



## BID NOTICE

The Florissant Valley Fire Protection District is accepting sealed bids per specifications for an ambulance to treat and transport patients within the district. Specifications may be obtained at the Fire District Administrative Offices, 661 Saint Ferdinand Street, Florissant, Missouri 63031 between 8:00 AM and 4:00 PM Monday through Thursday, and between 8:00 AM and 3:00 PM on Friday. The RFP also may be obtained at our website, [www.fvfpd.com](http://www.fvfpd.com). All bids should be marked "SEALED BID/Ambulance" and mailed or delivered to the Fire District Administrative Offices no later than 3:00 PM Friday, January 12, 2018. All bids are scheduled to be opened by the Board of Directors at their meeting on January 23, 2018 at the Fire District Administrative Offices.

The Florissant Valley Fire Protection District reserves the right to reject any or all bids, to waive variations or formalities, and to negotiate changes, additions, or deletions. The Fire District reserves the right to accept the bid it deems to be in the Fire District's best interest and will not necessarily be obligated to accept the lowest bid. The Fire District also reserves the right to extend the timeframe to submit bids, as well as extending the timeframe to open the bids. If you should have any questions, then please call (314)837-4894 and ask to speak with the Medical Officer.

The Florissant Valley Fire Protection District hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for award.

**FLORISSANT VALLEY FIRE PROTECTION DISTRICT**

**NOTICE TO ALL VENDORS WISHING TO SUBMIT A BID ON AN  
AMBULANCE:**

The following specifications are for an ambulance.

It is not the intention of these specifications to eliminate any manufacturer from submitting a bid. However, please note that the Florissant Valley Fire Protection District would not consider any bid that does not meet the design criteria of these specifications.

Bids shall be submitted on the anti-collusion form provided. Each bidder must also include a separate quote sheet for all items bid, which must include the unit cost, item/part number, the exact product bid, and shipping method & cost. All products bid must indicate an estimated delivery time once ordered.

**Intent of Specifications:**

It is the intent of these specifications to provide for an ambulance. The Fire District is interested in purchasing one (1) ambulance. The Fire District or any other governmental agency may, at its discretion, purchase from this RFP any additional quantities through sixty (60) days from the bid opening date.

The bid price must remain valid until sixty (60) days from the bid opening date.

Each bid shall be accompanied by a detailed set of specifications from the manufacturer showing the exact product bid and all accessories. Failure to submit such detailed specifications may be cause for rejection of the bid.

For easy review, bids shall follow specifications item by item. Any exceptions will be noted on a separate sheet, at the end of the bid, listed item by item. In addition, any options to the bid items shall be listed clearly on a separate sheet of paper.

**Equal Opportunity:**

The Florissant Valley Fire Protection District hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, sex, or national origin, in consideration for an award.

**Quality and Workmanship Reliability:**

The warranty for each product bid shall be included with your bid. Any extended warranty information and pricing shall also be included.

## **1. GENERAL**

---

### **1.01 Scope**

The ambulance specification documented here establishes requirements for a new automotive emergency medical services (EMS) ground vehicle used for out-of-hospital medical care and patient transport. The term *new* as applied in this standard is intended to refer to the original construction of an ambulance using all new materials and parts. Bidders shall not propose ambulances that are refurbished or remounted.

### **1.02 Purpose**

The purpose of this document is to specify the purchaser's requirements, performance parameters, and essential criteria for the design of this ambulance. This document shall layout exacting details of layout and equipment.

### **1.03 Application**

This specification shall apply to vehicles intended for use in both emergency and non-emergency operations.

### **1.04 Equivalency**

This specification is intended to provide the bidder the guidelines and parameters of the ambulance to be purchased. Many of the components specified here can be procured from common vendors. In those instances, the model or brand specified shall be used. The bidder is encouraged to propose a like model for those items in this specification which they cannot comply to. Alternative construction and design methods detailed by the bidder shall not be cause for automatic rejection. The specification for this ambulance has a desired level of quality and workmanship. In instances where exceptions and clarifications are necessary, detailed descriptions and photographs may be used.

### **1.05 Exceptions**

Each section requiring a response shall be marked by the bidder to acknowledge acceptance and compliance to the specification. Should the bidder choose not to comply with the specified requirements, the bidder shall disclose to the purchaser what they are offering in comparison. Exceptions to the proposal shall be documented in a centralized location in this bid proposal. The exceptions section of the proposal shall include the section heading, the page number and a detailed description of what shall be proposed by the bidder. Bidders taking 'total exception' shall not be allowed and will be considered unresponsive as this disregards the purchaser's request of a comparable product. Exceptions with descriptions claiming they meet or exceed the specification with no backing documentation will be considered non responsive and subject to disqualification.

### **1.06 Drawings**

The bidders ambulance proposal shall include computer aided design (CAD) drawings for the model specified here. Two dimensions (2D) sales drawings shall be acceptable for this proposal. The bidder will not accept standard model or generic drawings as these are not an accurate depiction of the vehicle specified. Drawings provided "upon request" shall not be permitted by the purchaser.

Upon acceptance of the proposal and finalization of the order, the bidder shall have three dimensions (3D) models to complete the ambulance. These 3D models shall be available to view at the purchaser's request during the build process. To maintain a level of quality and

craftsmanship, the entire ambulance shall be modeled with 3D CAD software before any fabrication begins. Manufacturers utilizing a different engineering method shall document this in the exceptions section of this document.

#### 1.07 Referenced Publications

This specification specifically sites documents or portions of documents below. It is the bidder's responsibility to ensure the ambulance proposed meets the requirements set forth in these documents. The bidders proposed ambulance must meet Federal Ambulance Specification KKK-A-1822-F up to and including compliance and testing to meet Change Notice 10.

**Does your bid comply with KKK-A-1822-F CN 10?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**Is this specific document included in your bid proposal?** Y\_\_\_ N\_\_\_

#### 1.08 Responsibility of the Purchaser

It shall be the responsibility of the purchaser to consider the amount of equipment and personnel that will be carried on the ambulance and to specify a minimum usable payload that will accommodate this weight once the ambulance is placed in service if this weight exceeds standard regulations. It shall be the responsibility of the purchaser to specify any details of the ambulance that would exceed the minimum specifications of those standards. After acceptance of the ambulance, the purchaser shall be responsible for ongoing training of personnel to develop and maintain proficiency regarding the proper and safe use of the ambulance and its associated equipment.

#### 1.09 Responsibility of the Contractor

The bidder shall provide a detailed description of the ambulance with the proposal along with a list of equipment to be furnished. Documentation of all testing data detailed in this specification shall be included in the bid proposal. Failure to comply with this requirement is considered to be non-responsive and will be subject to rejection for this cause.

The bidder's detailed description shall include exceptions and clarifications clearly defining each section of the proposal not be fully compliant with the requirements of detailed specification defined here.

Responsibility for the ambulance and customer supplied equipment shall remain with the contractor until they are accepted by the purchaser.

#### 1.10 Manufacturing Capability

The ambulance manufacturers shall use a **continuous flow production** system to assemble their models of ambulances. The advantage of this continuous flow system is the entire assembly of the vehicle is broken down into logical assembly phases to which resources are attributed and properly trained. A description of the manufacturer production system shall be included.

The manufacturer supplier base shall be horizontally integrated. Therefore, the manufacturer shall have a light supplier base able to supply the manufacturer with a vast array of components. The advantage of horizontally integrated suppliers is being able to meet production demands during peak periods without the need to hire untrained personnel.

The ambulance manufacturer's production facility shall be capable of producing over 500 units any given fiscal or calendar year. The manufacturer shall have produced at least 500 units of varying models for the last 5 years consecutively. The manufacturer shall also provide a list of like models to the purchaser upon request.

**Number of ambulances manufactured in 2016?** \_\_\_\_\_

**1.11 Schedule**

The manufacturer shall be able to schedule the ambulance into its production cycle to give an accurate deadline of completion from the time of the signed accepted order. The bidder shall include the proposed lead time for the completion unit and other important milestones in a Gantt chart.

The manufacturer shall not be held liable for changes arising from its failure to make or delay in making delivery because of fire, flood, strike, riot, chassis shortage, accidents, acts of force majeure, or any circumstances beyond the bidding manufacturer's control.

**1.12 Quality Processes**

A manufacturer's internal quality process system shall be in place. This quality processed system shall conform to ISO-9001 specifications. To ensure the quality system is continually maintain the manufacturer shall be audited by an independent agency. Documentation on this internal quality process system shall be provided.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**1.13 Ambulance Components**

All components shall be installed in accordance with the applicable manufacturer's installation instructions. The emergency medical care vehicles, including chassis, equipment, devices, medical accessories, and electronic equipment shall be standard commercial products, tested and certified to meet or exceed the requirements of this standard. Vehicles shall be free from defects that may impair their serviceability or detract from appearance. All bodies, systems, equipment, and interfaces with the chassis shall be done in accordance with OEM best practices.

**1.14 Serviceability**

The ambulance shall be designed so that all the manufacturer's recommended routine maintenance checks of lubricant and fluid levels can be performed by the operator without the need of hand tools. Ambulance components that interfere with repair or removal of other major components shall be attached with fasteners, such as cap screws and nuts, so that the components can be removed and installed with ordinary hand tools. These components shall not be welded or otherwise permanently secured into place.

In the event of repair (warranty or non-warranty), the manufacturer shall have approved service centers to assist in maintaining and repairing the ambulance. A list of the approved service centers shall be provided upon request of the purchaser.

**1.15 Warranty**

The manufacturer shall include documentation of all warranties pertaining to the new ambulance. Each warranty shall be specifically detailed and shall describe what exactly is covered under the specified warranty. Warranties must be described and detailed in exact

times (e.g years, months, days). Warranties offering “Lifetime” or “Limited Lifetime” are often considered legally vague and subject to interpretation from the manufacturer as well as the state in which the ambulance is placed in service. For this reason, the warranty for this ambulance shall be as follows:

- Module Structure: 25 Years / Unlimited Miles
- Paint: 5 Years non pro-rated / 180,000 Miles
- Electrical: 5 Years / 180,000 Miles
- Conversion Materials and Workmanship: 5 Years / 180,000 Miles
- OEM Materials: 2 Years / 75,000 Miles

A written statement of each of the manufacturer’s warranties shall be provided with this bid proposal.

**BIDDERS WARRANTIES**

1. Module Structure: \_\_\_\_\_ Years / \_\_\_\_\_ Miles
2. Paint – NON PRO RATED \_\_\_\_\_ Years / \_\_\_\_\_ Miles
3. Electrical: \_\_\_\_\_ Years / \_\_\_\_\_ Miles
4. Conversion Materials and Workmanship: \_\_\_\_\_ Years / \_\_\_\_\_ Miles
5. All OEM Materials: \_\_\_\_\_ Years / \_\_\_\_\_ Miles  
*\*\* OEM materials includes ALL installed options on the delivered ambulances. \*\**

**1.16 Documentation**

All documentation delivered with the ambulance shall either be printed format, electronic format, audiovisual format or any combination of these forms of media. The documentation shall be provided in a centralized manual, binder or CD. All documentation shall be clearly labeled and shall be easy for the purchaser to review as necessary.

The ambulance manufacturer shall deliver with the ambulance at least one (1) copy of the following documents:

1. The manufacturer's record of ambulance construction details, including the following information:
  - a. Owner's name and address
  - b. Ambulance manufacturer, model, and serial number
  - c. Chassis make, model, and VIN
  - d. GAWR of front and rear axles and GVWR
  - e. Front tire size and total rated capacity in pounds (kilograms)
  - f. Rear tire size and total rated capacity in pounds (kilograms)
  - g. Engine make, model, serial number, rated horsepower.
  - h. Type of fuel and fuel tank capacity
  - i. Electrical system voltage and alternator output in amps
  - j. Battery make, model, and capacity in cold cranking amps (CCA)
  - k. Chassis transmission make, model, and serial number
  - l. Ratios of all driving axles
  - m. Maximum governed road speed
  - n. Paint manufacturer and paint number(s)

- o. Company name and signature of responsible company representative
  - p. Documents from a certified scale showing curb weight on the front axle and rear axle(s) (without personnel and equipment)
2. Certification of compliance of the optical warning system
  3. Siren manufacturer's certification of the siren
  4. Written load analysis and results of the electrical system performance tests
  5. Certification of slip resistance of all exterior stepping, standing, and walking surfaces

### **1.17 Operations and Service Documentation**

The manufacturer shall deliver with the ambulance at least one (1) set of complete owner/operators manuals. These manuals shall also include service documentation covering the completed ambulance as delivered and accepted.

The owner/operators manual shall include the inspection, service, and operations of the ambulance of all major components thereof. The documentation listed here shall be for each ambulance delivered and shall contain the following information:

1. Manufacturer's name and address
2. Country of manufacture
3. Source for service and technical information
4. Parts replacement information
5. Descriptions, specifications, and ratings of the chassis
6. Wiring diagrams for low voltage and line voltage ambulance-specific systems to include the following information:
  - a. Pictorial representations of circuit logic for all electrical components and wiring
  - b. Circuit identification
  - c. Connector pin identification
  - d. Zone location of electrical components
  - e. Safety interlocks
  - f. Alternator–battery power distribution circuits
  - g. Input/output assignment sheets or equivalent circuit logic implemented in multiplexing systems
7. Lubrication charts
8. Operating instructions for the chassis, any major components
9. Instructions regarding the frequency and procedure for recommended maintenance
10. Overall ambulance operating instructions
11. Safety considerations
12. Limitations of use
13. Inspection procedures
14. Recommended service procedures
15. Troubleshooting guide
16. Ambulance body, chassis, and other component manufacturer's warranties
17. Special data required by this standard
18. Material safety data sheet (MSDS) for any fluid that is specified for use on the ambulance

### **1.18 Certification and Payload Signage**

The complete ambulance shall have a certification and payload label. This label shall be mounted on the body (module) interior in a conspicuous location. The completed ambulance shall have a payload calculation form.

### **1.19 Dimension Labeling**

The completed ambulance manufacturer shall provide a high-visibility label showing the dimensions of the ambulance and the GVWR of the completed vehicle. This label shall be located in a location easily found by the driver.

### **1.20 Component Protection**

All manufacturer or supplier supplied hose lines, air system tubing and electrical harnesses shall be mechanically attached to the frame or body structure of the ambulance. All exposed tubing, electrical wiring and hoses shall be contained in a loom or an insulated covering on both the exterior and interior of the ambulance. Where hoses and electrical wiring looms are passing through metal edges; a protective grommet shall be installed in the hole to prevent premature wear on the loom or hose. Exposed wires and hoses shall not be permitted as this poses a potential hazard and could cause premature failure of critical components on the completed ambulance.

### **1.21 Personnel Protection**

Protection in the form of guards and shields shall be provided on the completed ambulance to prevent injury of personnel by temperature sensitive, moving, or rotating parts during non-maintenance operations. Access to these areas shall be restricted yet still accessible for qualified technicians to perform maintenance when necessary.

Electrical insulation or isolation shall be provided on all electrical components to prevent electrical shock from onboard electrical systems. Electrical systems and wiring shall be properly secured in the electrical control panel to prevent accidental entry or storage in these areas.

The completed ambulance shall be free of sharp edges and protrusions that could injure during routine maintenance or while the vehicle is in motion.

### **1.22 Liability**

The bidding manufacturer shall furnish a Certificate of Insurance showing an aggregate of liability insurance which shall not be less than ten million dollars (\$10,000,000.00). This general liability Certificate of Insurance shall be provided by the manufacturer's insurer. Failure to provide a Certification of Insurance shall be considered non-responsive and cause for rejection of the proposal.

**2. TEST AND CERTIFICATION**

---

**2.01 Testing Capabilities**

The ambulance manufacturer shall be equipped to do a majority of the ambulance testing at their facility. All pull tests, load tests, (including the module load test), lighting level tests and noise level tests shall be done at the manufacturer’s facility. The manufacturer shall have a full range of testing equipment proven by an independent engineering agency.

In-house testing facilities are preferred by this purchaser as this gives the manufacturer flexibility to perform tests on various designs and iterations on a continual basis. All testing shall be audited and documented by an engineering, which will all be accredited under the board of engineering and technology of their respective state or province.

If the Ambulance manufacturer does not have its own testing facility on-site, a detailed description of how continual testing is provided shall be detailed in the bid proposal.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**2.02 Testing Requirements**

The bidding manufacturer shall be capable of passing testing certifications for North America. All testing performed shall meet or exceed the highest requirement set forth in any of the North American standards listed here. The manufacturer shall be able to provide testing or certification results for the following requirements.

**Copies of testing documentation and certification for each of the AMD requirements shall be provided with this proposal:**

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

Copies of different vehicle certifications for the following vehicle specifications shall be provided with this proposal:

- **KKK:** Federal Specification for the Star of Life Ambulance (KKK-A-1822)
- **FMVSS:** US Federal Motor Vehicle Safety Standards and Regulations
- **DOT:** US Department of Transportation

Any manufacturer who exceeds these specifications is welcomed to provide data. However, it needs to be useful in the application of the purchaser to be considered a plus.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**2.03 Additional Testing Requirements**

In addition to the above mentioned testing requirements in section 2.02, the following tests shall be conducted on the specific model, passed and documented.

*2.03.1 Additional AMD Testing Requirements*

- **AMD 004: Cot Retention Pull Test**  
Above and beyond the minimum required 2200 lbs., the bidding manufacturer must have completed a cot retention pull test to meet or exceed 10 times the weight of the cot plus the cot hardware and the weight of a male patient in the 90th percentile per the current NIHS / CCHS data. The minimum requirement may vary, depending on the specific cot (Ferno or Stryker) and cot hardware. Results for both brands must be provided

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**Is this specific document included in your bid proposal?** Y\_\_\_ N\_\_\_

- **AMD 006: Sound Level Test**  
Above and beyond the minimum requirement of 80 decibels or less as tested in the patient compartment, the bidding manufacturer must also perform a sound level test in the front cab, with windows opened 6 inches and reach a minimum requirement of 89 decibels or less. Another sound level test in the front cab must be done with windows closed while reaching a minimum of 84 decibels or less.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**Is this specific document included in your bid proposal?** Y\_\_\_ N\_\_\_

- **AMD 008: Patient compartment Grab Rail Test**  
Above and beyond the minimum requirement of a 300 lbs pull test on the overhead ceiling grab rail, the bidding manufacturer must perform pull tests **on each grab handle** inside the patient compartment. All grab handles and overhead grab rails will be pull tested to 500 lbs., however it is important to mention that deformation may occur at 500 lbs.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**Is this specific document included in your bid proposal?** Y\_\_\_ N\_\_\_

- **AMD 012: Interior Climate Control Test**  
Heating  
Minimum Requirement: From 32°F to 68°F in 30 minutes or less

Above and beyond the minimum requirement, the bidding manufacturer must show that his test began at 1°F and reach 68°F in 30 minutes or less.

Air Conditioning

Minimum Requirement: From 95°F to 78°F in 30 minutes or less

Above and beyond the minimum requirement, the bidding manufacturer must perform the exact same test and reach 78°F in 20 minutes or less.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**Is this specific document included in your bid proposal?** Y\_\_\_ N\_\_\_

- **AMD 013: Weight Distribution**

Above and beyond the minimum requirement of having 20% or more GVWR on the front axle, the bidding manufacturer will need to meet or exceed a minimum of 30% GVWR on the front axle. This added front axle weight distribution is a critical safety aspect in terms of added traction, braking capacity and increased handling capabilities.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**Is this specific document included in your bid proposal?** Y\_\_\_ N\_\_\_

*2.03.2 Additional Testing Requirements*

- **Street side Cabinetry Pull Test**

The bidding manufacturer will need to meet or exceed a pull test on the street side medical cabinetry equivalent to 25 times the weight of the cabinet and action wall assembly or, in the case the cabinets are individual components of the wall assembly, the sum of every individual cabinet plus the cabinet shelves and action wall, in both lateral and longitudinal axis', with the force equally dispersed on the surface of the cabinet. The pull test shall be conducted on a final assembled cabinet installed in a similar module.

**Test Scope – Street Side Cabinetry Pull Test**

Apply the required force to the component using a force application device such that the force is spread equally over the fasteners. Apply the force in a lateral direction. Observe and record the results. Repeat the test procedure by applying the force in a longitudinal direction. Observe and record the results.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**Is this specific document included in your bid proposal?** Y\_\_\_ N\_\_\_

- **Equipment Restraint Devices Pull Tests**

The bidding manufacturer will need to meet or exceed a pull test on any and all equipment restraining device, such as fasteners, O2 brackets or belts. The pull test will be a minimum of 10 times the weight of the restraint device and the restrained equipment.

**Test Scope – Equipment Restraint Devices**

Document and calculate the weight of the equipment and the equipment restraint to be pull tested. Apply the calculated force on each different installation in a parallel and perpendicular plane to the initial plane of the fasteners.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**Is this specific document included in your bid proposal?** Y\_\_\_ N\_\_\_

### 3. CHASSIS

---

#### 3.01 Model

Dodge 4500 4x4, 6.7L CUMMINS Turbo Diesel Engine

#### 3.02 Wheelbase

192.5"

#### 3.03 GVWR

16,500 lbs

#### 3.04 Paint

Chassis will be ordered RED then repainted Candy Apple Red Sikkens 97902RV35

#### Order Details

- 6.7L I6 CUMMINS TURBO DIESEL ENGINE, INCL. ETK
- 87 MPH MAXIMUM SPEED (JJ6) JJ6
- 4.10 REAR AXLE RATIO (DMF) DMF
- CUMMINS TURBO DIESEL BADGE (MPG) MPG
- CURRENT GENERATION ENG CONTROLLER NZC
- DIESEL EXHAUST BRAKE
- ELECTRONICALLY CONTROLLED THROTTLE NHN
- RAM ACTIVE AIR JFE
- SELECTIVE CATALYTIC REDUCTION (UREA) XAL
- 6-SPD AUTO AISIN AS69RC HD TRANS DF2
- SLT Quick order Package 29A
- BASE DOOR TRIM PANEL (CTL) CTL
- FRONT ARMREST W/CUPHOLDERS CDR
- 19.5 X 6.0 FORGED ALUM POLISHED WHEELS-4500/5500 WP4
- CHROME APPEARANCE GROUP AMP
- AMBULANCE PREP GROUP AH2
- 220 AMP ALTERNATOR BAJ
- ELECTRONIC MONITORING SYSTEM XXS
- VOLTAGE MONITORING AUTO IDLE UP SYS XF6
- B-20, BIO DIESEL CAPABILITY XXJ
- BLACK VINYL FLOOR COVERING CKJ
- COLD WEATHER GROUP ADE
- ENGINE BLOCK HEATER NHK
- WINTER FRONT GRILLE COVER XD6
- ELEC SHIFT-ON-THE-FLY TRANSFER CASE DK3
- FULL SIZE SPARE TIRE TBB
- 19.5 STEEL SPARE WHEEL (WKG) WKG
- POWER TAKE-OFF PREP LBN
- TRANSFER CASE SKID PLATE SHIELD XEF
- DAYTIME RUNNING HEADLAMPS, LOW BEAM LM1
- BRIGHT FRONT BUMPER MCT

- BRIGHT GRILLE MFD
- CLOTH 40/20/40 BENCH SEAT-BLACK/DIESEL GRAY V9X8
- DELETE FRONT CENTER SEAT CJT
- FRONT ARMREST W/CUPHOLDERS CDR
- MANUAL ADJUST SEATS JP8
- POWER AND REMOTE ENTRY GROUP N/A CC AJH
- EXT. MIRRORS W/SUPPLEMENTAL SIGNALS LEB
- EXTERIOR MIRRORS COURTESY LAMPS LEC
- EXTERIOR MIRRORS W/HEATING ELEMENT NHJ
- POWER BLACK TRAILER TOW MIRRORS GPG
- POWER LOCKS JPB
- PREM VINYL DOOR TRIM W/MAP POCKET CBZ
- PWR WINDOWS, FRONT 1-TOUCH DOWN JPY
- REMOTE KEYLESS ENTRY GXM
- UCONNECT 5.0 AM/FM/BT RA2
- 1-YR. SIRIUSXM RADIO SERVICE (X9B) INCL
- 5.0" TOUCHSCREEN DISPLAY (RFU) INCL
- GPS ANTENNA INPUT (JLP) INCL
- INTEGRATED VOICE COMMAND W/BLUETOOTH (XRB) INCL
- MEDIA HUB (USB, AUX) (RS6) INCL
- OVERHEAD CONSOLE (CUN) INCL
- REMOTE USB PORT - CHARGE ONLY (RS3) INCL
- TEMPERATURE & COMPASS GAUGE (JFJ) INCL

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 3.25 Suspension

**LiquidSpring™ CLASS®, or Compressible Liquid Adaptive Suspension System**

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### 4. VEHICLE FEATURES

---

##### 4.01 Smart Anti-Idle (838)

There shall be a fully integrated anti idle system installed in the ambulance. The system shall be fully automated and shall not require interaction by the end user. The smart system shall monitor voltage and temperature within the patient module. This system shall automatically shut the engine off while allowing all user functions to be maintained while in “park” mode. The system will automatically restart the unit, if either the voltage shall drop or there is a set temperature change in the patient module. Prior to shut down, or start up the system will alert the operator that the system is entering smart mode.

The system shall be capable of providing significant fuel reduction by preventing long idle times. This system shall also assist in decreasing service intervals, based on reducing engine hours life be reducing significant idle times

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

##### 4.02 Anti-Theft System (838)

There shall be a fully integrated anti-theft system installed in the ambulance. This system, activated via the front console, allows the user to remove the keys from the ambulance. This allows the unit to stay running while reducing the risk of theft. While the system is engaged, if the brake pedal is depressed, the system will automatically shut the unit down, preventing the unit from being driven

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**No exception will be allowed.**

##### 4.03 High Idle Device

A high idle or throttle to engine speed auxiliary control device (high idle switch or throttle) shall be installed to allow an increase in the engine speed when the ambulance is parked. The high idle shall be automatically engaged when the ambulance parking brake is engaged with the transmission in park. The high idle shall deactivate when the vehicle’s parking brake is removed or the brake is applied.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

##### 4.04 Running Boards

Full length exterior running boards shall be installed on the chassis. They shall be constructed of a sure grip material no less than 7 wide with machine punched holes to facilitate water and debris runoff. Aluminum mud flaps shall be added to reinforce the running boards and prevent road debris intrusion. End plates are also installed to reinforce the rear section.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.05 Front Bumper**

See below section – AliArc custom bumper.

**4.06 Rear Step Bumper**

A full width rear step bumper with integrated flip up rear stepping surface shall be installed on the rear of the vehicle. It shall be constructed of a sure grip material no less than 9” wide with machine punched holes to facilitate water and debris runoff. Corners are made of aluminum diamond plate. A 3” rubber bumper is bolted on each corner to protect the bumper. The structure is to be bolted to the chassis for easy replacement and adjustment. An indicator will be incorporated in the rear pad (with the digital clock) over the doors to indicate whether rear step is down (green) or up (red)

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.07 Fenderettes**

Formed fiberglass fenderettes shall be installed on the module body to prevent excess splash on the modular body. The bottom inside lip shall be screwed into L brackets while the side shall be fixed with dual face tape and/or clips. The fenderettes are to be sealed after installation. This method allows for universal replacement and ease of maintenance in this high impact area and prevents corrosion. Aluminum or other metal fenderettes are not desired because of their tendency to cause dissimilar metal corrosion.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.08 Front and Rear Corner Guards**

Front and rear corner guards constructed of smooth stainless steel shall be bonded to the corner extrusions and shall extend 30” from the bottom of the module. This corner guards shall serve as additional protection against stones and small debris.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.09 Front Module Protector**

A front module protector shall be installed to serve as additional protection against stones and other small debris. The protector plate shall be made of smooth stainless steel and shall be installed on each side of the front face of the module extending from the chassis to the top corner extrusions.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.10 Rear Kick Panel**

A full length rear aluminum diamond plate kick panel shall be installed below the rear doors and above the rear bumper. The kick panel shall serve as additional protection in this

high wear area of the vehicle. It shall be replaceable thus, not part of the module. *FVFPD shall be cut into this panel and red reflective vinyl placed behind this cut-out.*

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.11 Cab Seal (034)**

The area between the cab and the patient compartment shall be a pass through opening. The exterior seal between the rear cab pass through window and the front of the module shall be a rubber extrusion clipped and sealed to ensure no water or wind penetration. The gap between the cabin and the module shall be 2”.

The 4” polyurethane seal shall remain flexible in extreme temperatures. It needs to withstand the natural body and chassis torsion when the vehicle is in motion. The material shall be resistant to ozone, sunlight, oil, water, ice and other harsh exterior element.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.12 Fuel Fill**

A cast aluminum fuel fill shall be installed behind the rear wheel well on the driver side.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.13 Diesel Emission Fluid Fill**

The diesel emission fluid (DEF) tank fill shall be located between the cab and module as provided by Dodge.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.14 Ambulance Exterior DOT Lighting – TecNiq Lifetime Warranty**

Sixteen (16) TecNiq LED Marker lights shall be installed on the ambulance.

Five (5) Amber TecNiq LED Marker lights shall be installed on the front plane of the module, three (3) in the center and two (2) in the corners. Two (2) Amber TecNiq LED Marker lights shall be installed on the side planes of the ambulance, one (1) on each side towards the front.

Five (5) red TecNiq LED Marker lights shall be installed on the rear plane of the module, three (3) in the center and two (2) in the corners. Two (2) red TecNiq LED Marker light shall be installed on the side planes of the ambulance, one (1) on each side towards the rear. Two (2) red TecNiq LED Marker lights shall also be installed on the side planes, on the corner extrusion, just above the corner stainless steel guards.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.15 Stop, Tail, Turn and Reverse Lights (125, 762)**

The stop, tail, turn and reverse lights shall be a combination of lights at mid height and in the rear kick panel.

The stop, tail, turn and reverse lights at mid height shall be two (2) Whelen M6 red braking lights, two (2) Whelen M6 white LED back-up lights and two (2) Whelen M6 Series LED amber arrows.

The stop, tail, and reverse lights shall be integrated in the rear kick panel. They shall be Truck-Lite Model 4050, side by side. Four (4) shall be red and two (2) shall be clear.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.16 Side Direction Lights (484)**

Two Whelen M7 series amber turning lights shall be installed above the wheel well fenderettes, one (1) on each side. These lights shall flash in conjunction with the turn signals.

Two additional Whelen M7 series red LED lights shall be installed on each rear compartment door, at mid height. These lights shall flash in conjunction with the turn signals.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.17 License plate holder (905)**

The license plate shall be mounted in a chrome bezel on the rear plane of the module. It shall be lit by two (2) LED lights.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.18 Front Plane Turn Signal (372)**

Two Whelen M6 Series LED amber arrows shall be installed high on the front plane, below the emergency lighting configuration.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.19 Aluminum rub rails (190)**

The ambulance shall have anodized extruded aluminum rub rails. Rubber end caps and spacers shall be used to protect the module and allow for easy replacement. Folded checker plate will not be tolerated as it doesn't offer as much protection on impact.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**4.20 Ali Arc high polish front push bumper**

A high polish aluminum Ali Arc push bumper shall be installed and tied into the chassis frame. This bumper shall house the mechanical Q siren and air horns described later in this document. AliArc is the only acceptable front push bumper for this bid.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**5. DRIVERS' COMPARTMENT**

---

**5.01 Reading Lamp**

A red/clear LED reading lamp shall be installed above the passenger and driver to assist in night time vision. This light shall be installed in the cab headliner and shall be switched from the light head.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**5.02 Floor Console**

A powder-coated aluminum floor mounted console shall be installed on the floor of the cab between the driver's and passenger's seats. This console shall include the OEM radio or touch screen as well as cup holders and blanks for additional equipment. Plywood is not acceptable material for this console for safety reasons.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**5.03 Back-up camera (108)**

The ambulance shall have a back-up camera with a minimum 5" display in the driver's compartment. It shall have a night vision mode to allow for clear viewing at night. It shall automatically switch the display when the vehicle is put in reverse.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**5.04 Interior camera (676)**

The ambulance shall have a patient compartment camera. It shall be displayed in the same screen as back-up camera. It shall be activated when the ambulance module is powered unless the vehicle is put in reverse.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**5.05 Blind spot cameras**

The ambulance shall have two (2) blind spot cameras that activate with the turn signal for the appropriate side that is signaled. They will be installed above each front fender and shall be displayed in the same screen as the back-up camera.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**5.06 Radio communication wiring and preparation**

The ambulance shall include three (3) coaxial cables going from the roof to various locations in the front cabin and patient compartment. A power source shall be included with each coaxial termination point. Exact locations to be provided by Florissant Valley FPD at time of pre build conference.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

## 6. MODULE

---

### 6.01 Body Dimensions

The overall dimensions of the completed ambulance module shall be 170" long by 95" wide. The interior headroom shall be 72" from the floor to the ceiling.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 6.02 Overall Construction

The entire modular body shall be engineered to provide the highest possible structural integrity while maintaining the lowest possible overall weight. This method of engineered construction shall provide an efficient ambulance design with greater usable payload, improved ride characteristics and greater maintenance intervals on brakes and suspension components.

The completed ambulance shall have no water leakage into the cab, compartments, patient compartment, or through any door seal, light seal, or pass through seal.

All welding performed on the fabricated ambulance shall be completed by a welder certified in their particular welding discipline. Manufacturers providing only certification of department supervisors or final inspectors shall not be acceptable and shall be cause for rejection. Certified welders are desired by the purchaser as this proves the welder has met the requirements to perform the task at a high level of quality and consistency. The manufacturer shall provide proof of the welder's certification upon the purchaser's request.

Holes and cutouts for lights and other components attached to the side of the ambulance shall be CNC punched at the time of the module fabrication. Pre-cut holes and cutouts shall be painted to allow for complete coverage. When installation hardware is of dissimilar metals, an anti-corrosive electrolysis inhibitor spray in addition to a plastic well nut insert shall be installed to ensure no contact is made between the module body and hardware fastener.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 6.03 Roof Construction

The ambulance roof shall be of aluminum construction utilizing a customized formed roof extrusion, a roof structure and a single piece roof. The roof extrusion shall be constructed to integrate and accept the side wall tubes, side wall skin, roof skin and the roof structure. A drip rail shall also be integrated into this extrusion.

The roof tube structure shall be 1.5" x 2", variable thickness tubes made of 6061-T6 aluminum. The extruded tube structure shall incorporate a .125 thickness on the longitudinal side and a .070 thickness on the lateral side with four (4) 1/4" radiuses to allow better welding. 5052-H32 1/8" formed C-channel shall be welded to the roof structure in each area where additional equipment will be installed.

The single sheet .090 5052-H32 roof shall be installed on the lip of the roof extrusion to allow the roof sheet to sit flush with the roof extrusion. The roof skin shall be attached to the roof structure using a chemical bonding agent. The roof skin and tubing surfaces shall be properly prepped and cleaned to accept this adhesive. The edges of the roof skin shall be fully welded and grinded to the roof extrusion to provide a single smooth paintable surface.

The module corner extrusions and the roof extrusions shall be constructed in a manner to properly fit without needing corner caps. Unwelded corner pieces allow for more torsion in the modular body and could compromise the structural integrity of the roof and corner construction.

The purchaser will not accept an untested prototypical build for the sole intent to comply with this requirement of the specification.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **6.04 Side Body Construction**

The side of the ambulance body structure shall be constructed of 1.5" x 2", variable thickness tubes made of 6061-T6 aluminum. The extruded tube structure shall incorporate a .125 thickness on the longitudinal side and a .070 thickness on the lateral side with four (4) 1/4" radiuses to allow better welding. Side tubes shall be placed at a minimum of 16" on center. Corner extrusions are welded to the side structure.

A one (1) piece CNC machined cut side wall made of .090" 5052-H32 aluminum shall be chemically bonded to the side structure. The side wall and tubing surfaces shall be properly prepped and cleaned to accept this adhesive. This attachment method is preferred as it creates a side wall surface with no warpage as no heat transfer takes place as it would when the side wall is welded. The side wall shall be inserted into the roof extrusion lip and welded to this extrusion on the back side.

In areas where seating is going to be installed, the side wall shall have a 3/8" 6061-T6 mounting plate rail installed. It shall serve as a proper seat belt mounting point as well as an additional reinforcement in the event of a side impact.

Alternative side wall construction methods not complying with the above detailed specifications can be presented and shall be detailed in the exceptions section of this bid proposal. Photographs and a detailed documentation of the process shall be included in the bid specification. The purchaser will not accept prototype built models or untested construction methods used only to satisfy the detailed description of this specification.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **6.05 Floor Construction**

The floor structure shall be constructed of 2" x 2" tubes made of 6061-T6 aluminum. Different thicknesses, .125" and .250", shall be used to maximize strength/weight ratio to ensure maximum payload capacity while passing all required load testing. A thicker floor structure shall not be tolerated as an exception because it increases the loading height.

In areas where seating or cot anchoring is going to be installed, the floor structure shall have 1/2" 6061-T6 mounting plates installed.

A one (1) piece CNC machined cut skin made of .063" 5052-H32 aluminum shall be chemically bonded to the floor structure. The skin and tubing surfaces shall be properly prepped and cleaned to accept this adhesive.

A minimum .063 heat shield shall be installed under the floor and body structure to serve as additional protection against external heat generated by the exhaust system.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **6.06 Drop Skirts**

On both sides of the ambulance module, there shall be a 6" drop skirt. This drop skirt will start forward of the rear wheel well up to the front of the ambulance module. Consequently, the step-in height will be in a comfortable range and the S1 & S2 street side exterior compartments will allow an easy loading height.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**Step in height proposed for bidders design?** \_\_\_\_\_

#### **6.07 Wheel Wells**

An aluminum wheel well shall be incorporated into the under body structure. This wheel well shall be sealed to prevent water or debris from entering the module. The interior of the wheel well shall be insulated with foam to prevent noise caused from vibration and exterior road noise.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **6.08 Compartment Construction**

The sides of the storage compartment shall be constructed of a minimum .063 machine formed aluminum **diamond plate**. The sides, top and bottom of interior compartment shall be formed and welded to ensure a secure, square fit. All outside edges of the compartment shall be sealed with weather proof sealer/ inhibitor. The compartments shall be properly anchored and reinforced to the door jamb extrusions and the floor structure. The bottom of each compartment shall be constructed of smooth 6061 T6 .090" aluminum and shall have a punched drain hole to facilitate water drainage.

Ventilation shall be provided in the side and/or ceiling of the compartments to allow for adequate air movement when the door is closed. The upper portion of the compartment shall be machine louvered to ensure an even distribution of air escaping the compartment. This even distribution of air movement shall allow the door to close with minimal external force and shall allow it to seal properly against the door jamb extrusion. Air shall flow into the interior of the module via the space between the side wall and the cabinetry.

Exact exterior compartment sizes and dimensions shall match the current fleet and shall conform to the layout detailed in this specification.

The purchaser will not accept prototype built models or untested construction methods used only to satisfy the detailed description of this specification. Alternative construction methods shall be detailed in the exceptions section of this bid proposal. Photographs of this construction method shall be provided to allow for adequate comparison.

Compartment vents that vent to the exterior of the module are not desired because of the ability or dirt and moisture to enter the compartment when the vehicle is in motion. If you do not comply, please describe in detail your compartment ventilation process and provide photos in your bid response.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **6.09 Door Frame Construction**

All exterior storage compartments shall be constructed of an extruded door frame structure and shall align flush with the side wall tubes and welded to the back of the door structure. The front of the extruded door shall not have any signs of welding as this causes distortion to the door and requires the use of bondo or body filler to create the illusion of a smooth surface. Holes for the door hinges shall be CNC machined into the jamb for exact fit when the door is installed. Extruded door jambs shall be sealed against the side wall skin. The extrusion shall be treated and adhered to the side skin to ensure debris and weather does not penetrate the extrusion area. This method is preferred as the extrusion attachments allow for an amount of necessary flex and torsion when the ambulance is in motion. This CNC machined method allows for the easy ordering and replacement of the door should it become damaged during the life of the ambulance.

#### **6.10 Door Construction**

##### *6.10.1 Automatic Locks – Compartments and entry doors*

Each door of the ambulance module (including entry and compartments) will be equipped with individual actuators and locks that lock / unlock with the chassis door switches and/or key fobs. A lock / unlock switch will be provided on the curbside entry door and rear entry leading door. A hidden valet unlock switch will be provided in a location TBD at time of prebuild conference.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

##### *6.10.2 General Construction*

Each door shall be constructed from an extrusion that mates to the door jamb structure. Cut outs for the latches and hinges shall be machine cut and not manually hand cut or drilled out to ensure a consistent fit. The door extrusions shall be welded securely at the mitered edges and each corner shall have a reinforcement welded. The extrusion shall be designed such that the weather seal is placed ahead of the door latch to assist in keeping debris from getting into the latch. When closed, the door shall form a complete weather tight seal. A

second formed rubber weather seal shall be installed on the door frame ensuring a durable weather seal for each compartment.

Adequate reinforcement shall be installed to ensure door rigidity and provide mounting locations for assist handles and / or other equipment.

The exterior door panel skin shall be constructed of one (1) piece .090 formed aluminum. The aluminum shall be engineered to wrap around the form door extrusion to create a complete aesthetically pleasing appearance without exposed seams. Exterior door panels shall be adhered to the extruded door structure with a chemical bonding adhesive. The completed exterior door shall be engineered to fit properly and square into the doorjamb extrusion.

Doors hinges shall be screwed through the pre tapped door and door jamb extrusions. They shall be rust resistant piano hinges. Each door shall be equipped with an appropriate variable speed gas strut hold open to ensure a solid closure. Spring type hold opens are not desired due to their tendency to wear and break over time.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**Does your proposed vehicle offer single or double door weather seals?** \_\_\_\_\_

#### *6.10.3 Compartment door panels*

Exterior compartment interior door panels shall be constructed of .090" powder coated aluminum. Holes for the door panel mounting shall be CNC cut to ensure a proper fit. The interior door panel shall reside in a small recess in the formed exterior door extrusion to give the door panel a flush fit. Access points shall be included on the door panel to allow for easy maintenance of the latching or door opening mechanisms. A low density open cell foam tape shall be installed on the door structure as a dampening insulator from any vibration that may occur.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### *6.10.4 Access door panels*

Access door interior panels shall be divided in three (3) sections, top, middle and lower. The top section shall be made of fiberglass. The recessed window section shall be covered by this trim. The lower section shall be made of stainless steel. The center section shall be made of powder coated aluminum. It shall cover the top and lower section joints via swags. The center sections must be removable for door handle maintenance without the need to remove any other components such as assist handles.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **6.11 Emergency Release Latch**

The side and rear access doors shall incorporate an emergency release latch at the top and the bottom of the doors. This emergency device shall directly trigger the door latch to an

open position in the event the paddle handle becomes inoperative in the event of a crash or mechanical failure.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

## **6.12 Street Side Configuration**

All compartment lighting shall be Whelen Fluorent™ Series High Intensity lighting

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### *6.12.1 S1 Compartment*

This compartment shall be located on the driver's side front of the module directly behind the cab. This compartment shall be used for the storage of the oxygen cylinder. A SCBA bracket shall also be installed in this compartment. Lighting is to be provided by a Whelen High Intensity Fluorent LED light and the floor protected by a dry carpet mounted flush to the door jamb. Dimensions 23.25" x 80.25" x 18.25"

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### *6.12.2 S2 Compartment with stair chair (753)*

This compartment shall be located under the electrical compartment. It shall house a door mounted stair chair and one (1) half depth shelf for a 5 lbs. fire extinguisher and general storage. Lighting is to be provided by a Whelen High Intensity LED Fluorent light and the floor protected by a dry carpet mounted flush to the door jamb. Dimensions 32.00" x 46.75" x 13.75"

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### *6.12.3 S3 Compartment (755)*

This compartment shall be located at the rear of the driver side behind the fuel filler. It shall be a ¾ height, exterior access only compartment with dual adjustable shelves and with one SCBA holder. Lighting is to be provided by a Whelen High Intensity LED Fluorent light and the floor protected by a dry carpet mounted flush to the door jamb. Dimensions 33.25" x 42.5" x 17.75"

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### *6.12.4 Electric Compartment*

This compartment shall contain all electrical components, including Electronic Controller Units for the multiplex system. It shall be locked with a different key and not part of the electronic lock and unlock system. Lighting is to be provided by a Whelen High Intensity Fluorent LED light.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **6.13 Curb Side Configuration**

#### *6.13.1 C1 Compartment*

This compartment shall be located on the curbside front of the module. It is designed to provide interior/exterior access to the ALS compartment. The lower section includes a battery drawer for conversion batteries. Lighting is to be provided by two (2) Whelen High Intensity Fluorent LED lights. Dimensions 29.25" x 56.75" x 31.75".

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### *6.13.2 C2 Access Door (752)*

A side access door shall be located just behind the D1 compartment. This full height door shall allow for entering and exiting the module patient compartment. This door shall have a fixed automotive style window as specified in the window section of this specification. A two (2) step non-skid stepping surface shall be built into in the side entry door step well. The side surfaces shall be aluminum diamond plate and shall cover of the entire step well area. Entry area is to be light by an LED light and the floor protected by a dry carpet mounted flush to the door jamb. There shall be two (2) drains punched in the floor towards the front of the compartment, one (1) on each step.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### *6.13.3 C3 Compartment (917)*

This compartment shall be located at the rear curbside of the vehicle. It shall contain a premium sliding divider with strap for backboard or spine board storage. It shall also have a recessed storage compartment with three shelves and two drawers, with interior access only. Lighting is to be provided by a Whelen High Intensity Fluorent LED light and the floor protected by a dry carpet mounted flush to the door jamb. Traction splint mount shall also be added to the recess section that has the interior drawers. Dimensions 22.50" x 84.75" x 18.75".

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **6.14 Rear configuration**

*A1 and A2 Access Doors*

This is the rear access door for patient loading. Each door shall have fixed automotive style windows as specified in the windows section. On the interior lower panel of the curbside rear entry door (A2), a trash can shall be installed.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**6.15 Automotive Style Access Door Windows with Defrost (903)**

Automotive style windows shall be installed in the access doors. It shall have no exposed extruded trim rings on the outside or the inside. The window shall be installed flush to the door and held in place with automotive adhesive in its recessed window housing. Window designs with an extruded or exposed trim ring are not desired due to the inconsistent sealing. The window glass shall be tempered automotive quality with a dark tint and include a defrost feature. It shall be activated with the heated mirror defrost timer.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**6.16 Body Mounting**

The module body shall be installed using the OEM insulated rubber puck mounts securely bolted from the bottom to allow for ease of removal should the vehicle be remounted. The module body shall be mounted in 12 locations, six (6) on each side of the chassis frame rails. OEM supplied automotive style rubber puck mounts shall be bolted through ½” 6061 T6 aluminum structure plates to serve as reinforcement points of the bottom of the module as well as provide a solid single surface piece to absorb the natural torsion as the vehicle is in motion (“body roll”).

Two additional steel “L” bracket, one (1) on each side, shall be added to the rear chassis frame. These “L” brackets shall also serve as a mounting point for the rear bumper.

The body shall be mounted in such a manner as to allow the lowest possible load height.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**6.17 Insulation**

The module shall be insulated with a vermin and mildew proof reflective faced insulation with a hard compressed fiberglass back. This insulation shall be used in all areas of the module including the sidewalls, doors and roof. Reflective faced compressed fiberglass insulation is recommended due to its nature not to settle over time and the ability to block outside noise. Other insulating methods may be documented and submitted. In accordance to the KKK-A-1822 Federal Ambulance Specifications and NPFA 1917 Standard for Automotive Ambulance requirements, all insulations shall be non-settling type, vermin-proof, mildew-proof, fire retardant, non-toxic, and non-hygroscopic.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_  
**7. PATIENT COMPARTMENT**

---

**7.01 Construction General Guidelines**

The interior of the ambulance shall be constructed in such a way that is free of sharp edges. All interior surfaces shall be easy to clean, impervious to soap, water, body fluids, disinfectants and shall be mildew resistant Wall surfaces shall be a CNC cut **non-wood**, fiberglass or aluminum matching the interior color of the module.

Trim pieces adjoining multiple wall surfaces are not preferred by the purchaser as this adds another crevice to keep clean and could become an unnecessary source of penetration for debris or liquids to enter. Trim molding can also contain sharp edges on the corners and could be a potential hazard.

All components installed in the ceiling shall be mounted as flush as possible and shall not protrude any further than ½” from the ceiling, except for the grab rails. Surface mounted components on the wall shall comply with head protection requirements and shall incorporate a protective shield or covering.

All upholstered seating surfaces shall be gunmetal grey, thermoformed and shall have no exposed stitching. Head pads and vinyl trim areas which are not seating areas shall be safety yellow and customized with vinyl wrapped polyurethane foam with a hard surface backing material.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.02 Floor**

The floor shall be constructed of ¾” marine grade 7-ply plywood and shall extend the length and width of the patient compartment. Where additional sections of plywood are needed, the sections shall utilize lap joint construction to maintain a continuous lay of the floor and eliminate the possibility of gaps or cracking. It shall be bonded to the aluminum panel and screwed only where there are beams or plates. Screws only through the aluminum skin will not be tolerated as the present a potential injury risk and add close to no value to the floor integrity. Holes in the floor for patient handling options shall be CNC pre-cut to ensure maximum precision.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.03 Floor Covering**

Onyx Lonseal Lon Coin II flooring shall be installed in the completed ambulance. The non-slip floor covering shall be rolled at least 3” up both sides of the patient compartment. This floor shall be rolled on the coved floor extrusion and shall be adhered at every point of the floor cove giving a tight secure fit that will not bubble or prematurely tear. The floor shall be a one (1) seamless piece and shall be able to be cleaned without having to purchase special or potentially harmful cleaning agents. This roll up floor shall cover the entire length and width of the compartment’s working area. Areas in the floor where the sidewalls and floor meet shall be sealed to prevent any blood borne pathogens from entering.

Does your bid comply with the specification as written? Y\_\_\_ N\_\_\_

Does your proposal include an exception to this requirement? Y\_\_\_ N\_\_\_

#### 7.04 Cabinets

All cabinet structure, cabinet doors, shelves and openings described here shall be manufactured in fiberglass or aluminum. Over time, wood products tend to warp, distort and shrink creating potential for premature structural wear. The purchaser specifies fiberglass and aluminum construction for its resiliency to harsh environments and cleaners as well as its lightweight size and overall strength. ***NO WOOD PRODUCTS are to be used in the construction of the cabinetry or walls of the patient compartment.***

The overall cabinet structure shall consist of interlocking extrusions. Extruded frame work shall provide the structural integrity of the cabinets as well as creating the individual cabinet sections. These extrusions shall be custom fit and CNC cut to form the particular cabinet configuration. All cabinet extrusions shall incorporate a rounded edge to give an aesthetically pleasing appearance as well as providing a smooth, safe surface for the crew member. Mitered box framed cabinetry will not be accepted as a mitered corner produces sharp edges and potential gaps. Each interlocking extrusion joint shall be attached by two (2) hex machine bolt into the extrusion via a tap and die holes. These fasteners shall lock the cabinet frame structure into place and shall prevent the cabinet sections from twisting. Cabinet inserts shall be placed on the lip of the extrusion and shall be fixed with an adhesive as well as mechanically fastened into position. **This structure alone shall resist to the pull test, the structural integrity of the cabinetry is not reliant on the interior storage cavity!**

Unless specified for a particular purpose, all interior cabinets shall be constructed of preformed fiberglass inserts. Cabinets designed for a particular purpose may be constructed of formed aluminum depending on the application. All cabinets shall be equipped to accept removable adjustable shelves.

All cabinets shall be easy to clean, impervious to soap, water, body fluids, and disinfectants and shall be mildew resistant.

Cabinets with sliding windows shall have a transparent window and window track felt installed in the dedicated channels of the cabinet extrusion. The cabinet windows shall be made of 3/16" **Lexan** and shall incorporate a full length plastic handle. ***Plexiglass is not acceptable.***

Drawers shall be constructed of formed smooth powder coated .063" aluminum. These drawers shall be uniform in size for ease of replacement should the need arise. The drawer should be track mounted and have a self-locking stop to prevent opening past a safe designated point. All drawer faces shall be constructed in an overlapping style to ensure a consistent tight fit over the drawer opening. Handles for the drawer shall be positive catch stainless steel pull latch.

Testing documents of the exact layout shall be provided.

Does your bid comply with the specification as written? Y\_\_\_ N\_\_\_

Does your proposal include an exception to this requirement? Y\_\_\_ N\_\_\_

**7.05 Street side Cabinetry (873)**

The street side layout shall consist of the following cabinetry:

A VALOR CPR seatback shall be located on the street side wall with a one click four (4) point safety belt and include a thermoformed bottom seat cushion. This seat shall be positioned at the patient’s torso position.

Above the CPR seat, a storage compartment with include provisions to store four (4) glove boxes.

Cabinet A – A large storage cabinet shall be in the upper section towards the front. This cabinet shall extend from the CPR seat forward to the bulkhead wall area. It shall be accessible via sliding lexan windows. This cabinet will have 1 adjustable shelf with built in Lexan dividers that slide horizontally to accommodate different equipment and supplies. See drawings.

Cabinet B – A large storage cabinet shall be in the upper section towards the rear. This cabinet shall extend from the CPR seat to rear door area. It shall be accessible via sliding lexan windows. This cabinet will have 1 adjustable shelf with built in Lexan dividers that slide horizontally to accommodate different equipment and supplies. See drawings.

A cardiac monitor countertop shall be installed aft of the CPR seat. The cardiac monitor countertop shall have a lip to ensure dripping fluid will not get into the structure extrusion. The countertop shall be a **solid surface material**, similar to Corian. There shall be a bracket to hold a Lifepak 15 bolted to this countertop – the bracket shall be a **Technimount Bracket Pro Serie 35™ Mounting System For Physio Control LP-15 Defibrillator**

There shall be one (1) pull out drawer on either side of the CPR seating area. These drawers shall pull out toward the isle way and incorporate a sliding Lexan cover. There shall also be an “airway” cabinet under the main action area counter. Exact location and dimensions TBD.

Below the drawer forward of the CPR seat, a bracket shall be installed on the streetside wall to hold a trash container.

At the rearmost end of the streetside basewall a 3 box glove storage compartment shall be recessed into the wall.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.06 ALS Cabinet (759)**

The ALS cabinet shall be made of an aluminum structure with smooth powder coated aluminum cavities and shelves.

The upper section shall be a lockable compartment using a CompX 300 Series lock, with 12V and 110V outlets. The center section shall be a drawer compartment. It shall include a

locking, positive catch stainless steel pull latch. A Smithworks IV warmer tray shall be mounted on the top shelf, left side, upper section of ALS.

The lower section shall be accessed via two (2) extruded aluminum doors with Lexan inserts. The doors shall be operated by positive catch stainless steel pull latches. This section of the ALS cabinet shall have one (1) fixed shelf.

The purchaser will not accept prototype built models or untested construction methods used only to satisfy the detailed description of this specification. Alternative construction methods shall be detailed in the exceptions section of this bid proposal. Photographs of this construction method shall be provided to allow for adequate comparison.

ALS cabinet layout and dimensions shall match the current fleet.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.07 Bulkhead with Pass Through Door**

The ambulance shall be equipped with a bulkhead wall partition. It shall be placed between the driver and patient's compartment, to the front of module. It shall be constructed of aluminum. A sliding door shall be installed to separate the cab and patient compartment. The window shall be centered between the driver and passenger seats. The window shall be at least 150 in<sup>2</sup>. Fixed or hinged windows in this area will not be accepted. Vinyl protectors will be added in the upper section to provide head protection. On the right-hand wall of the pass through, there shall be three (3) map and binders holders installed.

**7.08 OTE temperature controlled cabinet in bulkhead above Pass Through**

Above the pass through on the bulkhead wall, an OTE temperature controlled compartment shall be installed. It shall custom fitted for this location.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.09 Bulkhead compartment**

There shall be a compartment behind the head seat angled at 45 degrees. This compartment shall be accessible by a two-fold extruded aluminum door. It shall house two (2) shelves and room for two (2) coats.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.10 Driver Intention Lights in bulkhead**

Driver intention lights shall be installed above the OTE refrigerator, and will include an indicator for braking as well as both turn signals.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.11 Sliding seat (712)**

In lieu of a squad bench, a **Valor Seat** (Recline, 4 Point Belts, Cut and Sew Vinyl) shall be installed. The seat shall be capable of sliding towards the patient as well as from the knees towards the head. It shall also rotate. The FVFPD logo will be embroidered on the seat.

The main sliding mechanism shall be made of stainless steel. The rails shall be of “L” or “Z” type to allow for easy cleaning. The center locking plate shall be removable again to allow for cleaning. “C” type rail and blind holes will not be accepted because it would be impossible to do adequate cleaning of liquids.

A cabinet will be installed towards the front of the sliding seat. It shall include two large slide out drawers that open toward the attendant and an auxiliary control panel to control module functions. On top of the cabinet, a lipped countertop shall be a solid surface material, similar to Corian.

At the rear of the sliding seat, recessed in the C3 compartment, there shall be a recessed storage compartment with three shelves and two drawers, with vertical Lexan clear panels and interior access only. See current fleet for design.

The purchaser will not accept prototype built models or untested construction methods used only to satisfy the detailed description of this specification. Alternative construction methods shall be detailed in the exceptions section of this bid proposal. Photographs of this construction method shall be provided to allow for adequate comparison. Testing documentation shall be provided.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.12 Waste and Disposal (697)**

A trash can shall be mounted in a bracket at the head area of the cot, on the streetside cabinet wall. A second trash can shall be installed on the rear of the front center console (in the walkthrough area).

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.13 Valor Attendant’s Seat with Child Safety Device (520)**

A Valor automotive style attendant’s seat shall be installed at the head of the cot. The attendant’s seat shall have a four point / one click seatbelt. The attendant shall have front to back travel feature with incrementally locking stages. An integrated fold down 5-point child safety seat shall be incorporated into this seat. The child seat shall meet and exceed all testing requirements. This seat shall only have the ability to swivel 180 degrees due to the child restraint device. The attendant seat shall be equipped with both left and right armrests. It shall also have the FVFPD logo embroidered on the seat.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.14 Dual Overhead Safety Yellow Grab Rail (639)**

Two (2) 90” overhead safety yellow powder coated steel grab rails shall be mounted in the patient compartment ceiling. The grab rails shall be securely fastened to the roof structure in the patient compartment ceiling at each mounting location. The grab rails shall be at least 1” in diameter.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.15 Door Mounted Safety Yellow Handrails (639)**

Three safety yellow powder coated steel handrails shall be installed at the side and rear access doors to allow ease of entry into the patient compartment. The hand rails shall be 90 degree “L” shaped 16” x 16”. These handles shall be designed to give the persons exiting and entering the patient compartment multiple points of contact to maintain safe entry and exit of the vehicle. The access handrails shall be installed on the top and lower interior door panels through mounting plates in the door extrusions. Hand rails attached through the door panel only are not accepted as they have a tendency to pull loose after an extended period of time. They should not need to be removed for handle and locking mechanism lubrication.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.16 Additional Handrails (639)**

Two additional 12" safety yellow powder coated steel handrails shall be mounted in the patient compartment, one (1) right of rear access door and one (1) right of side access door. These additional grab handles shall be positioned in a location that is easy for the attendant to grip when entering the vehicle.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.17 IV Holder (344)**

Four (4) recessed mounted IV hangers specifically designed for holding IV containers shall be installed, including hook and loop straps to adequately secure an IV bag/bottle. The IV holder shall recess into the ceiling creating minimal protrusion into the patient compartment when not in use.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.18 Clock (055)**

A digital clock shall be installed in the patient compartment on the protector above the rear doors. It shall contain counting second hand, turn and brake indicators and a rear step indicator.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.19 Driver Intention Lights**

Driver intention lights shall be installed above the rear doors and will include an indicator for braking, turn signal indicators and a rear step indicator. Driver intention lights shall be incorporated into the clock panel if possible.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.20 Rear Radio Speakers**

A pair of rear radio speakers shall be installed in an upper portion of the patient compartment in an area not interfering with patient care. The speakers shall be controlled by a rheostat volume control on the action area wall.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.21 Patient Cot Retention (503)**

The floor of the patient compartment shall be equipped with Stryker Power Load System.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.22 Center cot position (280)**

The Stryker Power Load cot mount shall be in the center position, allowing enough space on both sides of the cot to manoeuvre around the patient.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.23 Cabinet over the Sliding Curbside Seat (680)**

The cabinet over the curbside attendant seat will be ½ glove storage, ½ storage cabinet. The glove section shall hold 3 boxes of gloves. The cabinet section shall have sliding Lexan windows. A LED strip light shall be installed underneath the cabinet and shall turn on in conjunction with the attendant lighting on the street side.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.24 Glove Compartment in Dodge front cab doors**

Glove compartment holders shall be installed recessed into both interior lower door panels of the front cab of the ambulance. Wood will not be used for the construction of these glove compartments.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.25 Lockable Compartment on Top of ALS Cabinet (689)**

There shall be a lockable compartment above the ALS cabinet. It shall include an extruded aluminum door with a self opening shock and secured with a COMPX E300 lock. Cabinet will contain (1) 110VAC outlet and one (1) 12VDC outlet.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.26 LP15 Cardiac Monitor Bracket**

There shall be a bracket installed to mount LP15 cardiac monitor in the patient compartment, on the counter rear of the CPR seat. the bracket shall be a **Technimount Bracket Pro Serie 35™ Mounting System For Physio Control LP-15 Defibrillator**

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**7.27 Fire Extinguisher (532)**

The ambulance shall have a 5 lbs ABC fire extinguisher in the S2 storage compartment. It shall be secured to the wall with a metal bracket.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

## 8. HVAC

---

### 8.01 General

The patient compartment HVAC system shall be controlled by the driver or the patient compartment attendant via the multiplex touch pad or touch screen located in the front console or the rear switch panel.

The patient compartment temperature shall be monitored by a thermostat incorporated in the multiplexing electrical system. Additional to the three (3) preprogrammed speeds, an automatic mode shall be able to decide between heating, cooling and fan speed in function of the set temperature versus the patient compartment temperature.

In order to achieve maximum efficiency and optimization of this system, the fans' speed shall be optimized via Pulse Width Modulation (PWM) to allow the heating and cooling system to run at its most effective speed.

Adequate room for hose connections and hose lines shall be provided when installing HVAC components. The hoses shall be protected and insulated to optimize performance and longevity. They shall also be clamped every 18" and routed without sharp bends and kinks.

COMBO Heat / A/C systems are not acceptable, exact specifications are listed below.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 8.02 Heating

The heating unit shall be installed in the patient compartment in a location behind the street side base wall, under the CPR seat. The heated air shall blow from below the side wall and just above the roll up floor in a cabinet full length vent. This ventilation system shall blow heat below the patient immediately and circulate upward, also creating a radiating effect as the heated air warms the side wall. The interior ducting shall be designed such that debris or liquids cannot enter vent.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 8.03 Air Conditioning – Additional Compressor and Condenser

The air conditioning unit shall be installed in the patient compartment above the oxygen compartment. It shall be accessible by removing the partition ceiling protector.

Five (5) universally adjustable vents with manual closures shall be installed above the street side cabinet in a padded diffuser and shall project at a downward angle toward the patient and crew. A separate hose shall run to each individual vent to maximize and regulate air flow.

A ProAir auxiliary air conditioning condenser, with a capacity of 60,000 BTU, shall be installed on the front plane of the module, centered below the emergency lighting and an auxiliary compressor shall be mounted on the engine for maximum cooling performance.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**8.04 Ventilation**

Two (2) exhaust fans shall be installed. These fans shall allow adequate air exchange within cab and patient compartment while parked or in motion. The exhaust fans shall be controlled by the multiplexing electrical system and shall operate on 3 speeds (Low, Medium and High). To move air in a more efficient manner while keeping noise level to a minimum, a dual exhaust vent system with two (2) exterior exhaust ports shall be installed. The exhaust vents shall exit from the street side of the vehicle.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

## **9. BATTERY SYSTEM, MULTIPLEX AND WIRING**

---

### **9.01 Overview**

A 12VDC electrical system shall be added in junction with the OEM system. They shall be isolated from each other, yet they still exchange data. This is achieved by using a multiplex system in combination with a CAN BUS connectivity between the two (2) systems. It reduces the number of wires in the harness, thus reduces the number of components and connections. Using programmable solid state devices allows for easy diagnostics, troubleshooting and customizing of the vehicle without needing to add relays or modify the wiring system, even at a later stage while the vehicle is in the field. Printed circuit board or, so called "hardwired" electrical systems shall not be acceptable.

The ambulance manufacturer shall have significant experience in installing multiplex and electrical systems. The purchaser is not interested in prototypical or logical systems that are untested or unproven by the ambulance manufacturer. The multiplex system specified here shall be fully developed, tested, in service for at least 10 years and shall be installed on at least 1000 units. Documentation of electrical systems installed and in-service shall be provided at the purchaser's request.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **9.02 Electronic Controller Units (ECU)**

Multiplexing electrical system shall consist of solid state electronic controller units mounted in the electrical control panel. Electronic controller units shall act as the central communications system for the entire electrical system. These electrical controller units shall command all electrical components installed by the ambulance manufacturer in the cab and in the patient compartment. Each electronic controller unit shall be self-diagnostic with easy-to-read LED. Printed schematics of all components and wiring shall be provided with the completed ambulance.

All Electronic controller units shall be sealed in a weatherproof exterior casing. The ECUs main control panel shall be coated in weather resistant from the factory. All electronic controller units shall be installed in electrical control panel compartment for centralized location.

Electronic controller units shall be programmed using already established automotive communication language. Electronic controller units shall be programmed to communicate and receive signals in the SAE J1939 protocol via the CAN BUS connection. This type of system is preferred to allow for future expansion and. No auxiliary printed circuit boards, circuit breakers or relays shall be needed in future expansion or to assist in the functionality of standard electrical components.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **9.03 Serviceability**

The ambulance multiplexing electrical system shall be designed to be maintained and serviced easily. **In the unlikely event of an electrical problem, the ambulance's electrical system shall be able to be connected remotely to the Internet and shall be able to be diagnosed or reprogrammed by a service technician at the ambulance manufacturer's main facility.** This multiplex electrical system shall be proven to be virtually maintenance free. A failure (warranty) rate of less than 1% is required because this agency wishes to purchase an ambulance with the utmost reliability in service. Documentation of warranty claims relating to the electrical system shall be provided to the purchaser upon request.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **9.04 Wiring**

All wiring for the electrical systems shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for which the circuit is protected. Voltage drops in all wiring from the power source to the component shall not exceed 10 percent. All circuits shall be wired in conformance with SAE J1292, *Automobile, Truck, Truck-Tractor, Trailer, and Motor Coach Wiring*. None of the ambulances electrical wiring and components shall terminate or originate in the oxygen storage compartment except for the oxygen flow control solenoid, compartment light, and switch plunger or trigger device.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **9.05 Wiring Harness**

The ambulance wiring harnesses shall be a continuous run to each electrical component. The ambulance wiring shall contain no splices in the main wiring harness. The terminals on connectors of each end shall be machined crimped. Hand crimped electrical connectors are not permitted by the purchaser as they have been proven to be prone to premature failure and/or irregularities.

All ambulance wiring harnesses shall be enclosed in a plastic loom. This loom shall run from the electronic controller units to each specified electrical component. Instances where conduit must travel through a tube structure, a rubber grommet shall be placed in the hole to prevent premature wear of the plastic loom and/or wiring. All wiring harnesses shall be secured to the roof and walls tube structures with insulated clamping fasteners.

The overall covering of jacketed cables shall be moisture resistant and have a minimum continuous temperature rating of 194°F (90°C), except for cable installations where the wiring may be exposed to higher temperatures. All wiring connections and terminations shall use a method that provides a positive standard connection. Wiring connections and terminations shall be installed in accordance with the device manufacturer's instructions. Wire nut, insulation displacement, and insulation piercing connections shall not be used.

All connections to the electrical components shall include a minimum 6 in. service loop of. All wiring connections shall utilize easy plug in style connectors.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**9.06 Wiring Identification**

All wiring shall be identified f every 6” at a minimum. The wiring identification code shall indicate the position on the electronic controller unit for easy maintenance and diagnosis. Wiring identification shall be clearly visible and shall be printed on the insulated wire. No stickers will be allowed.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**9.07 Circuit Protection**

Circuits shall be provided with properly rated low voltage overcurrent protective devices. Such devices shall be readily accessible and protected against heat in excess of the overcurrent device’s design range, mechanical damage, and water spray. Circuit protection shall be accomplished by utilizing fuses, circuit breakers, fusible links, or solid state equivalent devices.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**9.08 Wiring Schematics**

The complete set of wiring schematics shall clearly identify all wiring locations, routing, and component connection. A sample document shall be available to the purchaser on request to examine the quality of the electrical schematic. All instances of wiring not conforming to the standards established in this document shall be documented at the time of the proposal. Failure to comply with this requirement shall be cause for rejection of the proposal.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**9.09 Electric Panel**

The electrical panel shall be protected by the compartment door. It shall include in addition to the ECUs all block fuses and other electronic devices.

For future upgradability, one (1) extra 15 amp 12VDC circuit breaker shall be provided. It shall be wired and shall be ready for a future programmable function with the multiplexing electrical system.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**9.10 Grounding**

Dedicated grounding locations for all appliances, circuits, etc. shall be supplied. Appliance mounting screws/hardware shall not be used for grounding purposes, nor shall the body of the ambulance be used as a ground location. Star washers or unapproved, untested grounding methods shall not be used.

OEM grounds shall not be used as grounding location for the conversion circuits.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**9.11 Switching Requirements**

Switches, relays, terminals, and connectors shall have a direct current (dc) rating of 125 percent of maximum current for which the circuit is protected.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**9.12 Voltage Alarm**

The multiplex system shall incorporate an audible voltage warning when the system voltage of any battery bank drops below 11.5VDC.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**9.13 Load Management**

The multiplexing electrical system shall be programmed to automatically shed electrical load should the electrical output rating of the installed alternator drop below a programmed voltage level. Electrical components shall shed in order of priority. External load management systems or load management systems not programmable shall not be considered as the purchaser requires this electrical system to be flexible and customizable.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**9.14 Batteries**

Three (3) batteries shall be installed in addition to the OEM batteries, for a total of FIVE. The OEM batteries shall not be relocated from their original position(s) while the additional conversion batteries shall be located in a ventilated drawer under the ALS compartment.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**9.15 Battery Isolator**

A programmable multiplex battery isolator shall be installed to separate the chassis batteries from the patient compartment batteries. It shall monitor battery voltage and allow for OEM battery boost by the conversion batteries and full OEM battery charging via the shoreline. The different voltage limits will be programmable. A system comprised of an isolator, boost solenoid and trickle charger shall not be acceptable as this requires more components, cables and connections.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

## **10. 110 VAC & 12 VDC electrical system and inverter**

---

### **10.01 Overview**

The completed ambulance shall be equipped with two (2) forms of internal power sources: 120VAC & 12VDC. These internal power sources shall allow attendants in the ambulance to plug in additional accessories or to charge battery powered devices when needed. The inverter shall be wired as ignition hot so all outlets function whenever the ambulance is running.

All wiring shall be rated to handle the load of the electrical component specified. The 110VAC and 12VDC wiring and associated equipment shall be tested by the ambulance manufacturer prior to delivery. The testing criteria shall include polarity and load demand of all receptacles to verify that all wiring connections have been properly made.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **10.02 12VDC Outlets**

All 12VDC power point outlets specified here shall be properly tested and shall be protected with a Schottky-style diode to isolate the medical equipment batteries from other loads. The diode shall be located in the electrical panel and shall be wired to the conversion batteries. It shall be designed to handle voltage of at least 48VDC. All wiring to the 12VDC outlets shall be clearly labeled and shall be one (1) continuous run from the diode to the outlet.

The ambulance shall be equipped with at least five (5) 12VDC “power point” style outlets. These outlets shall be breaker protected. They shall be energized when the module master switch is activated.

Two (2) shall be installed on the street side of the vehicle in the first action area wall.  
One (1) shall be installed on the street side of the vehicle in the second action area wall.  
Two (2) shall be installed in the ALS cabinet.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **10.03 110VAC Outlets**

110VAC outlets shall be energized from the shoreline and/or from the inverter if equipped. All 110VAC outlets shall be UL certified, Nema 5-15, clearly identified on the unit, rated to 60Hz and have a pilot light when powered. A 110VAC GFCI shall be installed beyond the shoreline and shall disable all 110VAC outlets when tripped. The GFCI shall be located in the rear attendant console for ease of consulting and/or resetting if needed.

The ambulance shall be equipped with 110VAC 60Hz outlets in the locations listed below. They shall be energized when the inverter is activated or the shoreline is plugged in.

- Two (2) shall be installed in the front cab, on the back of the center console.
- One (1) shall be installed on the street side of the vehicle in the first action area wall. (With 2 USB outputs incorporated into the plug)
- One (1) shall be installed on the street side of the vehicle in the second action area wall. (With 2 USB outputs incorporated into the plug)
- Two (2) shall be installed in the ALS cabinet. (With 2 USB outputs incorporated into the plug)
- One (1) shall be installed on the forward section of the curbside wall near the entry door. (With 2 USB outputs incorporated into the plug)

**All patient compartment 110V outlets shall be equipped with USB ports.**

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**10.04 Super Auto-Eject 30 Amp Shoreline (750)**

A 30 amp shoreline shall be installed on the driver's side of the vehicle. The shoreline shall be a Kussmaul Super Auto Eject. When the shoreline is plugged into an exterior source, all 110VAC 60Hz outlets shall be energized. The shoreline shall be recessed into the module and shall include a weather proof low profile cover.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**10.05 1000W Xantrex Inverter / Battery Charger (011)**

A Xantrex power inverter rated for 1000 watts shall be installed in the patient compartment, behind the street side cabinetry, in a ventilated storage area. The inverter shall be powered via a control panel in the rear attendant console. When this inverter is activated, all 110VAC outlets shall be energized. Inverter shall also be powered on with the ignition in the RUN position.

An inverter integrated battery charger shall be provided for maintaining, in conjunction with the multiplex isolator and the shoreline, OEM and conversion batteries in a fully charged condition when the shoreline is plugged.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

## 11. CONSOLES

---

### 11.01 General

Controls and switches that are expected to be operated by the belted attendant while the ambulance is in motion shall be visible and within reach. Switches shall be located in such a position that the driver does not have to unbuckle to activate or read the control switches while the ambulance is in motion.

Switches, indicators, and control devices shall be perceptively and permanently identified with universal automotive graphics or at least 12 point letters for the noun or function, and 8 point letters for the remainder of the legend.

For ease of identification, the controls and switches shall be contrasting colors etched or engraved in plastic or metal, or printed and laminated in see through plastic, and logically grouped according to function. The switches shall have a different feel from the OEM switches. All switches and controls detailed here shall be properly LED illuminated for night driving.

Every switch shall incorporate a confirmation LED connected to the device or circuit that is activated. Confirmation lights wired directly to the switch shall not be tolerated as it doesn't confirm that the output activated, only that the switch is activated.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 11.02 Front Console (600)

The completed ambulance shall have all controls integrated into the front center console. It shall include all controls and switches to operate all necessary emergency or mission critical functions such as:

1. Master switch (lockable)
2. Primary/Secondary emergency lighting
3. Side scene and rear load lights
4. Alarm cutoff for patient indicator and back up alarm
5. Wig Wag headlights
6. Audible emergency devices
7. Optional lighting activation (any additional warning lights, etc.)
8. Rear heat and AC controls with digital interior temperature display
9. Patient compartment lighting
10. Patient compartment exhaust
11. Door open indicator
12. Compartment open indicator
13. Digital Ammeter/Volt Meter Display
14. Auxiliary indicator Light

The detail above describes the minimum features the front display shall activate. All switches shall be wired to a multiplex node located in the front console. Wiring directly to the electrical panel will not be tolerated as it adds unnecessary wires and connections. The

master switch shall be lockable in the "ON" position to ensure that the power shall not be inadvertently cut.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 11.03 Rear Console (842)

The rear control console shall be located above the action area counter and contain switches for all necessary mission critical functions such as:

1. Rear heat and AC controls with digital interior temperature display
2. Patient compartment lights, bank 1
3. Patient compartment lights, bank 2
4. Action area reading light (Independent switch)
5. Cabinet lights
6. Suction pump
7. Patient compartment exhaust
8. Patient status indicator (intercodes, red, yellow, green)

Switches shall be easily cleaned and sanitized.

The detail above describes the minimum features the rear console shall activate. All switches shall be wired to a multiplex node located in the rear console. Wiring directly to the electrical panel will not be tolerated as it adds unnecessary wires.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 11.04 Front Console Indicator Lights

The front console shall integrate the following indicators:

1. **Patient Status Indicator Lights (intercodes):** the Red/Amber/Green patient indicator lights shall be integrated on the front console. An audible alarm shall sound when any state is activated from the patient compartment. The alarm shall be cancelled by the Alarm Cancel / Mute switch.
2. **Door Ajar Indicator:** This shall illuminate when an entry door is opened. An audible alarm shall sound when this indicator light is flashing.
3. **Compartment Ajar Indicator Light:** This shall illuminate with any compartment door is opened. An audible alarm shall sound when this indicator light is flashing.
4. **Battery 1 Indicator Light:** This light shall illuminate when the OEM battery bank is operational.
5. **Battery 2 Indicator Light:** This light shall illuminate when the conversion battery bank is operational.
6. **AUX Indicator:** This light is available for future option integration.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_





## **12. EMERGENCY AND TASK LIGHTING**

---

### **12.01 General**

Each ambulance shall have a system of optical warning devices as specified in this section. The visual warning system on the ambulance shall have two (2) distinct programmed sequences during emergency operation. These shall be defined in this specification as Primary and Secondary. The Primary mode shall signal to drivers and pedestrians that the ambulance is responding to an emergency and is calling for the right-of-way. The Secondary mode shall indicate that the ambulance is stopped and is blocking the right-of-way.

The bidder shall comply where specific vendor and model numbers are described as these lights are purchased from a common vendor and can be purchased by all manufacturers.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **12.02 Flash Rate**

Flash patterns shall be easily programmable through the multiplexing electrical system for all emergency lighting.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **12.03 Front Plane Lights – Six (6) M9 Series LED and one (1) Whelen Pioneer (915)**

Six (6) Whelen M9 series red/blue LED lights with clear lenses and a Whelen clear LED Pioneer shall be installed on the front plane. The lighting configuration shall be three (3) M9 / one (1) centered Pioneer / three (3) M9. These lights shall flash in an alternating pattern. The Whelen Pioneer light shall be on a separate switch on the front console. These lights shall flash in a pattern programmed by the multiplexing electrical system, “Triple Flash”.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **12.04 Grille Lights (579)**

Two (2) Whelen M7 Series LED lights shall be installed on the Ali Arc push bumper, in front of the OEM grille. The grille lights shall not interfere with air flow into the chassis. Colors shall be RED and BLUE. These lights shall flash in a pattern programmed by the multiplexing electrical system.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**12.05 Front Intersection Lights (107)**

Two Whelen M7 Series LED clear/red lights shall be installed on the fenders of the chassis. These lights shall be located in a forward position to provide adequate visibility at an intersection. When the turn signal is activated the clear portion of the intersection lights are to activate as steady burn and function as cornering lights. This clear cornering light will function in emergency and non-emergency modes. These lights shall flash in a pattern programmed by the multiplexing electrical system.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**12.06 Side Plane Warning Lights**

Four (4) Whelen M7 Series LED red/blue LED lights with clear lenses shall be installed on the side plane of the ambulance, two (2) on each side towards the corners.

Two (2) Whelen M7 series LED red/blue LED lights with clear lenses shall be installed on the side plane of the ambulance, one (1) on each side towards the center, above the fenderettes.

These lights shall flash in a pattern programmed by the multiplexing electrical system.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**12.07 Rear Plane Warning Lights**

Four (4) Whelen M9 Series LED red/blue LED lights with clear lenses shall be installed on the rear plane of the ambulance, two (2) on each side of the doors, one (1) towards the top corner and the other one visible through the window when the door is opened. Two (2) Whelen 600 Series LED amber warning lights shall be installed above the rear doors.

An additional Whelen M6 Series red braking light shall be installed on the rear plane, centered above the rear doors.

These lights shall flash in a pattern programmed by the multiplexing electrical system.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**12.08 Scene Lighting**

Four Whelen M9 Series LED scene lights (2 each side) shall be installed on the side planes of the ambulance. The scene lights shall project at a downward angle to allow for adequate lighting of the area surrounding the sides of the ambulance.

They shall be controlled independently for each side by a switch in the front console. The curbside scene lights shall also be activated when the side entry door is opened. This feature can be cancelled by pressing one (1) second on the door switch. Three (3) position

switch is not tolerated as the signal for the open door is cancelled when the switch is pulled in the third position, which could lead to a safety issue. Adding a second switch is also not tolerated as it adds unnecessary wiring and components.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **12.09 Ground Lighting**

LED ground lighting shall be installed underneath the perimeter of the entire module, activating when vehicle is in Park.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **12.10 Load Lights**

Two Whelen M6 Series LED load lights shall be installed on the rear plane of the ambulance, above the rear doors. The load lights shall project at a downward angle to allow for adequate lighting of the area surrounding the rear of the ambulance.

They shall be controlled by a switch in the front console. The lights shall also be activated when the rear entry door is opened. This feature can be cancelled by pressing one (1) second on the door switch. Three (3) position switch is not tolerated as the signal for the open door is cancelled when the switch is pulled in the third position, which could lead to a safety issue. Adding a second switch is also not tolerated as it adds unnecessary wiring and components.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **12.11 Patient Compartment Illumination**

Eight (8) Whelen round LED dome lights shall be installed in the ceiling of the patient compartment. The LED lights shall be controlled via switches on the rear control panel. Four (4) LED lights of the patient compartment curbside shall be illuminated when the patient compartment entry doors are opened.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **12.12 Patient Compartment Timer**

An automatic digital timer shall be integrated into the rear consol. Four (4) LED lights of the patient compartment curbside shall be illuminated when the timer is activated. This timer shall be triggered with five (5) minutes increment and display the time remaining.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### **13. AUDIBLE WARNING DEVICES**

---

#### **13.01 Sirens / Horns**

The ambulances primary audible warning equipment shall be in the form of one (1) Whelen Dual Tone siren, a MECHANICAL Federal Signal Q-Siren® and two (2) Buell air horns. These sirens shall be easy for the driver to access as the switches shall be mounted in the front center console. Air horns controlled by black clamshell foot switch on drivers side and push button momentary switch on passenger side of front switch console. There shall be a 3 way switch to change horn ring to: SIREN / AIR / OEM HORN

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **13.02 Speakers**

Whelen low profile siren speakers shall be mounted in the AliArc bumper. They shall be securely mounted in an engineered housing to fit without modifying the chassis. This housing shall be designed not to restrict airflow or to reduce the effective of the siren speaker. The bumper shall not be cut or drilled as this will accelerate corrosion.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **13.03 Backup Alarm**

A backup alarm shall be provided. It shall be activated when the vehicle is put in reverse. The cancel switch in the front console shall mute the siren when pressed after the alarm is activated. However, an automatic function shall revive the siren after 15 seconds of down time. The backup alarm shall be located under the rear of the ambulance.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

## 14. OXYGEN AND SUCTION

---

### 14.01 General

The completed ambulance shall have a piped medical oxygen system capable of storing and supplying a minimum of 3,000 liters of medical oxygen. The main oxygen supply shall be from a compressed gas cylinder that the purchaser will provide and install at the time the vehicle is placed in service. Low pressure, electrically conductive hose and fittings approved for medical oxygen only shall be used. All oxygen piping shall be concealed, loomed and not exposed. Where oxygen lines may travel through a hole, a grommet shall be used to prevent premature wear of the oxygen line. All oxygen tubing shall be secured yet shall be still accessible for maintenance. Oxygen shall be piped to self-sealing oxygen outlets. The system shall be tested prior to delivery and the results of the test shall be provided with the end user documentation.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 14.02 Oxygen Outlets, Quick Connect (459)

Four (4) Quick Connect surface mounted oxygen outlets shall be installed in the completed ambulance. Two (2) shall be installed on the medical action wall and one (1) shall be located on the curbside wall towards the forward end of the sliding seat, one (1) recessed into the ceiling at the head of the cot. These outlets shall be tested prior to delivery of the ambulance.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 14.03 Oxygen Tank Storage

The oxygen tank shall be stored in outside compartment S1. The cylinder shall be able to be accessed and removed from the outside, and shall be able to be controlled at the regulator from the inside of the patient compartment. A chrome vent with an interior rubber debris barrier shall be installed on the oxygen compartment door to properly ventilate this compartment of any leaking oxygen.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

### 14.04 Oxygen Tank Bracket (557)

An adjustable oxygen cylinder bracket shall be installed in the oxygen compartment to accommodate different sizes of oxygen cylinders. This bracket shall be securely fastened to reinforcement mounting plates. Manufacturer should provide proof of a 5,000lb pull test that has been performed on the particular ambulance model to ensure the proper mounting and secure fastening of the oxygen cylinder.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**14.05 Suction**

One (1) RICO RS4 electrically controlled suction system shall be installed in the patient compartment. The outlet shall be on the action area wall with the control in the rear switch panel. The suction pump shall be located behind the street side cabinetry and be easily accessible for maintenance. It shall be securely mounted with rubber pads to eliminate any unnecessary noise. A vacuum indicator gauge ranging from 0 to 760 mm Hg shall be provided.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**14.06 Oxygen Regulator with pressure sensor (346)**

The ambulance shall have a 50 PSI oxygen regulator with a digital pressure sensor. The remaining tank pressure shall be displayed in the front cab touch pad and rear touch screen. An electronic control valve with a manual bypass shall also be installed.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**14.07 Quick Connect Wall Flow Meter (455)**

The ambulance shall be equipped with a Quick Connect 0,5-15 LPM wall flow meter.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**14.08 Quick Connect Ceiling Flow Meter (472)**

The ambulance shall be equipped with a Quick Connect 0.5-25 LPM ceiling flow meter.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**14.09 “D” Portable Oxygen Brackets (560)**

The ambulance shall be equipped with two (2) size “D” type 521 oxygen cylinder brackets. The exact location of these brackets shall be specified by Florissant Valley FPD at time of build.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

## 15. VARIOUS

---

### 15.01 Paint

All exposed metal surfaces that are not plated or stainless steel shall be cleaned and prepared and shall be painted or coated. The paint or coating, including any primer, shall be applied in accordance with the manufacturer's recommendation. The paint used shall be a high built polyurethane surface over epoxy primer application utilizing two (2) acid stabilizing treatments. This paint is preferred by the purchaser as it has a durable lifespan, is resilient to harsh climates and remains pliable even in its hardened state to prevent cracking and chipping from normal ambulance body torsion.

The paint process will consist of 2 coats of primer and one topcoat. The primer will be an epoxy/polyamide strontium chromate primer boasting excellent impact and chemical resistance designed specifically for the aerospace industry's high performance requirements. It will be approved for the following specifications:

- de Havilland DHMS C4.01 Type 2
- Bombardier Canadair BAMS 565-01, BAMS 565-08 Ty2 C1 A Gr A
- National Defense Mil-P-23377F, Type 1, Class 1

The base primer coat will need pass the following tests, with testing documentation:

<i>Impact Resistance</i>	No flaking or cracking when subjected to 40 inch pounds direct impact or a 40 inch pounds reverse impact.
<i>Hardness</i>	Pencil Hardness 2H minimum.
<i>Fuel Resistance</i>	Withstands immersion of Jet A1 Fuel for 14 days at ambient temperatures without showing any defects. After a 24 hour recovery period, the primer regains its pretest hardness.
<i>Lubricating Oil Resistance</i>	Withstands immersion in lubricating oil at 25° C for 14 days without showing any softening, blistering, or loss of adhesion.
<i>Hydraulic Fluid Resistance</i>	Withstands immersion in Skydrol hydraulic fluid without showing any defects for 30 days.
<i>Salt Spray Resistance</i>	With a scribed film at an angle of 6°, it exhibits no blistering, lifting of the primer, or substrate corrosion after exposure to 5% salt spray following ASTM B117 on treated aluminum substrate 3000 hours.
<i>Water Resistance</i>	No blistering or loss of adhesion after 14 hours immersion in distilled water at ambient temperature. Will regains its pretest hardness after a recovery period of 24 hours.

The manufacturer's paint facility shall be free of dust and contaminants that could have an adverse effect on the paint finish. The manufacturer's paint facility shall also be certified to apply the paint specified.

The aluminum structure shall be prepared by thoroughly washing the aluminum body with wax and grease remover.

Following the acid wash, the surfaces shall be sanded smooth. All sand and dust shall be removed with air when sanding is complete.

A two (2) stage epoxy primer layering process shall be applied to the module and all painted components. This primer stage is critical to the adhesion of the paint and shall be necessary to the paint process. A 1.2 mil primer application shall be used. After adequate drying time, a second layer of the primer shall be applied. When completed, the finished primer layer shall be two (2) layers thick and shall be sanded smooth to a surface grade of 9 or 10. This application allows for superior adhesion to the module body.

The finish coat shall be applied and be allowed to dry for the paint manufacturers recommended amount of time. A second finish coat shall be applied. All imperfections shall be sanded; the finish shall be free of any runs, fisheyes and other paint blemishes.

The ambulance module and chassis shall be painted Candy Apple Red Sikkens 97902RV35.

Bidders may propose alternative paint process methods. A detailed description of the process and certifications by the paint manufacturer shall be provided in this bid proposal.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **15.02 Signs and Instructions**

All required signs, instruction plates, and labels related to the electrical system shall be permanently attached and easy to read. All signage and labeling shall be resistant to fluids, extreme temperatures (-30°F (-25°C) and 176°F (80°C)), and ultra violet radiation. These labels shall meet the UL 969, *Standard for Marking and Labeling Systems*. All exterior labels relating to safety or critical operational instructions shall be reflective or illuminated per the guidelines set forth in the forthcoming NFPA 1917 Standard for Automotive Ambulance Guidelines.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

#### **15.03 Lettering**

All lettering and graphics shall be customized to meet the exact specifications provided by Florissant Valley matching the current fleet. All vinyl material shall be reflective.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**16.00 ADDITIONAL ITEMS** – The following items are considered additions or clarifications to the above specification to ensure they are all included in the bidders proposal.

1. Sweep out exterior compartments, diamond plate construction, with “dry carpet” (DriDeck / Turtle Tile)
2. Undercoating – entire module to be undercoated.
3. Mudflaps front and rear, stainless corner protectors on all four modular sides.
4. Aluminum cabinet structure – NO PLYWOOD CABINETRY.
5. Restocking feature on all rear cabinets. Lexan sliders with inventory control holes.
6. LED strip cabinet lighting in all interior cabinets.
7. Shelf with sliding adjustable dividers in all interior cabinets.
8. VALOR seating and seatbacks with one click 4 point restraints.
9. Electrical distribution panel located inside front center console to power radios and laptops. Customer supplied Knox key box shall also be wired into front center panel.
10. Electrical distribution panel located above walkthrough for radio communications equipment power.
11. Ducted AC
12. Streetside 1 Compartment
  - a. Shelf over Oxygen tank
  - b. Supply and install (1) SCBA support on the rear wall of the compartment. Model: Ziamatic Corp., SKU #UHLP-6-30-2SFPHS.
  - c. (1) NY Hook NYH-6 and brackets (2) PAC 1004 (on left wall)
  - d. Pig Axe (TP-36-NF-B) and bracket (2) PAC 1004 (on door)
  - e. Halligan Pro Bar (PB-30) and bracket PAC K5032 (on door)
13. Streetside 2 Compartment
  - a. 36” Bolt cutters (NCBC-36 ) and bracket PAC 1029 (left wall)
  - b. (2) Knucklehead lights 2 x #90670
  - c. FireBox ESpot 1 x #45865
  - d. Prewire for customer installed TIC
14. Streetside 3 Compartment
  - a. Sledge hammer and bracket PAC K5010 (on right wall)
  - b. (1) SCBA support on the S3 rear wall. Ziamatic Corp., SKU #UHLP-6-30-2SFPHS
  - c. 2.5 Gallon water extinguisher and bracket on rear wall.
  - d. Spanner wrench (mounted on door, lower)
15. Additional trash can and bracket in walkthrough.
16. Two (2) hooks in walkthrough to hang portable radio straps.
17. Firecom Headsets: 3-User Wireless Configuration.
  - a. 2 – UHW505
  - b. 1 – UHW503
  - c. 1 – WB505R
  - d. 1 – 5100D
  - e. 2 – Pair Blue Ruggedizers
  - f. 1 – Mobile Radio Cable
  - g. 3 – NFPA Hanger Hooks



**17.00 Factory Trips**

**INSPECTION:** The successful bidder, upon completion of the ambulance manufacturing, shall arrange for six members of this department to go to the manufacturing facility for a final inspection of the completed ambulance. If the factory is more than a four hour drive from Florissant, MO the six members shall travel on a commercial airline to the airport closest to the manufacturer.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**DELIVERY:** After the vehicles are inspected and accepted at the manufacturing facility the bidder will have the ambulance delivered to Florissant, MO. If it is more than 200 miles from the point of manufacture to Florissant, MO the ambulances shall be delivered via over the road flatbed transportation. Upon arrival the ambulances will be re-inspected and accepted by FVFPD.

**Does your bid comply with the specification as written?** Y\_\_\_ N\_\_\_

**Does your proposal include an exception to this requirement?** Y\_\_\_ N\_\_\_

**DELIVERY TIME:** Approximate delivery time shall be stated below:

---

---

---

### **18.01 Exceptions**

Each section requiring a response shall be marked by the bidder to acknowledge acceptance and compliance to the specification. Should the bidder choose not to comply with the specified requirements, the bidder shall disclose to the purchaser what they are offering in comparison. Exceptions to the proposal shall be documented in a centralized location in this bid proposal. The exceptions section of the proposal shall include the section heading, the page number and a detailed description of what shall be proposed by the bidder. Bidders taking 'total exception' shall not be allowed and will be considered unresponsive as this disregards the purchaser's request of a comparable product. Exceptions with descriptions claiming they meet or exceed the specification with no backing documentation will be considered non responsive and subject to disqualification.

**Anti-Collusion Statement:**

By signing this bid, the bidder agrees that the bid is made without any agreement with any other person or firm making a bid to the Florissant Valley Fire Protection District.

This bid form shall be completely filled out and returned with the bid. Bidder may include all bids on this one document. There is no need for multiple pages.

Name of Bidder: \_\_\_\_\_

Company: \_\_\_\_\_

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

City/State/Zip Code: \_\_\_\_\_

Terms: \_\_\_\_\_

**AMBULANCES**

**TOTAL PRICE:** \_\_\_\_\_

Does your bid have any exceptions, clarifications, or variances from our specifications?

\_\_\_\_\_ **Yes**      \_\_\_\_\_ **No**

\*\*If yes, then please include a separate summary sheet

**SIGNATURE OF BIDDER:** \_\_\_\_\_

**TITLE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_