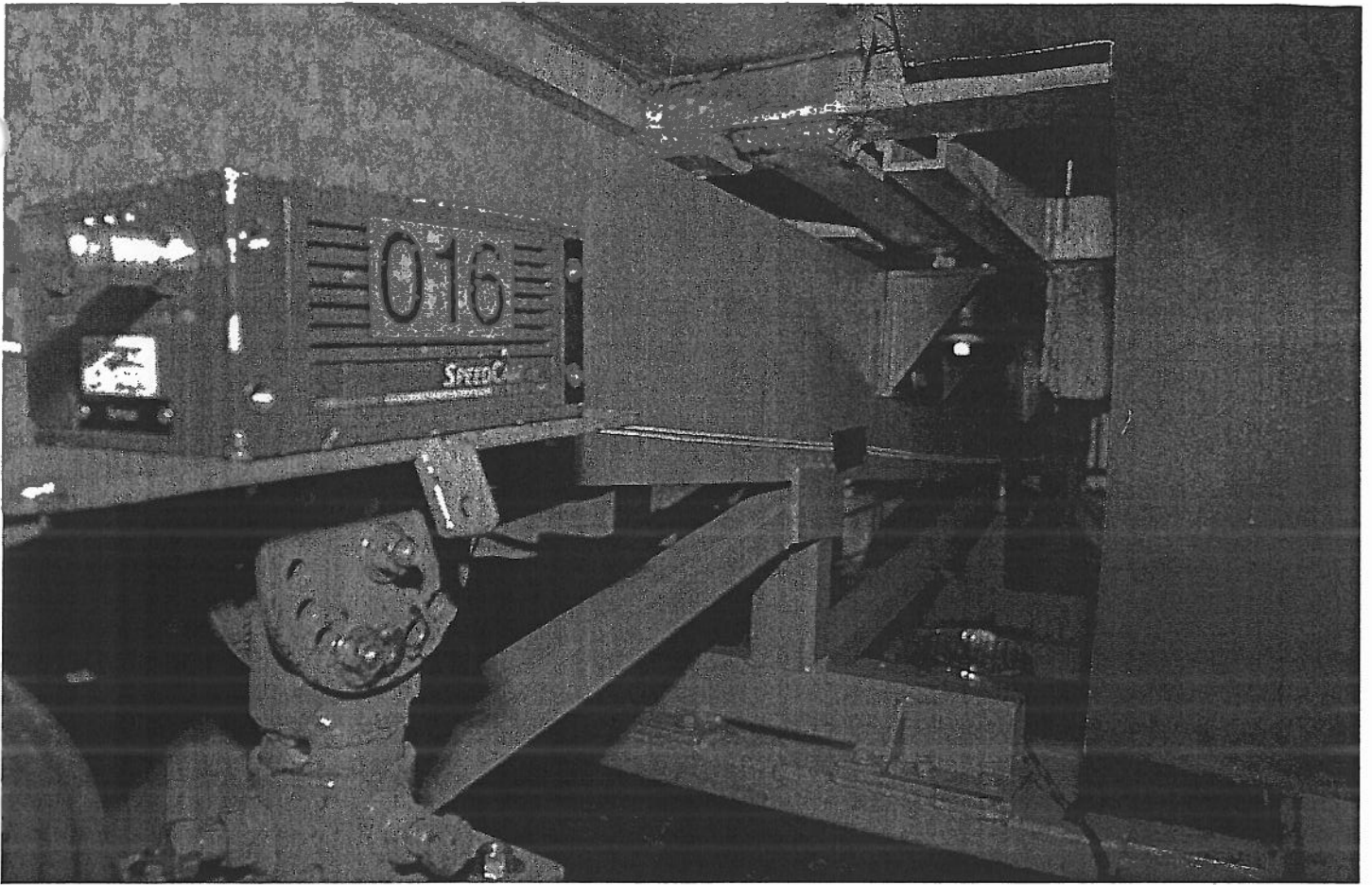












## Item 1 Safety Certification

The bidder must perform and certify to dynamic sled or impact testing run on the ambulance body to a load of 30 G's. The body tested shall include normally installed components for each of the following areas of the vehicle. The body structure and installed components shall not show evidence of structural failure or separation from its mounted position as a result of the test. All test results must be witnessed and verified by a Registered Professional Engineer.

	Test Required	Date Tested	Body Test Force Applied	Signed By
1.	Body to Chassis Mounting	4/20/06	30 G's	<u>L. Gregory Dubois</u>
2.	Access Door Latching	4/20/06	30 G's	<u>L. Gregory Dubois</u>
3.	Oxygen Cylinder Mount (Main)	4/20/06	30 G's	<u>L. Gregory Dubois</u>
4.	Oxygen Cylinder Mount (Portable)	4/20/06	30 G's	<u>L. Gregory Dubois</u>
5.	Attendant Seat Mount	4/20/06	30 G's	<u>L. Gregory Dubois</u>
6.	Attendant Seat Belt	4/20/06	30 G's	<u>L. Gregory Dubois</u>
7.	CPR Seat Belt	4/20/06	30 G's	<u>L. Gregory Dubois</u>
8.	Squad Bench Seat Belt	4/20/06	30 G's	<u>L. Gregory Dubois</u>
9.	Retention of Main Cabinet Wall	4/20/06	30 G's	<u>L. Gregory Dubois</u>
10.	Crash Restraint Wall At Head of Bench	4/20/06	30 G's	<u>L. Gregory Dubois</u>

## Certification of Registered Professional Engineer

I L. Gregory Dubois attest that I am a Registered Professional Engineer registered in the State of Ohio. My Registration Number is 47216.

I hereby certify that I and my company, its affiliates and subsidiaries are completely independent of all manufacturers, suppliers, and vendors in the ambulance industry..

Signature L. Gregory Dubois

Company CTL Engineering, Inc

Date June 22, 2006





# Our mission is to **Support** our customers



It is because of our total commitment to our customers that each member of our skilled service staff works diligently to not only meet, but surpass your expectations.

Each of our EVT certified technicians is qualified to perform any maintenance task necessary on a wide variety of important life-saving equipment. Our eighteen factory trained technicians work out of a total of 16 service bays. This means that we can complete your emergency vehicle repairs on time, so you can return it back into service quickly, repaired correctly, and within your budget.

An award-winning sales staff will assist you with specifications and product information to help you design the right vehicle for your department. Our 50 team members have a total of over 400 years of combined experience in the emergency vehicle industry, and the benefit of that experience is yours for the asking. Please feel free to contact us for any information regarding your next vehicle purchase.



Proudly serving the needs of our customers since 1979



# REQUIRED BY MASSACHUSETTS LAW

## ATTESTATION

Pursuant to M.G.L. Ch 62C, Sec. 49A, I certify under the penalties of perjury that I, to my best knowledge and belief, have filed all state tax returns and paid all state taxes required under law.

**Greenwood Emergency Vehicles, Inc.**

\_\_\_\_\_  
Signature of Ind. or Corp. Name

\_\_\_\_\_  
By: Corporate Officer

**04-2664160**

\_\_\_\_\_  
Soc. Sec.# or Federal Identification #

.....  
Massachusetts General Laws, Chapter 701 of Acts of 1983 requires that each bidder must certify as follows:

The undersigned certifies under penalties of perjury that this bid is in all respects bona fied, fair and made without collusion or fraud with any other person. As used in this paragraph, the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

\_\_\_\_\_  
Name of person signing

**Greenwood Emergency Vehicles, Inc.**

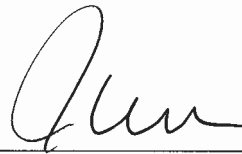
\_\_\_\_\_  
Company

## CLERK'S CERTIFICATE

I, Dennis J. Carvalho, Clerk of GREENWOOD EMERGENCY VEHICLES, INC., A Massachusetts Corporation, hereby certify that at Special Meeting in lieu of Annual Meeting of Directors, held on the 16<sup>th</sup> day of February, 2012, duly called, with all Directors present and voting, it was unanimously

VOTED: That the President, Timothy J. O'Neill; Executive Vice President/Treasurer, Dennis J. Carvalho; Vice President, John P. Regan; and Vice President, Mark R. MacDonald, or any of them be, and hereby is, authorized and empowered to enter into, execute, and deliver contracts of all kinds, including without limitation bid or performance bonds, in the name and behalf of Greenwood Emergency Vehicles, Inc., upon such terms and conditions as may be deemed in the best interest of this Corporation by such officer.

WITNESS the execution hereof under seal this 16<sup>th</sup> day of February, 2012.



Dennis J. Carvalho - Clerk

## COMMONWEALTH OF MASSACHUSETTS

Bristol, ss.

February 16, 2012

Then personally appeared the above-named Dennis J. Carvalho, Clerk of Greenwood Emergency Vehicles, Inc., and acknowledged the foregoing instrument to be his free act and deed, as clerk, before me,



Lorna R. Marcoux - Notary Public

My commission expires: December 26, 2014



MASSACHUSETTS DEPT. OF REVENUE  
PO BOX 7066  
BOSTON, MA 02204



AMY A. PITTER, COMMISSIONER  
ROBERT P. O'NEILL, BUREAU CHIEF



243C  
GREENWOOD EMERGENCY VEHICLES INC  
530 JOHN L DIETSCH BLVD  
N ATTLEBORO MA 02763-1080

Notice 80619 OP  
T/P ID 042 664 160  
Date 12/08/11  
Bureau CERTIFICATE

### CERTIFICATE OF GOOD STANDING AND/OR TAX COMPLIANCE

The Commissioner of Revenue certifies as of the above date, that the above named individual or entity is in compliance with its tax obligations payable under M.G.L. c. 62C, including corporation excise, sales and use taxes, sales tax on meals, sales and use tax on Boats/RV, withholding taxes, room occupancy excise and personal income taxes, with the following exceptions.

This Certificate certifies that individual taxpayers are in compliance with income tax obligations and any sales and use taxes, sales tax on meals, withholding taxes, and/or room occupancy taxes related to a sole proprietorship. Persons deemed responsible for the payment of these taxes on behalf of a corporation, partnership or other business entity may not use our automated process to obtain a Certificate.

This Certificate does not certify that the entity's standing as to taxes such as unemployment insurance administered by agencies other than the Department of Revenue, or taxes under any other provisions of law. Taxpayers required to collect or remit the following taxes must submit a separate request to certify compliance: Alcoholic Beverage Excise, Cigarette Excise, International Fuels Tax Agreement, Smokeless Tobacco or Ferry Embarkation.

THIS IS NOT A WAIVER OF LIEN ISSUED UNDER GENERAL LAWS, CHAPTER 62C,  
SECTION 52.

Very truly yours,

Robert O'Neill, Bureau Chief





*If you want to know about  
**Greenwood Emergency Vehicles,**  
Call our satisfied customers*



**E450 GAS POWERED**



**INTERNATIONAL / TERRASTAR**



**F-450 4 X 4**



**G-CUTAWAY CHASSIS**

*Contact our  
Ambulance Department  
to schedule a Demo  
508.695.7138*



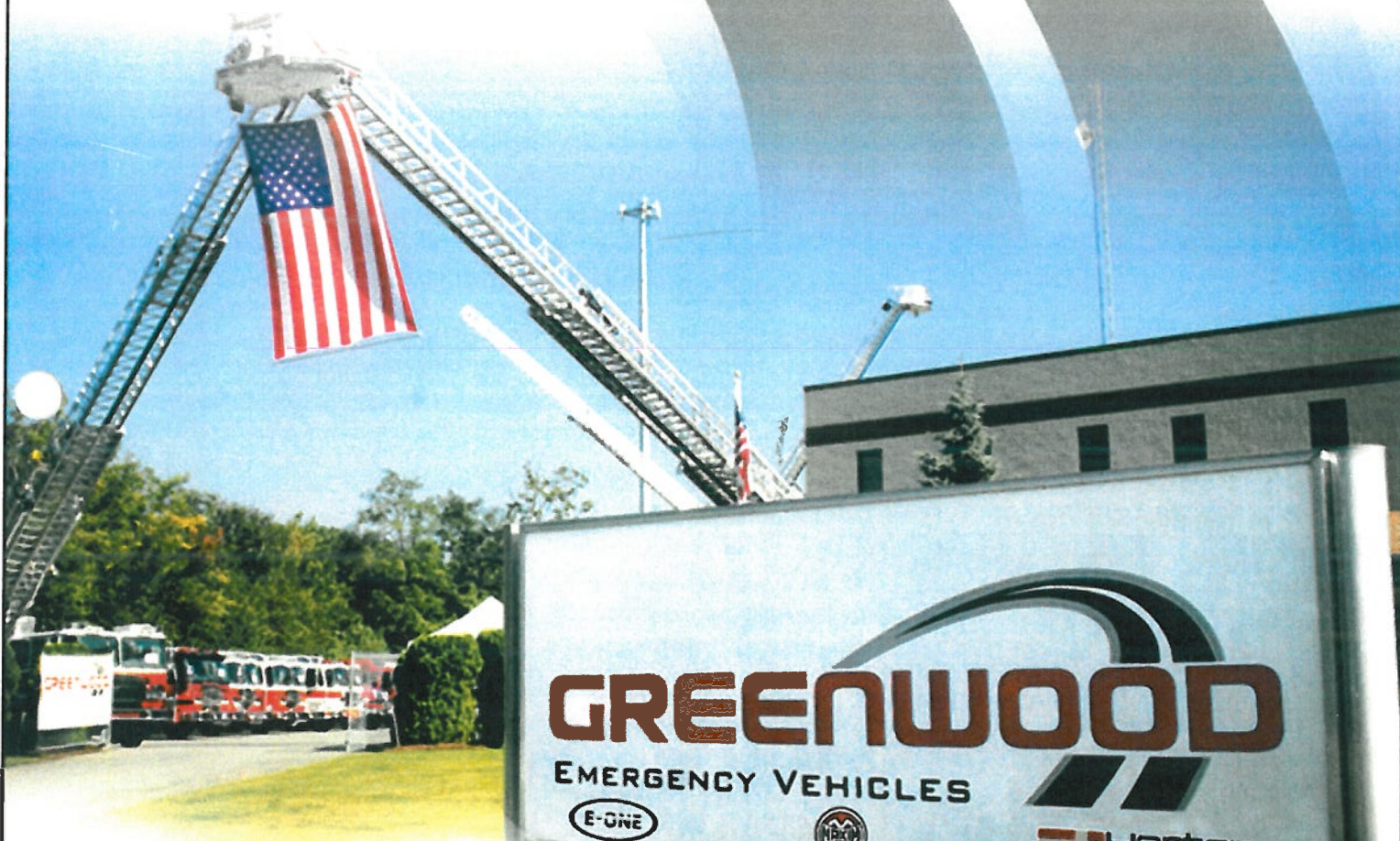
**INTERNATIONAL**



# GREENWOOD

EMERGENCY VEHICLES

[www.GreenwoodEV.com](http://www.GreenwoodEV.com)



## Headquarters & Service Center

530 John Dietsch Boulevard  
North Attleboro, MA 02763  
508.695.7138

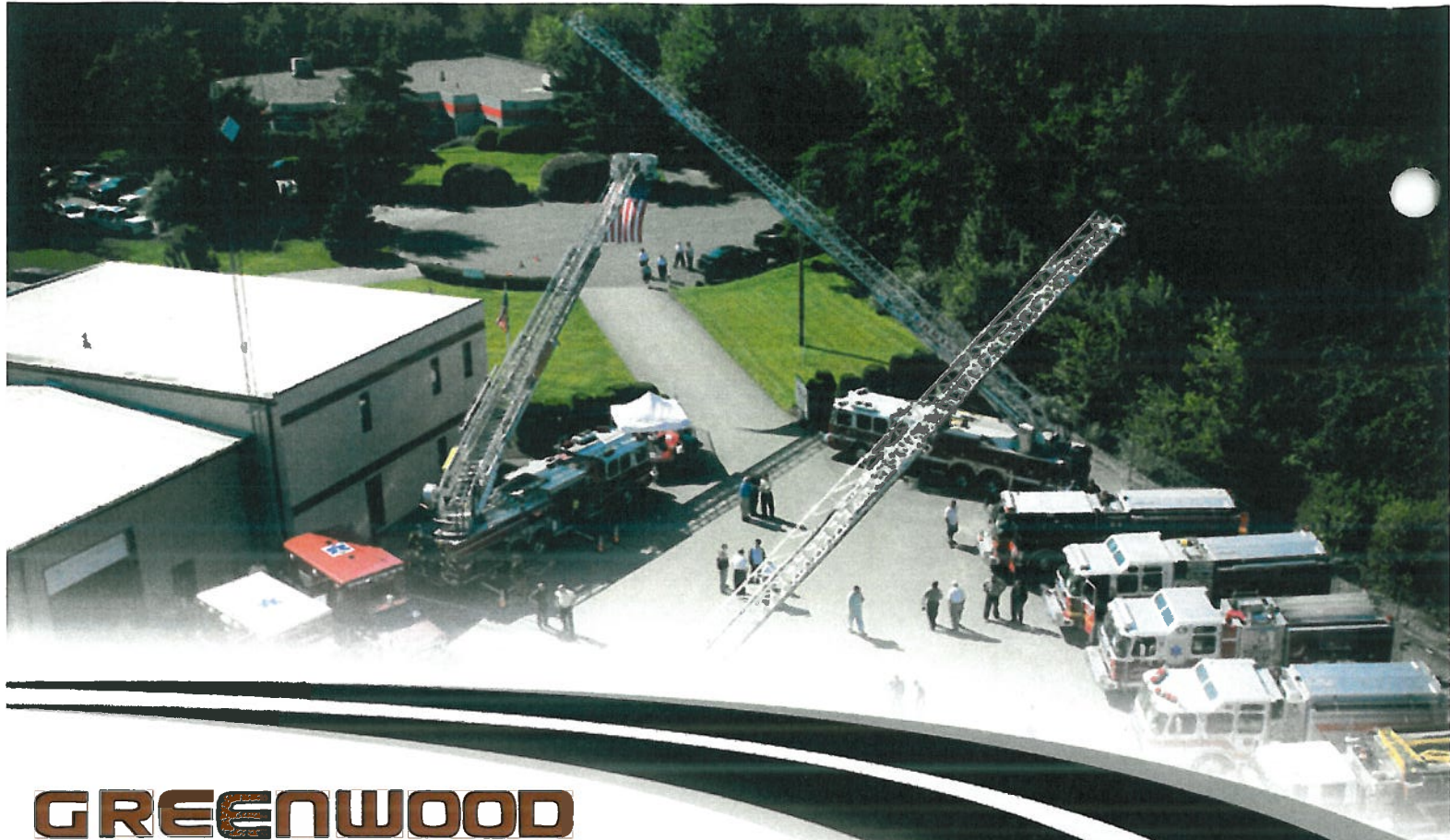
## Service Centers

19 Summer Street  
Brunswick, ME 04011

19 Progress Dr.  
Cromwell, CT 06416

800.347.3878





# GREENWOOD

## Sales Division

In 1997, Greenwood built and opened a new state of the art 18,000 square foot facility to house corporate and sales functions. This facility is located less than one mile from our service and parts center and features a modern six-bay showroom that provides the ideal environment for inspecting your new emergency vehicle. It is clean, quiet and well lit. It houses in-stock units that are available for demos, as well as quick delivery if the need should arise. The facilities at Greenwood provide offices for administration and sales personnel, as well as multiple conference rooms for planning out your new emergency vehicle! Greenwood has a full-time sales staff of fifteen people to meet all of your needs.







## Parts and Service Division

Greenwood's primary service, parts and manufacturing center is a 22,000 square foot facility providing service, parts, body repair and aluminum vehicle fabrication by EVT certified and factory-trained technicians for complete customer satisfaction.

Our industry leading facility features three 24-ton lift systems, 10-full size bays, a newly reconditioned full size paint booth, an overhead lift system and body fabrication facilities. The service staff consists of several service writers, fifteen full-time EVT certified mechanics, electricians, hydraulic specialists, fabricators, welders and both body and paint technicians. The service department offers a wide variety of preventive maintenance, collision repair and same-day emergency service.

Our parts department stocks close to one million dollars of inventory and is manned by a full-time staff of four employees. Our in-house graphics department utilizes the latest in computer and graphic arts technology to provide custom lettering, emblems and town seals for your entire fleet. The Brunswick, Maine and Cromwell, Connecticut service and parts facilities each offer over 7,000 square feet of repair, office, conference and parts storage. Our facilities are staffed by EVT certified and factory-trained technicians, and sales staff. Both Brunswick and North Attleboro facilities have modernized pump testing pits. Greenwood Emergency Vehicles is also an authorized parts and service center for Hale and Waterous Pumps and On-Spot Automatic Tire Chains.







# GREENWOOD

EMERGENCY VEHICLES

Greenwood Emergency Vehicles was incorporated in Massachusetts in 1979 as a dealer for Emergency One, Inc., which is one of the largest manufacturers of fire apparatus in the United States and is a true innovator in the field of fire apparatus construction. Back in 1974 E-One built the first aluminum fire truck and literally revolutionized the industry. Today, aluminum is recognized as the material of choice in the construction of apparatus and its non-corrosive properties have added years to the life expectancy of these vehicles. Greenwood serves as the exclusive dealer for E-One in Massachusetts, Connecticut, Rhode Island, Maine, and Southern New Hampshire.

If it's a new ambulance that your department needs, we've got you covered there as well. Greenwood also proudly serves as the exclusive dealer for the Horton Emergency Vehicles line of ambulances for all of the six New England States! Horton Ambulances are well known throughout the industry; not only for their superior quality, and fit and finish, but more importantly for their industry leading commitment to safety!

In 2008, Greenwood acquired the Maxim trademark; a long recognized name in New England and beyond as a Massachusetts manufacturer of fire apparatus for more than 90 years. Greenwood is now producing a number of quality stainless steel fire apparatus bodies and assembling them to various commercial and custom chassis under the Maxim name.

Greenwood also offers expanded training services for your department. You can now receive full Operations and Safety presentations for your Emergency One Aerials, Pumpers, and Tower Ladders as well as Foam Systems Review, Advanced Pump Operations, and Aerial Maintenance. Our certified Instructors conduct classroom and practical training sessions at your facility on your apparatus. This refresher training is perfect for individuals who have not attended the Factory Delivery Presentation or as a review for your apparatus operators.

Greenwood is the largest emergency vehicle dealer in New England with well over 2,500 units in service in the region!

Greenwood's headquarters are located in North Attleboro, Massachusetts, just 40 miles south of Boston, Massachusetts and 20 miles north of Providence, Rhode Island. Our facilities are conveniently located minutes from interstates 95, 495 and 295. Our satellite facilities are in Brunswick, Maine just off Route 1, and in Cromwell, Connecticut, off Interstate 91.

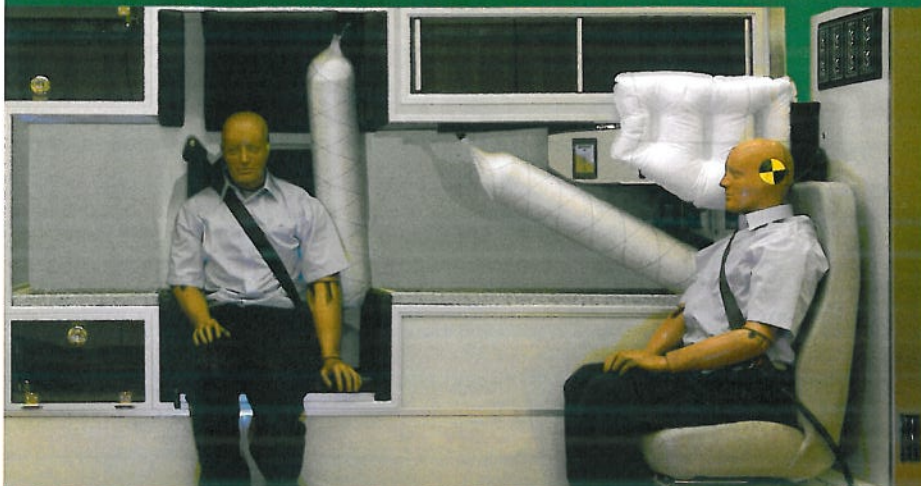
We hope you will call Greenwood for all your Emergency vehicle needs.



[www.GreenwoodEV.com](http://www.GreenwoodEV.com)



# HORTON TYPE THREE



**H**orton Emergency Vehicles' Type III ambulance has it all. Choose from three body sizes and five different models or customize one to suit your needs.



Every Type III comes standard with Horton's exclusive occupant protection system for rollover crashes (HOPS). This one-of-a-kind system combines high-technology airbags, customized restraints and unique head protection systems to provide maximum safety for your personnel.

Always known for its excellent ride and high maneuverability, the Horton Type III offers much more.

Extra sound and thermal protection provides a quiet and comfortable patient area. The Intelliplex multiplexed electrical system not only offers reliability and detailed system monitoring, it has easy to decontaminate switch panels. Add advanced protection, safety and unique features and you can see why Horton is the leader.



3800 McDowell Road, Grove City, Ohio, 43123 • 614-539-8181 • fax 614-539-8165 • email: [info@hortonambulance.com](mailto:info@hortonambulance.com)



# A World of Choices...



■ All-aluminum construction with superior fit and finish in compartments provides for easier cleanup and durability. Options include roll-out trays, custom dividers and shelving to accommodate special equipment.



■ Start from one of three models to create an ambulance tailored to your department.

model	body	headroom
403 III	137"	68"
453 III	145"	72"
553	169"	72"



■ Storage can be customized to maximize exterior space (left) or interior space.



# HORTON TYPE THREE



■ Horton Emergency Vehicles offer the most flexible interior configurations available. Choose from standard, mirrored or polished stainless steel or Avonite for work surfaces.

■ A sealed face on Intelliplex control panels protects switches from spills and makes decontamination a breeze. Combined with solid-state, magnetic switches, the Intelliplex panels provide long-lasting reliability.



■ Cabinets can be designed to meet a wide variety of needs from special sharps and waste containers to life pak storage to heated IV storage. Horton's all-aluminum cabinets are constructed with an extruded frame, welded for extra strength. For easy restocking, choose flip up cabinet fronts.



■ Horton's occupant protection system (HOPS), features high-tech air bags, restraint systems and advanced head protection. The Horton modular body exceeds all the testing requirements of ECE R29, SAE J 2420 and SAE J 2422 standards.





# HORTON

## TYPE THREE SERIES

Horton Emergency Vehicles Type Three Series offers the most advanced bio-hazard controls, safety features, reliability systems and acoustic and thermal standards.



Not content to guess how strong our bodies are, Horton has subjected its ambulances to severe crash simulations with Hyge sled tests since 1974. Actual destructive impact testing was used recently to develop the HOPS system and further verify Horton's unmatched body reliability. In addition to structural integrity, these tests also monitored cabinet retention, body mounting systems, seat belt effectiveness and O<sub>2</sub> bottle retention.



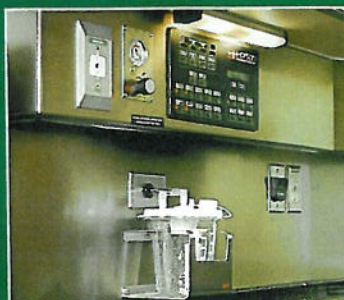
A second Intelliplex console on the bench side allows the attendant to remain belted while monitoring the patient and changing the temperature, lighting or updating patient status.



Optional Energy Absorbing Rear Steps reduces maintenance downtime by bouncing back after rear impacts while parking.



Stainless, Formica, Avonite, polished stainless and even paint: with Horton, you're interior options are almost endless.



To see the latest Horton Type III, call your local Horton dealer.



a member of the Halcore Group

3800 McDowell Road, Grove City, Ohio, 43123 • 614-539-8181 • fax 614-539-8165 • email: [info@hortonambulance.com](mailto:info@hortonambulance.com)

### Horton has it all:

<b>Reliability:</b>	Spill proof Intelliplex panels
	50-million cycle switches
	Electronic diagnostics
	Anti corrosion paint system
<b>Safety:</b>	Occupant Protection System
	Attendant Air Bag System
	High and low pressure O <sub>2</sub> alarms
	Crash tested
	Silhouette safety lighting
<b>Sound and Thermal Controls:</b>	Multi-layered flooring
	Sound and thermal insulation throughout
<b>Unique Features:</b>	Wood-free interior
	Heated IV and drug lockers
	High polish stainless rub rails
	Anti-microbial, stain resistant flooring
<b>Protection:</b>	Anti-microbial grab rails and cabinet paint
	Avonite countertops
	Easy to decontaminate control panels





*Leaders In Quality*



**Horton**  
EMERGENCY VEHICLES





**W**hat makes Horton the industry standard for emergency medical and rescue vehicles? Years dedicated to the pursuit of the ultimate in quality and advanced design. It didn't happen overnight. Think of it as the Horton heritage.

Horton Emergency Vehicles was one of the true pioneers among van ambulance builders of the late 1960's leading the development of the initial "Heartmobile" units that were the forerunners of today's paramedic ambulances.

The first inhalation areas featuring piped oxygen and suction systems were developed by Horton Emergency Vehicles. The all-aluminum welded body, modular cabinetry, electronically-controlled oxygen systems, electronic throttle controls, solid-state electronics, vehicle diagnostics and electrical load management were also introduced by Horton. And now — Horton Occupant Protection System (HOPS)!

In order to ensure the highest product integrity, the development of innovative products has always been combined with extensive product testing programs. Units are subjected to all required testing and procedures as outlined in Federal Ambulance Specifications and Ford Quality Vehicle Modifier guidelines. In addition, Horton ambulances have undergone rigorous HYGE sled crash testing to ensure equipment stability and the reliability of mounting systems and cabinet attachments.

## A timeline of innovation



First all-aluminum modular ambulances – Type I and Type III give the new profession of EMT the room to work

First HYGE sled test – The first in a series, testing enables Horton to analyze cabinet retention, chassis/body mounting systems and O<sub>2</sub> cylinder retention



Electric Oxygen Control

First Critical Care Vehicle

First modular cabinetry

First edge formed doors

First all-welded body

First exterior-mounted oxygen cylinder – separating dangerous high pressure O<sub>2</sub> from patients and care providers

First CPR seat configuration with center mounted cot

First combination rescue/ambulance vehicle

Sled Test

All-aluminum cabinetry

First Medium D Ambulance

First van ambulance – Pioneered the move from hearse-based transport to EMS

Raised roof van (all steel)

1968

1971

1973

1974

1975

1976

1981

1983

1984

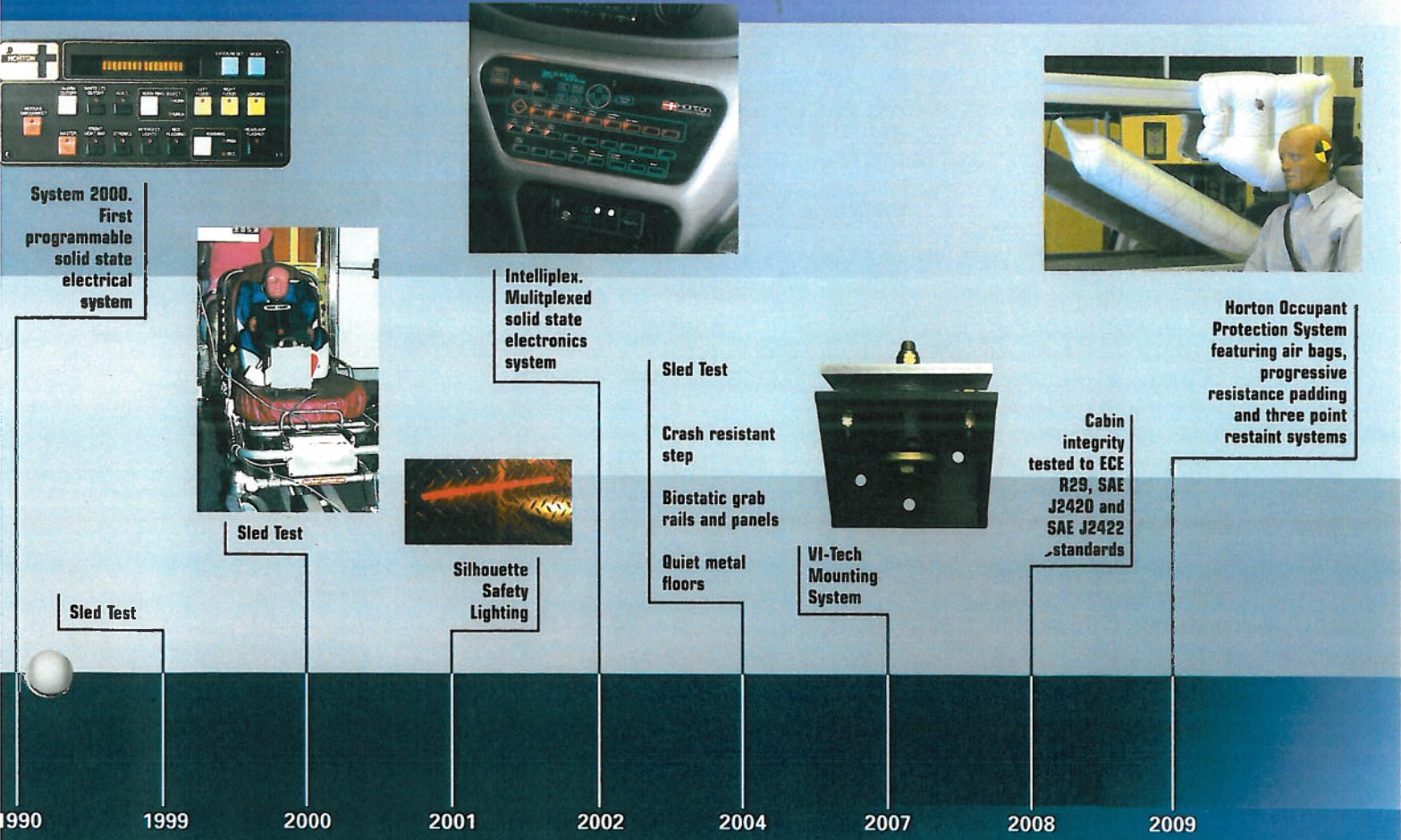


After leading the ambulance manufacturing industry for more than 40 years, it would be easy for Horton Emergency Vehicles to rest on its laurels. A pioneer in the move from hearse-based transport to advanced life support ambulances, Horton still strives to offer the most innovative vehicles on the road today.

Horton truly has it all. Innovation is just one benchmark of a Horton Emergency Vehicle. Quality and durability are combined to create dependability. Many Horton firsts have been aimed squarely at making each emergency vehicle ready to respond with less down time so caregivers can do their important work.

The move from unreliable rocker switch controls to solid state technology, and then to multiplex systems, is just one of many state-of-the-art technology infusions designed by Horton. And, as the only manufacturer with a history of crash testing our bodies, Horton continues to make the ambulance environment a safer workplace. We strive for Safety with Substance.

Horton craftsmen and engineers are proud of the quality they build into each Horton ambulance. Just as you have made a commitment to emergency service, we have made a commitment to build you the safest, most technologically advanced emergency vehicles available. We believe the more you learn about Horton, the more you will agree Horton has it all!





# Horton Emergency Vehicles

**H**orton Emergency Vehicles, located in a sophisticated, purpose-built 175,000 square-foot facility in a suburb of Columbus, Ohio, is uniquely prepared to design, engineer and build to suit your Type III, Medium Duty or Type I needs. Horton has set the industry standard for more than 35 years.



## Type III

**W**ith the comfort of a car-like ride and a tight turning radius, the Type III is the number one selling modular unit today. Horton's most versatile platform, the Horton Type III runs the gamut with a choice of two wheelbases and a wide range of bodies. Select from 138", 146", 157", 163" or the 169" bodies with a variety of headroom options. But choice is not limited to the exterior. Each model offers many compartment and cabinet configurations, from standard designs to fully customized creations.

## Type I

**H**orton Type I Ambulances are a mainstay with large city fleets. Rural areas often prefer 4x4 applications. Choices begin with the 138" body of the 403 Series. Compact and functional, the 403 is packed with the same safety and durability features of our larger models. Or step up to the popular 145" 453 body. With an available raised roof walkthrough option, this Type I offers a large body with good handling and service capabilities. For additional room and payload capacity, choose Horton's newest Type I offering — the 157" 457 on a Ford F450 chassis, complete with air suspension.





## Medium Duty

Offering unparalleled durability and payload capacity, Horton's Medium Duty offerings begin with a choice of chassis: International, Freightliner, Ford or Dodge. The work environment choices begin with a 157" body and grow to a 173" offering. Customize with a choice of pass-through or walk-through, crash barrier configuration and more.



*The 603 and 623 are available in a Type I Ford F 450/550 or the Dodge 4500. The 623 Dodge is shown above.*



*This 623 International features Horton's Crash Barrier configuration.*



*The M2, shown at right as a 623, is also available in the 603 body.*



## Horton Rescue

Horton Rescue brings together the precision, quality and durability for which its ambulances are famous and combines it with Horton's unique ability for custom design.

Why settle for less than the quality and design flexibility only Horton can offer? From commercial chassis to custom, from 12' to 22', from light to medium to heavy rescue, each truck exhibits the attention to detail necessary to support your team.





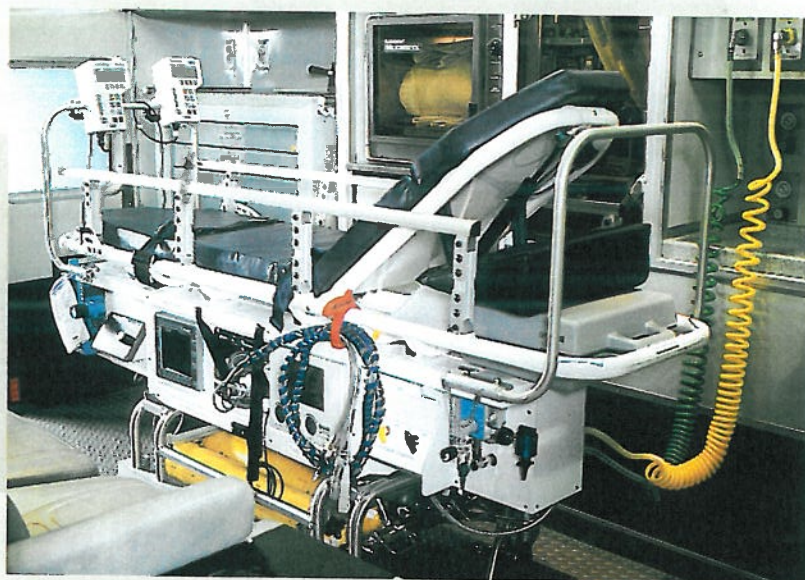
## Horton CCT

Horton's expertise in building custom, highly-sophisticated vehicles

is perhaps best illustrated by its Critical Care Transport units.

In addition to the advanced Horton electronics and safety features, fully customized CCT units are specialized to meet the needs of hospital-based intensive care and neonatal transport.

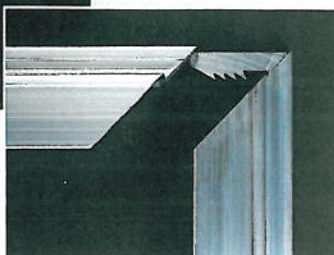
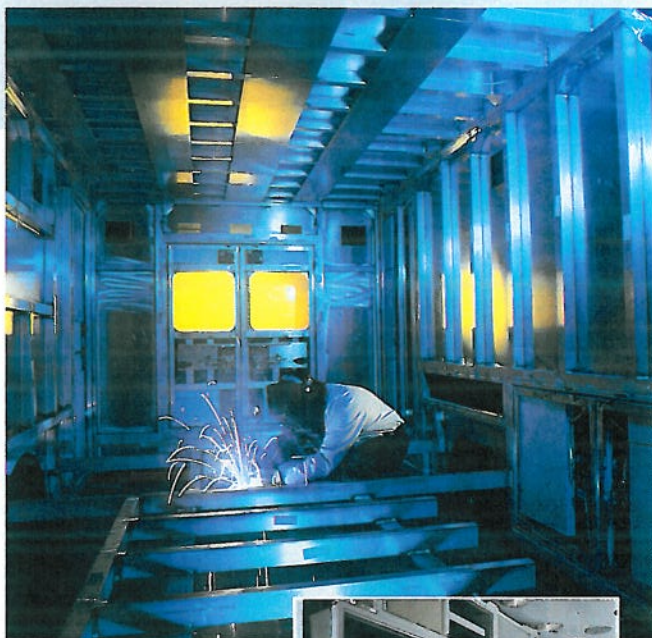
Hydraulic isolette lifts, auxiliary generators, blanket and IV warmers and refrigeration for temperature-sensitive drugs all offer unique challenges that Horton handles every day.





# Horton Has It All

A quality emergency vehicle is the result of a total approach to the manufacturing process – reliability, safety, biohazard control, sound and thermal control and technological innovation. Look at a Horton Emergency Vehicle and you will see the ultimate in advanced design.



## Reliability

From the first Horton ambulances to today's high tech, fully multiplexed, solid-state Intelliplex electrical systems, reliability has always driven Horton's technological advances.



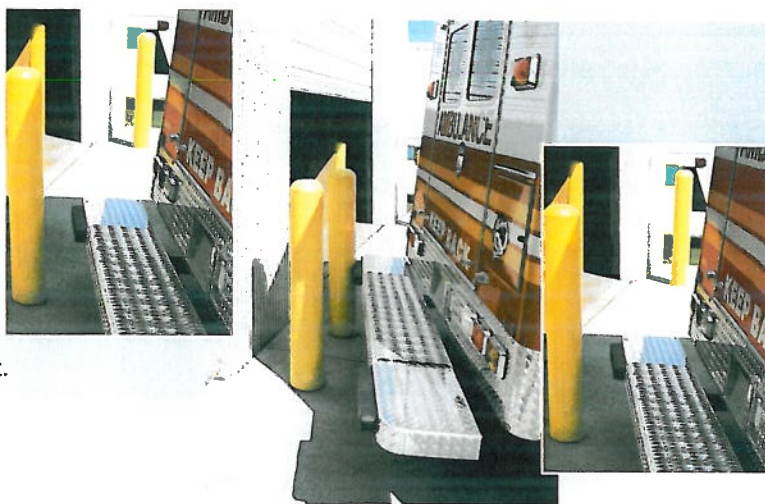
Beginning with an all-aluminum body, Horton creates an envelope of strength. Year after year, mile after mile, even after multiple remounts, compartment and access doors still open and close with the same solid feel.

Welded all-aluminum cabinets, fastened together in a modular design with extruded frames, create storage spaces that are always accessible. Optional lift-up cabinet frames can be added to make restocking a breeze without losing any strength or durability.

Compartment and access doors are constructed for the long haul. Extruded frames are set and squared with our unique corner key system and then fully welded for added strength. Each piece of the door is created on computer controlled equipment for added consistency.



Horton's newest advancement is the energy absorbing rear step. The single most common maintenance item, the rear step is subject to multiple impacts day in and day out. The energy absorbing rear step minimizes damage and minimizes vehicle downtime.

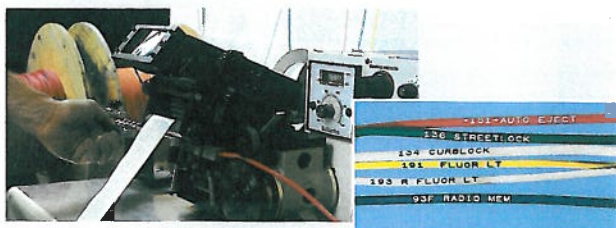


Rely on electrical load management with Intelliplex, Horton's exclusive multiplex electrical system. Logic-controlled and programmable, Intelliplex turns off loads to maintain vehicle integrity and turns them back on as the battery and charging system recover.

**Intelliplex** by **Horton**  
EMERGENCY VEHICLES



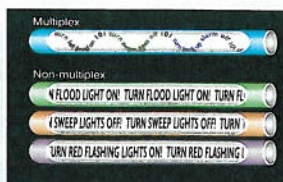
Offering fully multiplexed solid-state programmable control, Intelliplex has raised the bar for vehicle electronics.



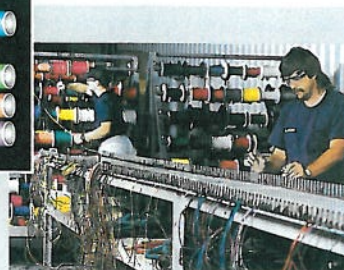
Solid-state electronics guarantee a much lower failure rate and easier diagnostics. Each wire in a Horton is labeled, creating a more effective maintenance environment and making installation of after-the-sale equipment easier.



Intelliplex control panels are sealed, making decontamination a breeze and protecting electrical systems from spills. Each button is rated for 30 million trouble-free cycles.



Multiplexing, sending multiple signals over one wire, reduces wiring and radio frequency interference. In standard electrical systems without multiplexing, it would take an additional 576 wires and 1,172 connections to gain the same information from the switches and LED indicators.





## Safety

**H**ow does an ambulance company create the world's safest ambulance?

It didn't happen overnight. It started more than 30 years ago with a desire to build an ambulance body that would not only stand up to day-to-day driving rigors, but would protect its occupants.

Safety isn't a guessing game. "I think this cabinet will stay in place in an accident" is not an acceptable answer. "We heard about a crash with our vehicle where no one was hurt" is not an acceptable answer. "We've been doing it this way for years," is not an acceptable answer.

The only solution is to test. And now, our decades of testing has brought Horton to this point: two types of advanced airbag protection, custom restraint systems and sophisticated head protection. Modeled on computers and then tested with real impacts, HOPS is truly Safety With Substance.

Real world solutions backed by extensive research engineering and testing — it's what you have come to expect from Horton Emergency Vehicles.



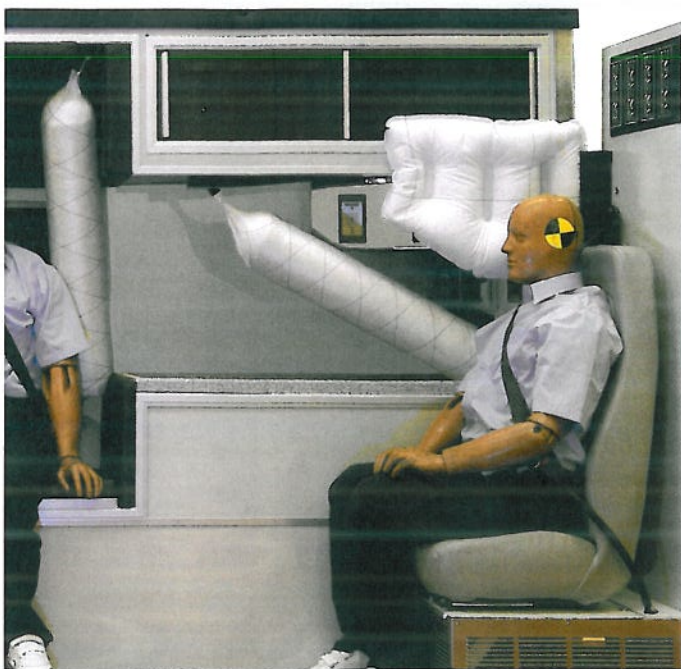
# HOPS



**Horton Occupant Protection System**  
for rollover collisions







Two types of airbags are deployed in a side impact rollover collision: the Detachable Head Curtain protects the attendant from the side impact area cabinet. The Tubular Structure airbag is used with the attendant and the CPR seats for additional head protection.

The Horton Occupant Protection System (HOPS) is a fully-tested system combining advanced restraints, multi-density head protection, tubular airbags and head curtain airbags to protect attendants in a side impact rollover collision.

Like any collision protection system, HOPS is effective only when occupants are wearing seat belts. CPR, head and aft bench seat belts have a detachable third point belt to enhance mobility.



The dynamic rollover test machine enables test engineers to simulate a rollover event while recording significant test data from inside the vehicle. The Hybrid III test dummies are fully instrumented to check head strike impacts, G loads, neck loading and seat belt forces. Comparisons are made to evaluate base line data against data collected with new experimental systems and to ensure the efficacy of the solution.



The Horton body was subjected to 14 rollover impacts while establishing a baseline, and then testing HOPS. The body retained its structural integrity through it all.

**Safety With Substance**



## Biohazard

The threat to patient and attendant safety doesn't come just from accidents. Horton has taken the next step to protect the patient area from biohazards.

Cutting edge biostatic stainless steel surfaces on the O2 panel and on grab rails kill germs on contact.

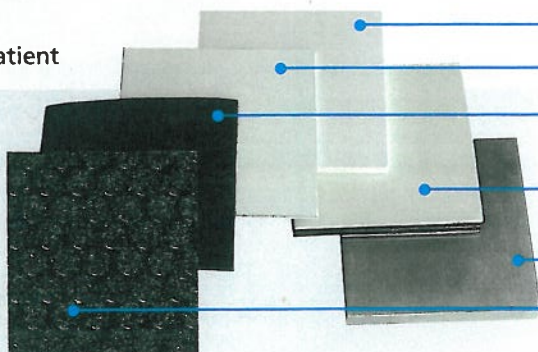
Intelliplex panels are sealed to make decontamination a wipe and go operation. Seamless Avonite countertops keep potential infectious materials from seeping into crevices.



## Sound and Thermal

Horton pioneered automatic patient area temperature control and continues to make vehicles more comfortable. Set the patient area thermostat and forget about it.

An extensive sound control system using composites keeps exterior road noise out of the vehicle, enhancing patient care.



Wood-free composite door core for sound and thermal control

Headliner uses an aluminum composite with anti-microbial protection.

Vibration and thermal isolation layer isolates the interior from the body floor.

Reinforced composite board – provides thermal and acoustic insulation that can't be contaminated like wood.

Aluminum/urethane composite sub-floor is impervious to moisture.

Anti-microbial protected flooring – special coating provides extra protection against micro-organisms.



## VI-Tech Mounting

Horton's exclusive new Chassis Tuned Vibration Isolation Technology Mounting System (VI-Tech), is the first system developed specifically for ambulances. Until now, manufacturers simply used OEM chassis builders' mounting systems designed primarily for aftermarket truck body use.

As a result, undesirable structure borne elements are merely transferred into the patient area where they are incompatible with good patient care and a good work environment. The same mounting systems are typically used regardless of the unique characteristics of the selected chassis.

VI-Tech's isolation system is custom-tuned in the fabrication process for vibration reduction, structure-borne noise attenuation and to provide low profile, low frequency isolation necessary for ideal patient compartment conditions. The neoprene elastomer resists oils, ozone and most solvents which deteriorate commonly used mounts.

Handling stability is enhanced because the mount stiffness is also tailored to specific chassis needs. Like all Horton products, the new Chassis Tuned VI-Tech System has been dynamically crash tested for the ultimate in proven customer assurance.

The VI-Tech experience is unique. Drive a Horton and see for yourself.





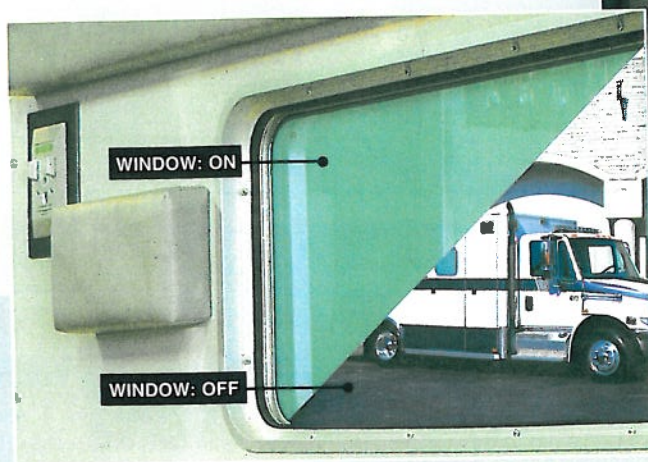
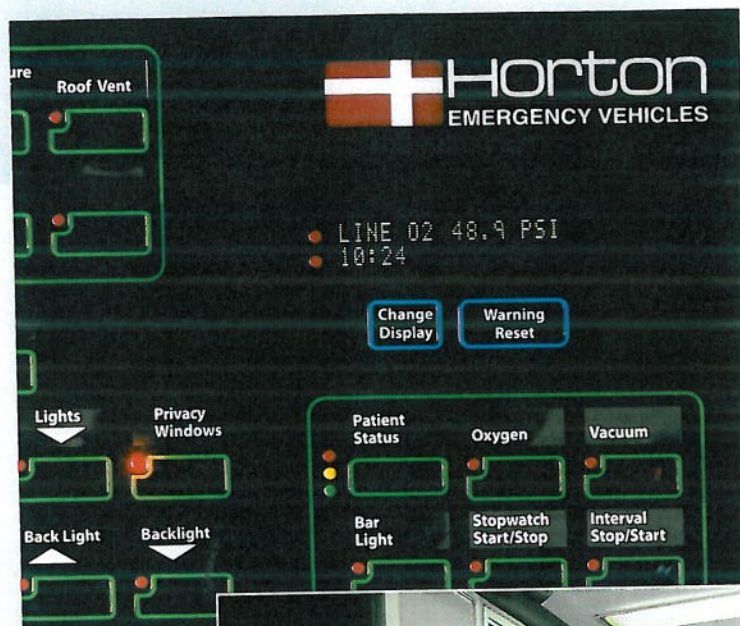
## Innovations

Horton's concern for safety led to our development of sophisticated oxygen management systems. Both low- and high-pressure systems are constantly monitored. Alarms inform the attendant of low bottle pressure or delivery pressures that are too high or too low.

Modular aluminum cabinetry lasts for the life of the vehicle and eliminates decomposition and contamination present with wood products.

Heated drug and IV lockers keep life-saving materials at body temperature to avoid thermal shock.

Electronic Privacy Windows use the latest technology to block the view of spectators on scene, but clear with the push of a button for transport.





*Prairie Township began  
with Horton in 1968 and  
still relies on Horton  
with their 2009 623.*



Whether serving a small rural township or a large metropolitan city, Horton Emergency Vehicles strives to establish a cooperative, long-term relationship by providing complete resources to each Horton owner. Hundreds of repeat customers attest to the quality of Horton vehicles and the value of building a lasting partnership. Although technology and innovation have been among our greatest assets, Horton's integrity and solid after-sale service have been the key to our longevity.







## Horton Emergency Vehicles Company

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[www.hortonambulance.com](http://www.hortonambulance.com) • e-mail: [info@hortonambulance.com](mailto:info@hortonambulance.com)

product no. 4830017





*Is your ambulance Interior*  
**Horton Safe**



**Horton**  
EMERGENCY VEHICLES



# Protection Only

A great deal of publicity and discussion in the world of EMS involves ambulance safety. While occupant safety in the event of a crash is important, focusing solely on impact safety is a great injustice to EMS workers. The daily exposure to microbial contamination in the patient area offers a much more widespread risk that is often given only cursory treatment or is ignored altogether.

Always the leader in crash safety testing, Horton Emergency Vehicles has also long recognized the importance of patient area contamination and has attacked the issue on two fronts. First, Horton has removed all natural organic materials from the vehicle. Decaying organic compounds often serve as hosts in which microbial contaminants can breed and multiply. Wood and wood related products that absorb moisture are excellent examples of poor material selection. Horton's commitment to new technology composite materials capitalizes on their unique features while eliminating contamination danger at the same time.

Even more important is Horton's development of material selections and techniques that actually incorporate the ability to kill undesirable microbes on an ongoing basis inside the vehicle. While typically used wipe-down procedures should still be followed religiously, tests have shown them to be far from 100 percent effective. That's where Horton interiors come into play. Our interior materials in cabinets, headliners, floors, grab handles and upholstery now actively fight and destroy bacterial growth 24 hours a day. We are there to help protect your staff, even when they are not using the vehicle. The anti-bacterial properties are permanent — they will be working as long as you own your Horton Emergency Vehicle. How much additional do you have to pay for these critical options? Nothing. They all come standard on every Horton Emergency Vehicle.

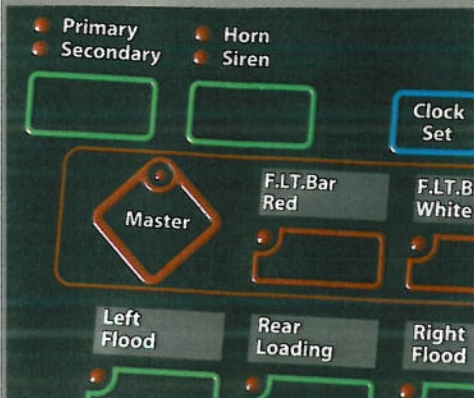
Headliners and cabinet interiors might not get the cleaning attention of work surfaces. The interior of every Horton cabinet is manufactured with our exclusive Agion process. Activated anytime it comes into contact with moisture, the coatings release silver ions to kill unwanted microbial contaminants. Headliner materials are also coated with antimicrobial material for a full envelope of protection.

The interior is further protected by eliminating structural materials like wood that can remain damp, even after cleaning, and act as an organic host for bacterial growth.





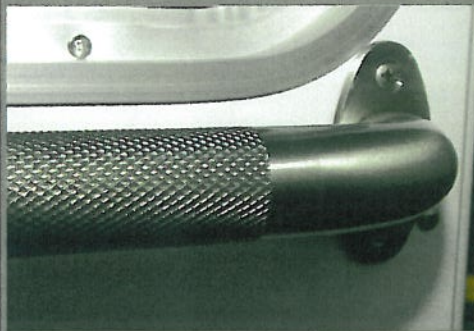
# Horton Provides



How do you decontaminate a switch panel that is touched by a bloody glove? Horton's exclusive sealed switch panels eliminate all gaps and crevices where contaminants might collect. The exterior surfaces are then manufactured with antimicrobial coatings to kill any microbial residue.



Horton's standard stainless steel and optional Avonite work surfaces eliminate seams and crevices that trap contamination.



Both floor and overhead grab handles have a durable powder coat finish that includes antimicrobial protection.

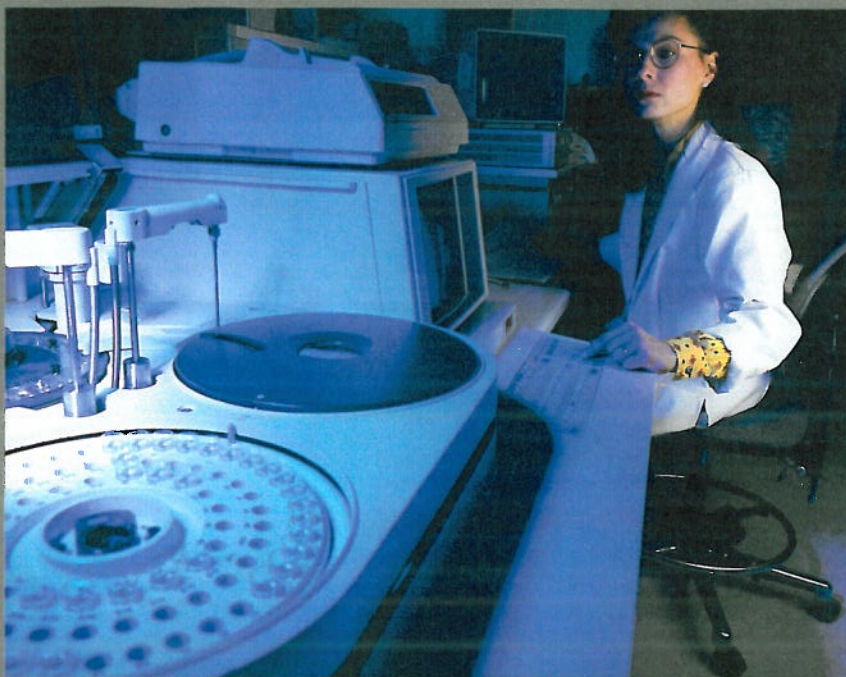


With any new antimicrobial surface developed by Horton, samples are created and undergo stringent laboratory testing.



 **Horton**  
EMERGENCY VEHICLES





Extensive testing has always been a trademark of the Horton vehicle. Our customers can rely on the proven performance behind every product and innovation. Each day, outrageous claims are made concerning safety and performance. The fact is only Horton actually invests in the kind of thorough testing necessary to support its products and to be sure they have earned the right to carry the Horton name.

Ask your Horton representative to discuss antimicrobial protection and show you why the Horton vehicle is unsurpassed in the industry.





# HOPS

**Horton Occupant Protection System**  
*for rollover collisions*



Horton  
EMERGENCY VEHICLES

*Safety With Substance*





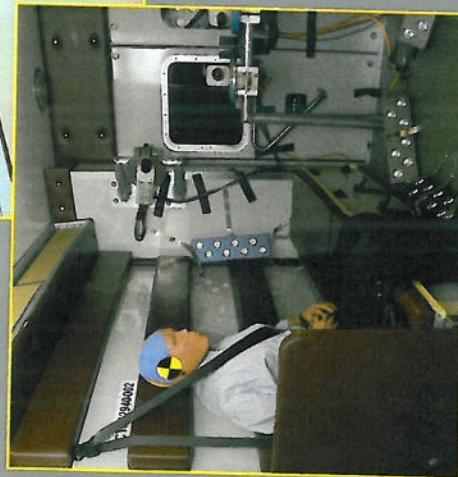
# Introducing HOPS

## Horton Occupant Protection System

An emergency medical vehicle responding to a call presents a unique paradox. Medical personnel rush to help someone in need, but at the same time put their own lives at risk. Danger lurks at every intersection. Ambulance accidents are commonplace and deaths occur at a higher rate than in other professions. According to the National Highway Traffic Safety Administration, rollover accidents are the most violent of all types of motor vehicle crashes typically causing over 10,000 fatalities and 24,000 injuries per year. Head trauma is the most frequent type of fatal and non-fatal injury. That figure represents about 32 percent of all occupant fatalities. According to the NHTSA Crash Analysis Center, as a class, rollover injuries constitute one third of all vehicle accident injury costs.

Long known for its leadership in safety and testing in the ambulance industry, Horton Emergency Vehicles has invested years of research to develop a new advanced occupant protection system for these severe rollover crashes. Horton's Occupant Protection System (HOPS) has combined advanced research on airbag protection, head strike dissipation and occupant restraint devices into today's ambulance interior. As always, Horton has performed extensive, fully documented research to verify the efficacy of every step. And even more important, the new HOPS system is now standard equipment on every Horton Emergency Vehicle.

The Horton Occupant Protection System (HOPS) is a fully-tested system that combines advanced restraints, multi-density head protection, tubular airbags and head curtain airbags to protect attendants in a side impact rollover collision.



Like any collision protection system, HOPS is effective only when occupants are wearing seat belts. CPR, head and aft bench seat belts have a detachable third point belt to enhance mobility.

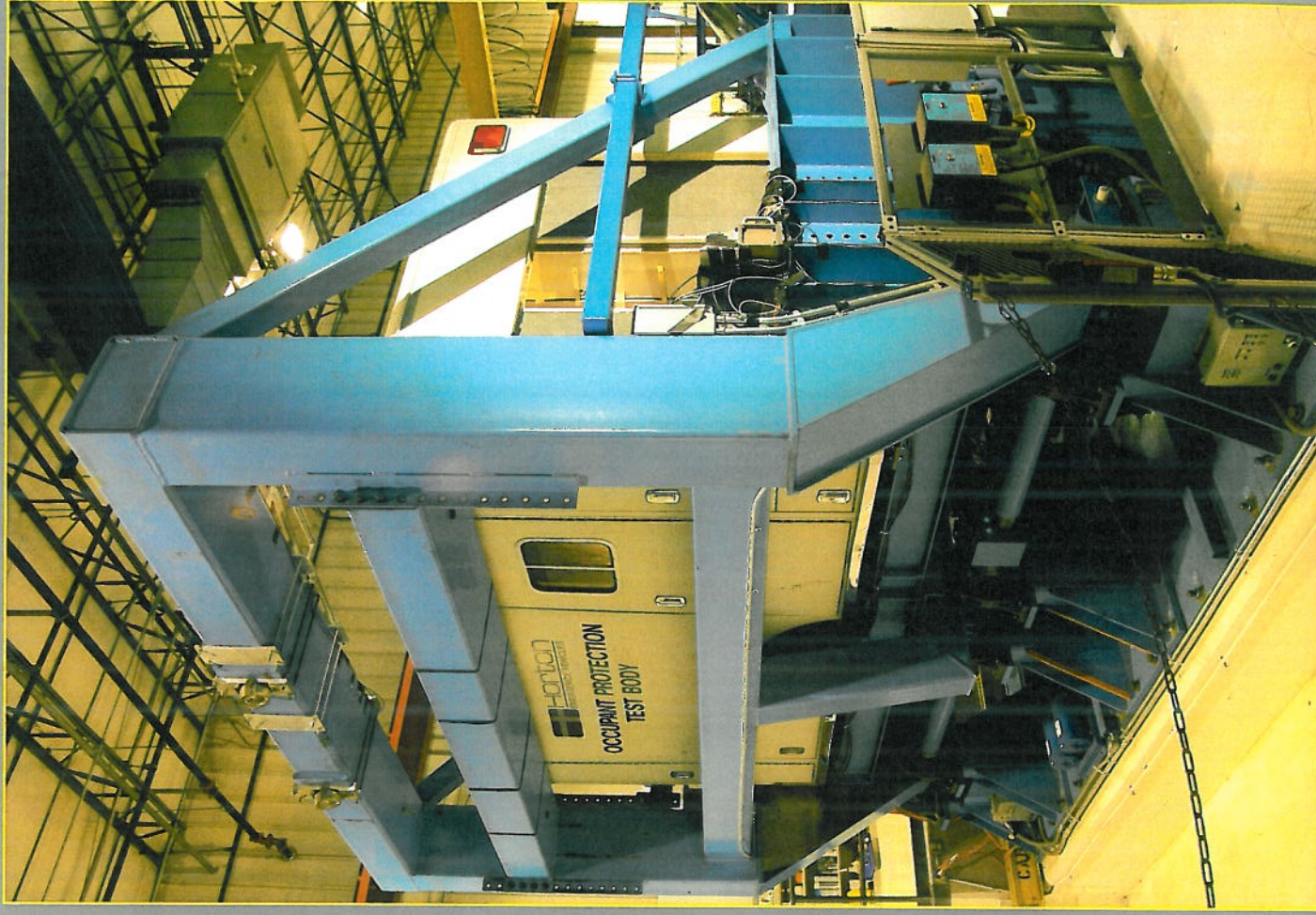




Two types of airbags are deployed in a side impact rollover collision: the Inflatable Head Curtain protects the attendant from the inhalation area cabinet and (optional) the attendant at each end of the bench seat. The Tubular Structure airbag is used with the attendant and the CPR seats for additional head protection.



The dynamic rollover test machine enables test engineers to simulate a rollover event while recording significant test data from inside the vehicle. The Hybrid III test dummies are fully instrumented to check head strike impacts, G loads, neck loading and seat belt forces. Comparisons are made to evaluate base line data against data collected with new experimental systems and to ensure the efficacy of the solution. The Horton body was subjected to 14 rollover impacts and retained its structural integrity through it all.



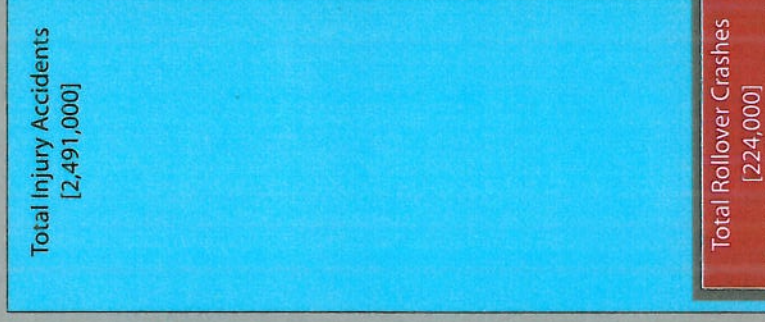
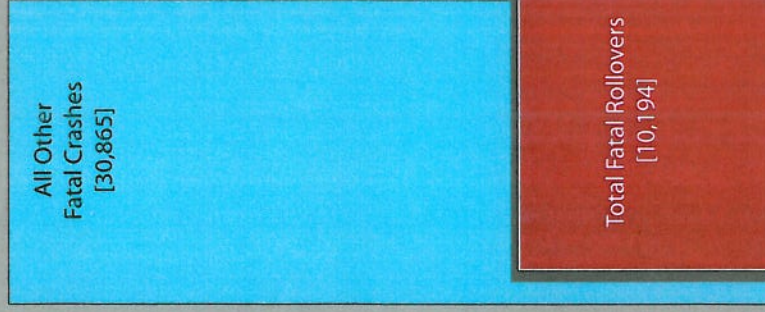


# Why HOPS

The ambulance industry has long recognized the exposure to danger faced by vehicle occupants. NHTSA, NIOSH, GSA and other agencies are actively involved in investigating the problem of occupant safety in ambulances, as are various special interest groups. While nearly everyone is willing to acknowledge the problem, few have offered concrete solutions. The difficulty lies in the very nature of the ambulance patient compartment. It is a large unrestricted space around which attendants must move to perform their emergency functions. It is filled with hard cabinets and other obstacles and seating positions vary widely.

Rollover crashes and severe head injury potentials demand immediate solutions. But products presented to date are often merely "Band-Aid" approaches to the problem. Even worse, there is little or no testing undertaken to verify the efficacy of such offerings. By leading end users to a false sense of security with unverified solutions, manufacturers and vendors often provide a greater disservice than if they had done nothing at all.

As the industry leader, Horton Emergency Vehicles committed its resources to the development of substantive solutions backed by thorough and exhaustive testing programs.

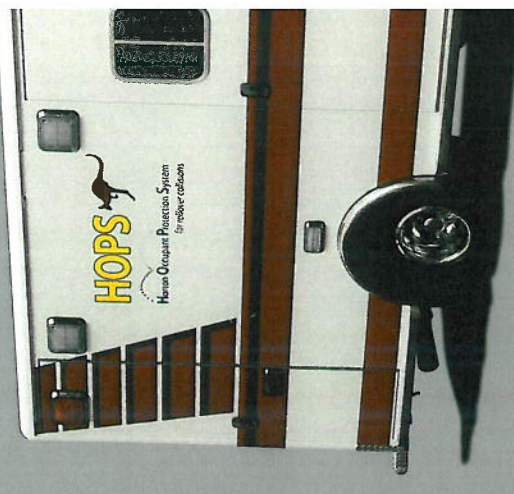


source: NHTSA, Traffic Safety Facts 2007, DOT HS 810 993

While total rollover crashes make up a low percentage of injury accidents, the severity of injury is much higher. Year after year fatal rollovers account for 20 to 25 percent of all fatal crashes.



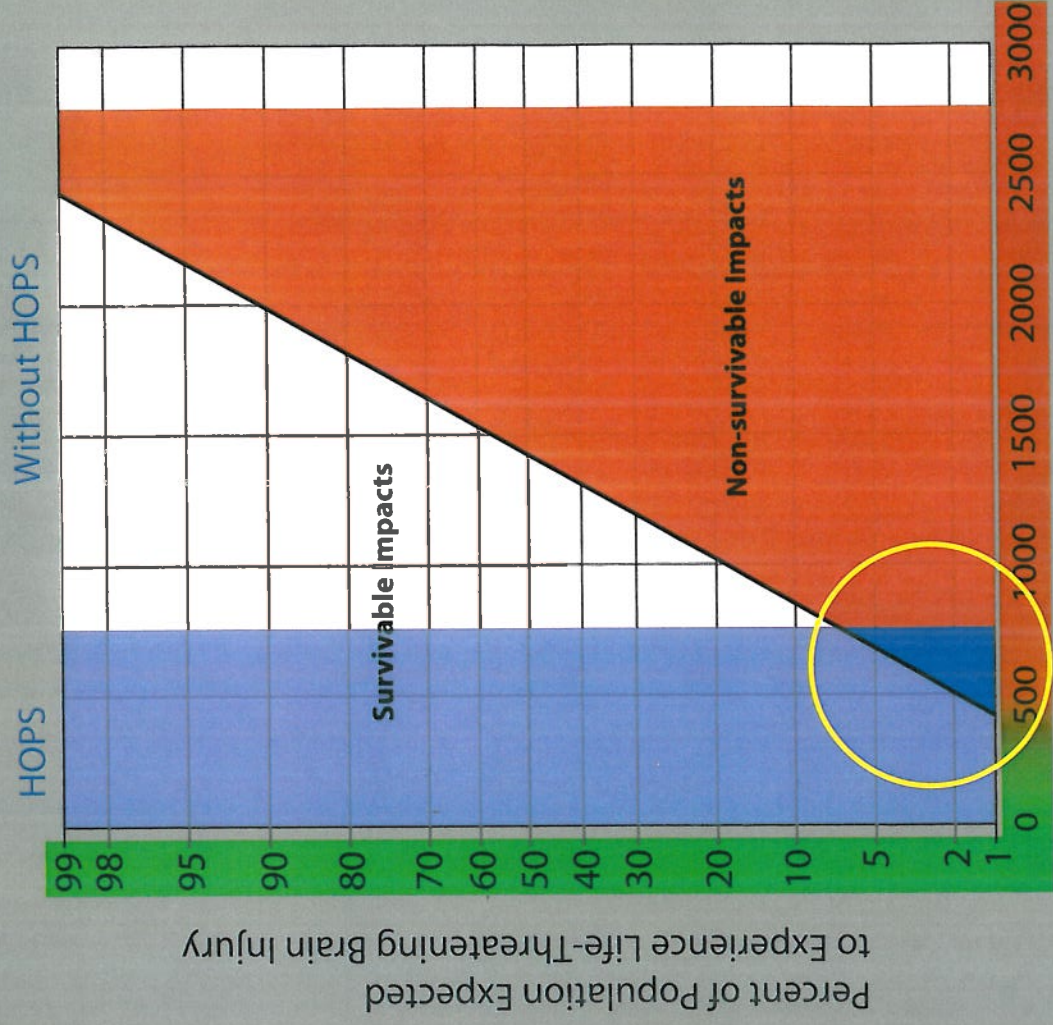
More than 30 years of impact testing did more than create a base-line for HOPS development. Horton testing validated the structural integrity of the body, as well as the patient area. This validation is unmatched by any other ambulance manufacturer.







Violent head strikes against hard surface cabinets represent one of the most significant dangers within the ambulance interior. Horton's baseline testing, as shown in red in the chart below, indicates these forces can be non-survivable in nearly 100 percent of the impacts. These same tests run with HOPS installed show the increased occupant protection reduces the fatality risk from head strikes by 95 percent. The yellow circle on the chart illustrates this reduction of risk for all but the most vulnerable 5 percent of the population who may be infirm, suffer from prior injury or who may be extremely feeble due to advanced age.



Head Injury Criteria

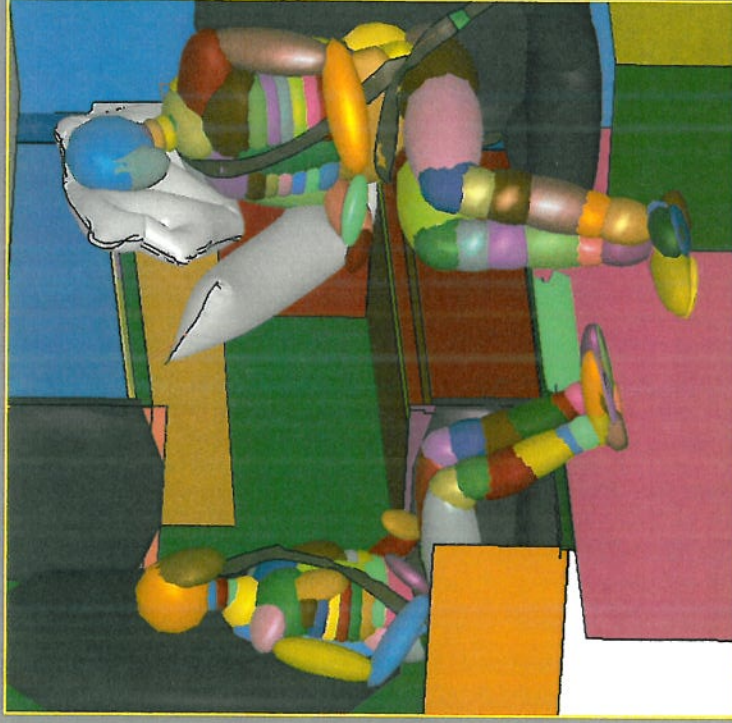


# What's behind HOPS

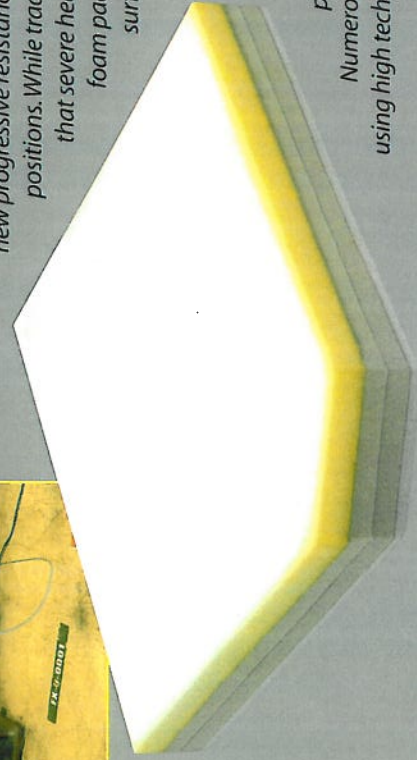
Horton Emergency Vehicles has employed extensive dynamic rollover testing, Hyge Sled testing, direct impact crash testing, L-DYNA-MADYMO computer simulation models, cannon impact tests for head strike and restraint verifications with state of the art Hybrid III fully instrumented test dummies.

Tests were conducted to verify body to chassis mounting integrity, cabinet retention, seating stability, contact surfaces, and compliance to ECE and SAE cabin integrity requirements. For the first time, real solutions are being offered with the substance of solid engineering and verification testing behind a comprehensive safety system for ambulance rollover accidents.

*In a side impact rollover collision, both computer modeling and high speed film show how occupants rise out of their seats changing head strike areas.*



A head-strike cannon was used to test the HOPS cushion system.



In addition to the inflatable cushion system, the HOPS system includes Horton's new progressive resistance headrests at all squad bench and CPR seating positions. While traditional foam padding feels quite soft, tests show that severe headstrikes are transmitted completely through the foam padding, literally "bottoming out" on the mounting surface and offering very little protection.

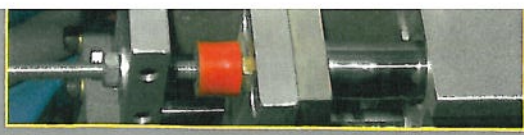
The progressive resistance product dissipates the energy throughout a laminated protective surface to eliminate the bottoming effect and offer additional protection much like that

provided by high impact sports and racing helmets. Numerous combinations and materials were evaluated using high tech cannon fires at the test laboratory.



Horton's detachable three-point harness system's barrier seat bolsters to confine the occupant in a detachable feature on the over the shoulder p squad bench and the CPR seat permits the EM the patient without removing his seat belt.

Seat belts are subjected to extensive safety and durability testing.





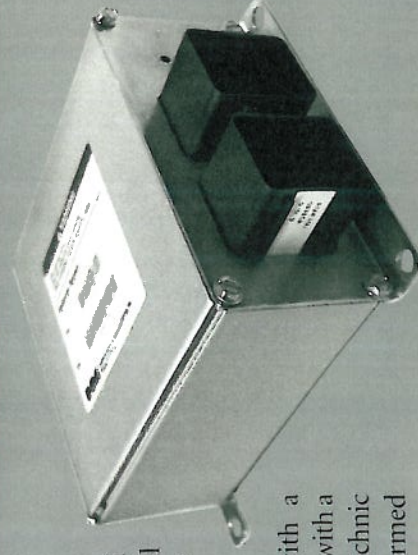
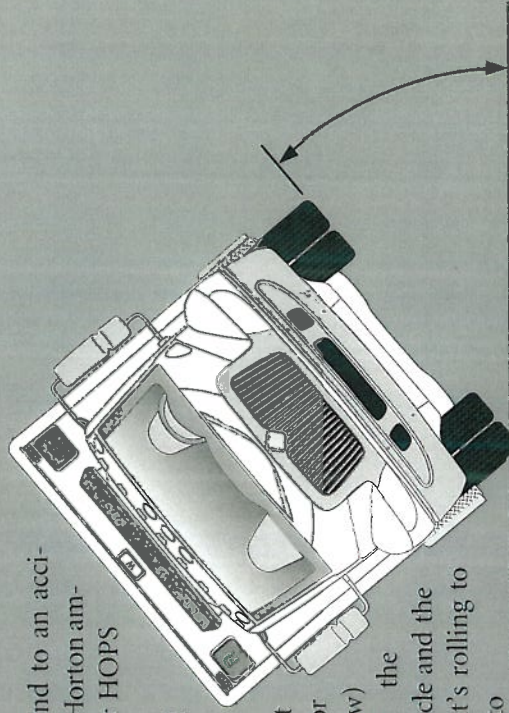
# What you'll find in a HOPS equipped ambulance

If you respond to an accident involving a Horton ambulance, look for HOPS warning labels.

HOPS will not deploy during a frontal or side-impact crash. A roll sensor (pictured below) calculates both the angle of the vehicle and the speed at which it's rolling to determine when to fire the airbag restraints.

If occupants require emergency extrication after a frontal or side-impact crash, special caution must be taken by rescue personnel, as HOPS may still be active and ready to deploy.

The airbags are filled with a pressurized stored gas cylinder with a small quantity of a solid pyrotechnic fuel. When fired, the gas is warmed slightly and expands to fill the head curtain or tube airbag.



## WARNING

PRESSURIZED GAS AND/OR PYROTECHNICS contained behind this panel or in cylinder. Release of gas can cause serious injury.

- NEVER service, salvage or reuse.
- NEVER weld, apply heat, grind, puncture or drill.
- Contact manufacturer for disposal instructions.

19329



## WARNING

TO AVOID SERIOUS INJURY

- Do not sit or lean unnecessarily close to the airbag.
- Do not place objects over the airbag or between the airbag and yourself.
- For maximum safety protection, you must always wear your seat belt.

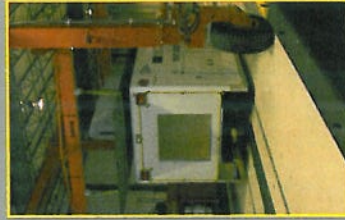
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## DO NOT TAMPER



European and SAE standards dictate a series of tests to address survivable space around its occupants. Reasoning that if a cab occupant is entitled to certain crash protection, then certainly someone in an ambulance patient compartment should enjoy the same protection, Horton applied these same tests.

Far exceeding any structural requirements of the KKK specifications, this testing marked the first time in history such survivability testing was done on an ambulance body and clearly demonstrated the structural integrity of the Horton body. The tests were run with all cabinetry in place to demonstrate they would not detach and injure the occupants.



in conjunction with  
spaces. The  
the harnesses on the  
forward to access





# We didn't get here overnight

How does an ambulance company create the world's safest ambulance?

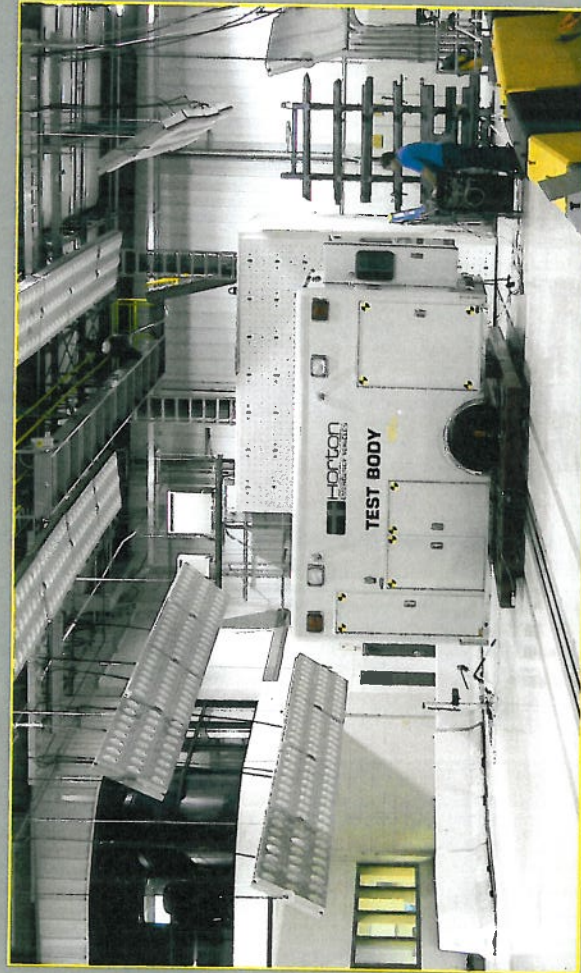
It didn't happen overnight. It started more than 30 years ago with a desire to build an ambulance body that would not only stand up to day-to-day driving rigors, but would protect its occupants.

Safety isn't a guessing game. "I *think* this cabinet will stay in place in an accident" is not an acceptable answer. "We *heard* about a crash with our vehicle where no one was hurt" is not an acceptable answer. "We've been doing it this way for years," is not an acceptable answer.

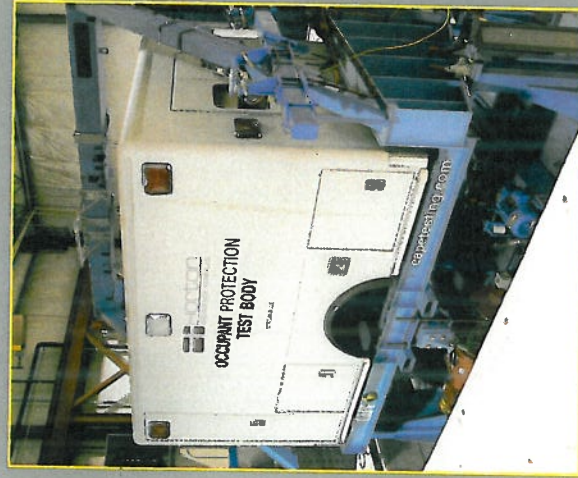
The only solution is to test. And now, our decades of testing has brought Horton to this point: two types of advanced airbag protection, custom restraint systems and sophisticated head protection. Modeled on computers and then tested with real impacts, HOPS is truly Safety With Substance.

Real world solutions backed by extensive research engineering and testing — it's what you have come to expect from us.

See your Horton dealer today and let him show you how you can use HOPS, the most advanced ambulance occupant protection system ever designed for rollover crashes, to protect your staff.



HOPS testing was conducted at the Center for Advanced Product Evaluation (CAPE), a modern crash-test facility on the campus of IMMI. Above: a technician preps the sensors, high speed cameras and data collectors before a side impact test. Right: rollover impacts are created with this massive frame, the only one of its kind in the world.



## Safety With Substance HOPS

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