

# BULLDOG FIRE APPARATUS

## SALES CONTRACT

This agreement made by and between **BULLDOG FIRE APPARATUS, INC** (the "Company")  
and

Town of Canton  
\_\_\_\_\_  
(Legal Name of Buyer)

4 Market Street	Collinsville	CT	06022
(Address)	(City)	(State / Province)	(Zip / Postal Code)

1. **ACCEPTANCE:** The Company agrees to sell and the Buyer agrees to purchase the ambulance and equipment described in the Braun specifications and proposal dated December 6, 2016 and made part of this Contract, and in accordance with the terms and conditions included in this Contract (collectively referred to as the "Apparatus").

2. **DELIVERY:** The Apparatus shall be ready for delivery within 300 calendar days, after the receipt of chassis at Braun Industries and signed acceptance of this Contract at the Braun Industries Corporate Headquarters, Van Wert, OH. Any modifications made to Apparatus after contract acceptance or delays by Buyer as noted above may extend the above quoted delivery timeframe as determined by Company. The Apparatus shall be covered under the insurance and warranty of Company until the Apparatus is delivered to and/or accepted by the Buyer. The Company cannot be held liable for penalties and / or delays due to strikes, failures to obtain materials, fires, accidents, force majeure, or any other causes beyond the Company's control.

In order to establish a stable design, procurement, and build schedule, a Buyer change order cutoff will be enforced upon receiving the confirmed order and confirmed upon by the Buyer. Changes in major components, configuration, or other items that may change the major components or configuration, (body compartments and cabinetry, chassis) will not be allowed after the Contract execution date.

If inability to obtain exclusive or brand name materials causes completion or delivery problems, the Company shall advise the Buyer of said problem. The Company resolves to examine alternative sources of said material. Material substitutions shall be mutually agreed upon by the Buyer and the Company. No substitutions shall be made without the execution of a written change order by the Buyer.

3. **CHANGE ORDERS:** Changes to the Contract may be requested by the Buyer after the execution of the contract according to Section 2 of this document. Changes shall be reviewed for cost and schedule impact by the Company. Changes shall be sequentially numbered. Change Orders shall be prepared by the Company and executed by the Buyer. The price of the ambulance shall be adjusted

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to take into account any Change Orders. **Any and all Change Orders may extend the completion and delivery of the ambulance.**

4. **SPECIFICATIONS:** The Company agrees that all material and workmanship in and about this ambulance shall comply with the hereto attached Braun specifications and proposal dated December 6, 2016 and clarifications.

5. **WARRANTY:** Shall be as proposed in the attached Braun specifications.

6. **PRICE:** The Buyer shall pay, as a purchase price for one (1) ambulances, the sum of

Two Hundred Fifty Two Thousand Nine Hundred Seventy Two and No Cents. (\$252,972.00)

**Additional Equipment**

None

**TOTAL FOR THIS CONTRACT IS \$252,972.00**

All prices are less any applicable local, state, or federal taxes which may be applied to the ambulance proposed. NOTE: Payment shall be made only to:

**Bulldog Fire Apparatus, Inc.**  
17 Winter Street  
Woodville, MA 01784

7. **TERMS OF PAYMENT:**

a) Payment due at time of delivery and/or acceptance as outlined below.

The purchase price payment reflects US dollars and does not include any authorized change orders which, if applicable, shall be paid at time of final inspection and signed acceptance.

Acceptance of Apparatus and final payment shall occur immediately after completion of a final inspection by a representative of Buyer at a factory location of Company, completion of any discrepancy list, and shipment of Apparatus from Company's factory location or acceptance of the Apparatus and Equipment by the Buyer at Company's location. Upon completion of the final inspection and related discrepancy list, the Apparatus shall be conclusively determined to be in full compliance with the terms of this Contract, including without limitation the specifications set forth by the Buyer in its specifications for bid and the Company's specifications and proposal dated December 6, 2016. Company will not surrender to Buyer the title to or the statement of origin for any Apparatus or provide Buyer with any other documentation regarding ownership of any Apparatus until Company has received full payment of the Purchase Price and taxes.

b) No payment of any amount shall be made payable to a sales representative without written approval from the company.

c) It is agreed that the Apparatus covered by this contract shall remain the property of the Company and not be placed in service until the entire Contract price has been paid.

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d) A copy of the Buyer's tax-exempt certificate, if applicable, shall be submitted with this signed contract.

8. **BULLDOG FIRE APPARATUS, INC** requires, and the Buyer agrees, that the Apparatus shall be inspected and / or delivered within seven (7) days of notice that the Apparatus had been completed. Such notice shall be given by the Company to the Buyer via written and telephone notice. Such notice is not deemed served until notification of receipt by the Buyer.

9. **CANCELLATION:** This contract is subject to cancellation by Buyer only upon payment to Company of reasonable cancellation charges, which shall take into account expenses already incurred and commitments made by Company.

This Contract, to be binding, must be signed by an officer of **Bulldog Fire Apparatus, Inc** or a person authorized, in writing, by **Bulldog Fire Apparatus, Inc.** to do so and by the proper authorized officer of the Buyer.

10. **TAG-ON / ADDITIONAL ORDERS:** The Company shall allow the terms of this Contract to be extended to both the BUYER and similar agencies for the purchase of a similar unit(s) under similar terms for a period of one (1) year from the date of the execution of this Contract. Should the Buyer or any other similar agency exercise this option, the Company shall be permitted to adjust the contract pricing to account for equitable price adjustments associated with the change in the cost of the materials used to produce the unit. Such adjustments will be based upon the Producer Price Index (PPI) for fire trucks, ambulances and / or heavy transportation equipment or by itemizing price changes expected by the company from the component vendors. If there are any changes between the unit(s) purchased via this Contract and any subsequent orders, those changes must be documented via properly signed and executed change orders, including any necessary price adjustments. If the purchasing agency is not the Buyer, a separate contract will be required to complete the additional purchases.

This contract, including its appendices, embodies the entire understanding between the parties relating to the subject matter contained herein and merges all prior discussions and agreements between them. No agent or representative of the Company has authority to make any representations, statements, warranties, or agreements not herein expressed and all modifications of amendments of this agreement, including any appendices, must be in writing signed by an authorized representative of each of the parties hereto.

No surety of any performance bond given by the Company to the Buyer in connection with this Agreement shall be liable for any obligation of the Company arising under the Standard Warranty.

11. **MISCELLANEOUS:** The Company represents that it and its subcontractors shall not discriminate against any employee or applicant for employment to be employed in the performance of this Contract, with respect to the employee's or applicant's hiring, tenure, terms, conditions or privileges of employment or any matter directly or indirectly relating to employment, because of the employee's or applicant's race, religion, color, sex, disability, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the Contract.

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In the event that any court of competent jurisdiction shall determine that any provision, or any portion thereof, contained in this Contract shall be unenforceable in any respect, then the provision shall be deemed limited to the extent that the court deems it enforceable, and as so limited shall remain in full force and effect. In the event that the court shall deem any provision, or portion thereof, wholly unenforceable, the remaining provisions of this Contract shall nevertheless remain in full force and effect.

This Contract shall be governed by and construed in accordance with the laws of the State of Massachusetts without giving effect to principles of conflict of laws. Buyer and Company irrevocably and unconditionally agrees that any suit, action, or other legal proceeding arising out of or relating to this Contract shall be brought in a court of record of the State of Massachusetts in Middlesex County. The prevailing party to a suit brought under this Contract shall be entitled to reasonable attorneys' fees and costs in pursuing such action.

IN WITNESS WHEREOF, the Buyer and the Company have caused this contract to be executed by their duly authorized representatives this \_\_\_\_\_

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**COMPANY**

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**BUYER**

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**Bulldog Fire Apparatus, Inc.**  
17 Winter Street  
Woodville, MA 01784  
508-435-4200

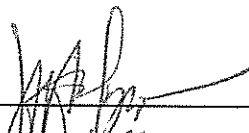
**Town of Canton**  
4 Market St  
Collinsville, CT 06022

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

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

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

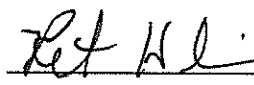
  
\_\_\_\_\_  
Jeffrey R. Mazzetta  
President  
12/23/16

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

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

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

  
\_\_\_\_\_  
Robert H. Skinner  
Chief Administrative Officer  
12/12/2016

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# Canton Volunteer Fire & EMS

## **GENERAL CONDITIONS**

**PURCHASER:** The "Purchaser" who is hereinafter described as an individual, or a group of individuals who represent the interest of the Town of Canton Connecticut AND has been charged with the responsibility of purchasing one or more emergency medical ambulance(s).

**BIDDER:** The "Bidder" is hereinafter defined as the ambulance manufacturer and/or it's authorized Representative/Dealer.

## **BIDDER'S INSTRUCTIONS**

Bidders shall thoroughly examine all drawings, specifications, schedules, instructions and any other documents supplied as part of this invitation to bid and shall make all investigations necessary to thoroughly inform themselves regarding the content of the written specifications, drawings, and instructions supplied herein. No plea of ignorance by the bidder pertaining to the content of the specifications, drawings, schedule, or instructions will be considered by the purchaser on the deadline, if bid submission has occurred. Failure or omission on the part of the bidder to make the necessary examinations and investigations into the content of the specifications AND make all clarifications or explanations of exceptions and conditions that exist or that may exist hereafter shall NOT be accepted as a basis for making variations to the requirements of the purchaser or compensation to the bidder.

**CLARIFICATIONS:** Clarifications shall be written correspondence between the bidder and the purchaser. A clarification shall include the page number, paragraph number, the text with unclear content (as written in the specification) and the definition of the clarification provided.

The Purchaser's clarifications shall be documented in writing and distributed to all qualified bidders at least two business days prior to the deadline for bid submission.

**EXPLANATION OF EXCEPTIONS:** Bidders may take exceptions to any part of the bid contained herein with a written itemized schedule. The schedule shall include the page number, paragraph number(s), the text that the bidder feels he cannot comply with and an explanation why the bidder feels that the requirement is not in the best interest of the purchaser AND/OR an alternate bidder solution. Alternate bidder solutions may be considered by the purchaser, if the bidder can show the purchaser that the alternate solution is, in quality and quantity, equal to OR better than the specified item. Explanations of exceptions taken must be documented and submitted with the bid proposal on or before the bid submission deadline.

## **PURCHASER'S INTENT**

The intent of the specifications supplied herein is to purchase an ambulance with the highest level of quality and engineering excellence. The intent of this vehicle is centered on the patient's need for pre-hospital care, in conjunction with a safe working environment for the Emergency Medical Personnel.

## **NO ALTERNATE BIDS TAKING TOTAL EXCEPTION**

**BID PACKAGES SHALL NOT TAKE TOTAL EXCEPTIONS:** Bidders are required under this bid invitation to give, for the consideration of the purchaser, a proposal that will comply with the written specifications, drawings, and schedules supplied herein. The specifications supplied represent a compilation of input from all disciplines of users, patients, maintenance and management personnel who are directly affected by the vehicle performance. All the personnel who have direct working contact with the vehicle specified herein base careful consideration pertaining to safety, configuration, construction, and workmanship on working experiences. The

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intent of this ambulance was created as a result of resolving issues and improvement suggestions that have originated from the personnel most QUALIFIED to make such input.

The purchaser makes no claim that potential issues or improvements are included in the specifications supplied herein. The purchaser will consider any valid concern by any bidder and will consider only minor specification exceptions or alternates of equal or better performance, provided that the exceptions are steered toward meeting the intent AND the exceptions are submitted with the final bid proposal on or before the bid deadline.

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

## **INTER-AGENCY AGREEMENTS (PIGGY-BACK)**

It is the intent of this bid document to make available to other government entities, by mutual agreement with the successful Bidder, the right to purchase the same or like equipment and or products, at the prices quoted for the period of the contract. Each Bidder shall indicate in the bid proposal, if the Bidder will honor other political subdivision's orders, in accordance with contract terms and conditions. This procedure is sometimes identified as a "Piggy-Back" Bid.

## **VENDOR QUALIFICATIONS**

Regardless of chassis purchased, all bidders shall be members in good standing of the Ford Motor Company Qualified Vehicle Modifier Program (Q.V.M.). Certification verification shall be provided with the bid response. If for any reason the Q.V.M. Certification was withdrawn or suspended by Ford Motor Company within the past five years, the bidder shall supply a full written explanation of the Q.V.M. withdrawal or suspension and any corrective actions taken to regain Q.V.M. Certification.

## **PRODUCT LIABILITY INSURANCE**

A Certificate of current liability insurance, with a Ten Million Dollar minimum shall be supplied with the bid submission. The certificate of insurance shall bear the insurance carrier's name, address, and phone number. The Certificate shall also bear the name and address of the insured. This document shall contain the coverage schedule, explaining the type of insurance, the policy number, the effective date of coverage, the policy expiration date, and the individual limits of liability.

## **DRUG FREE WORKPLACE**

The bidder shall conduct business as a Drug Free Workplace. The bidder/manufacturer shall provide notice to their employees as required under the Drug Free Workplace Act of 1988. A copy of the bidder's Drug Free Workplace policy shall be furnished to the purchaser upon request.

## **CHASSIS POOL**

The bidder shall be a member of the Ford Motor Company's and/or the General Motor Company's Chassis Bailment Pool, regardless of the chassis specified within this specification. The bidder shall provide a current Ford Motor Company and/or General Motor Company's Pool account number to the purchaser upon request.

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## **PRODUCT TESTING**

**AMBULANCE MANUFACTURER'S DIVISION:** The Bidder shall be a member in good standing with the National Truck Equipment Association (N.T.E.A.) and the Ambulance Manufacturer's Division (A.M.D.) of N.T.E.A. The bidder shall supply a letter with the bid response to verify current membership in both the N.T.E.A. and the A.M.D.

## **AMD STANDARD 001: STATIC LOAD TEST**

**A.M.D. 001 - MANUFACTURERS' BODY STRUCTURE TESTING:** The ambulance described herein shall be tested to the National Truck Equipment Association's Ambulance Manufacturer's Division, AMD Standard 001 - Static Load Test, except the test weight shall be at least 32,000 pounds. The test results shall be certified by an independent engineering firm not directly associated with the Ambulance Manufacturer. These certified test results shall be supplied to the purchaser upon request.

## **ROLLOVER CRASH TEST**

Bidder shall perform modular rollover crash test, with video documentation to be provided to the Purchaser upon request. Crash test shall be performed within a controlled and repeatable environment, validated by a third party testing facility. Crash test control elements shall include (at minimum) - 25mph speed, 20 degree angled ramp, and 1.25 rotation. Crash test result elements shall include (at minimum) – minimal deflection to module body including side walls, roof and floor and all people doors (side and rear) must open.

## **KKK-A-1822F TESTING CERTIFICATION**

The bidder shall provide documentation within this bid proposal, which verifies that all KKK-A-1822F testing is current and certified by an independent engineering firm.

## **QUALITY ASSURANCE - SPECIFICATION COMPLIANCE**

The manufacturer shall inspect and test all systems and electrical loads per Federal specification KKK-A-1822F Section 4. Testing results shall be documented and displayed in the oxygen compartment and supplied with the vehicle delivery handbook.

**NOTE:** The purchaser will have zero tolerance towards bidder/vendors who state compliance to specification, but delivers an incomplete product and/or substandard materials and workmanship.

## **NON-COLLUSIVE BID CERTIFICATION**

By submission of this bid response, the Bidder and/or Bidder's authorized representative(s), certify under penalty of perjury, to the best of their knowledge and belief the following:

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

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

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

## **DEBARMENT STATUS**

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

## **DELIVERY STATEMENT**

The bidder shall state the number of calendar days required for delivery of the completed ambulance, after receipt of an order and receipt of chassis by the manufacturer.

Delivery shall be within 300 calendar days after receipt of order and receipt of chassis. (State number of calendar days)

## **REQUIRED DELIVERY ITEMS**

REQUIRED DELIVERY ITEMS: Upon a successful bid award, the vendor shall provide the following to the purchaser, upon ambulance delivery:

1. Manufacturer's Quality Assurance Vehicle Testing and acceptance documents.
2. One (1) copy of conversion parts, service, and operational manuals.
3. OEM Chassis Owner's Guide materials as provided by the chassis manufacturer.
4. Two (2) copies of "as built" customized electrical schematics for the ambulance conversion.

## **PURCHASER'S RIGHTS**

ACCEPTANCE OR REJECTION: The Purchaser reserves the right to accept or reject any and all bids as deemed to be in the best interest of the purchaser and is not bound to accept the lowest bid.

BID PROPOSAL TIME LIMITS: All bids submitted to the purchaser shall remain in effect for a minimum period of (60) sixty calendar days.

BID WITHDRAWAL: Only written bid withdrawal requests will be accepted by the purchaser. Bid withdrawals received less than (3) three working days prior to the advertised bid opening will not be accepted.

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## **FORCE MAJEURE**

The bidder shall not be charged with liquidated damages or any excess cost when delay in delivery of goods is due to:

Any preference or priority of an allocation order duly issued by a government agency.

Unforeseeable cause beyond the control and without the fault, of the ambulance manufacturer, or acts of God or of the public enemy, acts of the purchaser, acts of another contractor in the performance of a contract with the purchaser, fire, flood, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; and;

Any delays of subcontractors occasioned by any of the causes specified in the two immediately preceding clauses.

## **SERVICE CENTER**

It is the intent of the Town of Canton to assure that parts and service are readily available for the emergency vehicle specified. Service capabilities will be a major criteria for award of this bid. To insure proper service, no bid will be accepted unless the bidder owns or offers facilities within 55 miles where complete parts and service are available. The facility must be staffed by full time personnel who are factory trained and EVT certified in the operation and repair of the emergency vehicle, with the full authorization of the manufacturer. In addition in order to ensure prompt service, the facility must be solely dedicated to the service/repair of emergency vehicles. The facility shall maintain a complete inventory, including body components, electrical items, vehicle hardware, etc. The bidder shall also provide services including body fabrication, collision repair, and a paint shop complete with down draft booth with makeup air and bake options to insure the highest quality paint finish available. Bids from manufacturers or dealers who use third party service people or facilities, or who do not offer a service center will be immediately rejected. Furthermore, due to a concern over having vehicles "out-of-service" for extended periods of time as a result of having to be sent back to the original manufacturer's location for repairs, any bidder who cannot guarantee that all future repairs will be handled at a local level will not be acceptable.

The local dealer shall own and operate a full service full time parts and service center. Financial stability of the bidder is of the utmost importance, therefore any bidder subletting or renting space to conduct business will not be considered. The service facility must offer full parts, paint, body collision repair, electrical and conversion repair under one roof without use of third party facilities. Any bidder who cannot demonstrate that they meet this requirement will be deemed unresponsive and no further analysis of that bid will take place. The Town of Canton reserves the right to visit and inspect any dealer's service center during normal business hours to determine compliance with this requirement.

The bidder shall provide the primary telephone number to be used when service, parts, or general information is required. The end user reserves the right to call the published telephone number at various times during the administrative workday to verify its' authenticity. Use of answering machines, cellular telephones, or pagers in the absence of full time, verifiable employees is unacceptable. For purposes of definition, the established times for administrative workday are 08:00 to 16:30 weekdays (excluding holidays).

## **KKK-A-1822F CHANGE NOTICE 8 COMPLIANT**

Bidder shall be KKK-A-1822F Change Notice 8 compliant to meet SAE J3026 - Ambulance Patient Compartment Seating Integrity and Occupant Restraint Standards, and SAE J3027 - Ambulance Litter Integrity, Retention, and Patient Restraint Standards.

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## **KKK-A-1822F CHANGE NOTICE 9 COMPLIANT**

Bidder shall be KKK-A-1822F Change Notice 9 compliant to meet SAE J3043 - Ambulance Equipment Mounts; Interior Stowage Accommodations; Equipment Mounting Devices: Installed Oxygen cylinder, cardiac monitor, and fire extinguisher mounting devices shall meet the performance requirements of SAE J304

## **YES PERFORMANCE BOND REQUIRED**

This unit required a performance bond.

## **TYPE I - AMBULANCE - LIBERTY I - 72" INTERIOR HEADROOM**

SPECIFICATION INTENT: Type I, 156-inch module, constructed with not less than 72.0-inches interior module height, an overall length of 288.5-inches, an overall width of 98-inches, and an overall height not to exceed 109.75-inches.

## **CHASSIS - FORD F-450 CHASSIS, 169" WB 4 x 4**

### **F4H 2017 FORD F450 CHASSIS CAB, 169" WB 4X4 DRW (84 C.A.)**

#### **MECHANICAL**

- Axle - Mono beam front axle w/coil spring suspension
- Aft – Axle Frame Extension (\*63C\*)
- Rear-axle 4.10 Limited-slip w/DRW (\*X4N\*)
- Battery - Batteries Dual 750 CCA
- Brakes – Four-wheel Disc Brakes; Anti-lock Brake System (ABS)
- Emission 50-State Emissions System
- Engine — 6.7L 4V OHV POWER STROKE V8 TURBO DIESEL B20 (\*99T\*)
- Engine block heater (\*41H\*)
- Tires - 225/70R19.5G BSW A/S (\*TFB\*)
- Transmission – TorqShift® Six-Speed automatic w/SelectShift® automatic (6R140) (\*44W\*)

#### **FUNCTIONAL**

- Alternators: Dual extra heavy duty (\*67B\*)
- Ambulance Prep Package (\*47L\*)
- Hood release
- Horn - dual electric
- Oil minder system
- Operator Commanded Regeneration (\*98R\*)
- Performance Equipment Package XLT Trim (\*653A\*)
- Shock absorbers - heavy -duty gas
- Sirius XM® Radio (Note: Includes a 6-month prepaid subscription. Service is not available in Alaska or Hawaii).
- Spare Tire, Wheel and Jack (Excludes carrier; includes Hydraulic Jack (\*512\* \*61J\*))
- Springs, rear auxiliary
- Stabilizer bars – front & rear
- Trailer Brake Controller

#### **EXTERIOR**

- Back Panel, rear - solid, no sliding rear window
- Bumper – front, chrome
- CLEAN IDLE DECAL, CAL SER VEH EXP (\*63B\* \*936\*)

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- Color - Oxford White (\*Z1\*)
- Fender vents – front
- Front License Plate Bracket
- Fuel Tank — 40 gallon aft axle
- Glass – privacy
- Grille – bright chrome
- Manual locking hubs
- Scuff plates – front, color-coordinated
- Splash Guards/Mud Flaps – Front
- "Three Blink" Lane change signal
- Tow hooks – front (2)
- Trailer wiring – 7 wire harness w/relays, blunt cut & labeled
- Wheels – 19.5" Argent Painted Steel
- Windshield Wipers – intermittent

## INTERIOR/COMFORT/CONVENIENCE

- 4.2" LCD Productivity Screen in IP Cluster w/Compass display
- 12V Power point, auxiliary
- Air conditioning – single-zone, manual
- Air conditioning vents – black w/chrome ring and knob
- AM/FM Stereo Single-CD/MP3 Player, Clock, speakers - four (4) (\*54K\*)
- Auxiliary audio input jack
- Cabin Air Particulate Filter
- Carpet Delet (\*166\*)
- Coat hooks, LH/RH color-coordinated
- Cruise Control
- Dash top tray
- Dome lamp – LH/RH door activated & I/P switch operated w/delay
- Door locks w/ backlit switches
- Door-trim – soft armrest, grab handle, power window/lock switches and reflector; front map pockets on Regular Cab and SuperCab; front and rear map pockets on Crew Cab
- Gauges & Meters - Fuel , Transmission temperature, Engine coolant temperature, Oil pressure (gas engine), and Turbo (diesel engine) gauges, Speedometer, Odometer, and Tachometer
- Handles, grab – driver & front-passenger Handles, roof ride – front-passenger
- Headrests - driver and passenger 4 way adjustable
- Map lights – dual (front and rear w/Crew Cab)
- Mirror – rearview 11.5" day/night
- Outside Temperature Display
- Power Equipment Group – 1ST row (front-seat) windows w/one-touch up/down, power/door-locks w/backlit switches & accessory delay
- Seat –Front, high-series cloth 40/20/40 split bench medium earth grey (\*3S\*) - 20% center under-seat storage, – w/center armrest, cup holder and storage (manual lumbar – driver's side) — Four-way adjustable driver/passenger headrests
- Steering – power
- Steering wheel – Black urethane with tilt and telescoping steering wheel/column; includes three (3) button message control

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- Sun visors – color-coordinated cloth, driver w/pocket, both driver and passenger w/covered mirrors
- Upfitter Interface Module (\*18A\*)
- Upfitter switches – 6 located in Overhead Console

## SAFETY/SECURITY

- AdvanceTrac® with RSC® (Roll Stability Control™)
- AutoLamp – Auto On/Off Headlamps
- Belt-Minder® (front safety belt reminder)
- Driver and passenger frontal and side airbag/curtain; passenger side deactivation switch
- Headlamps – Quad beam jewel effect halogen
- Lamps – Roof marker/clearance – LED
- Mirrors – manually telescoping/folding trailer tow with power/heated glass, heated convex spotter mirror, integrated clearance lamps/turn signals
- MyKey® owner controls feature
- Remote keyless entry and Perimeter anti-theft alarm
- Safety Belts – color-coordinated w/height adjustment (front-outboard seating positions only)
- Safety Canopy® System
- SecuriLock® Passive Anti-Theft System (PATS)
- Stationary Elevated Idle Control (SEIC)
- SOS Post-Crash Alert System™
- Under hood service light

## DRIVER ASSIST

- AutoLamp (Auto On/Off Headlamps) with Rainlamp Wiper Activated Headlamps
- Cruise control (steering wheel-mounted)
- SYNC® with MyFord® – Voice-activated Communications and Entertainment System with 911 Assist® and AppLink™

## WEIGHT RATINGS

FRONT AXLE WEIGHT RATING	7000
REAR AXLE WEIGHT RATING	12000
REAR AXLE WEIGHT RATING	16500

## GO RHINO BLACK CENTER GRILLE GUARD

A GO RHINO black front center grille guard only (Braun part # 95572) shall be installed on front of chassis.

## FUEL TANK - FULL UPON FACTORY RELEASE

The chassis fuel tank of the completed unit shall be full at time of release from the ambulance manufacturer's facility.

## SUSPENSION - LIQUID SPRING

A CLASS®, or Compressible Liquid Adaptive Suspension System, shall be provided and installed. Utilizing a strut, with a compressible fluid as the spring/damping medium, and its sophisticated on-board microprocessor, CLASS® adapts the entire vehicle's response to road variations and the driver. Unlike current steel and air sprung suspension systems, CLASS® can automatically and instantaneously change the spring stiffness and damping at each wheel over a very broad range with minimal power consumption while the vehicle is being driven and without driver intervention. The system shall include an automatic lowering feature, which is activated by opening the rear patient compartment doors. There shall be a switch near the rear doors which will defeat the lowering feature.



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## **BATTERY - TWO SYSTEM - F SERIES CHASSIS**

The vehicle shall have a 12 V two (2) battery system rated at 1500 cold cranking amps. Both batteries shall be securely installed in the Ford OEM locations, under the vehicle hood.

## **ENGINE BLOCK HEATER - OEM PLUG**

An engine block heater shall be included in the chassis with the 125 VAC power cord, located under the hood.

## **FLOOR CONSOLE - ANGLED FRONT - REMOVABLE PLATES - ALUMINUM**

A center floor console manufactured out of aluminum and covered in a black onyx scratch resistant, multi-use polychromatic coating with a clear epoxy finish shall be installed in the cab. The console shall include a raised area to accommodate the Weldon Vista display on a hinged adjustable mount. The lower portion of the console shall consist of a flat area that shall contain the siren, two (2) drink holders, and then to the rear center a recessed storage area for maps and reports. The console face plates shall be removable for accessibility and serviceability.

## **HEAT SHIELDS**

Protective heat shields shall be installed above the exhaust system as recommended by the chassis manufacturer.

## **HIGH IDLE SYSTEM, AUTOMATIC**

An aftermarket auto high-idle system shall be provided on the chassis. The high-idle shall be programmed to activate when the transmission is placed in the park position and the parking brake is activated. The system will automatically go to high idle, but will adjust itself as needed for higher or lower idle. If the module heat or a/c is activated the high idle will be over ridden to 1500 rpm.

## **MIRRORS, EXTERIOR OEM MANUAL TELESCOPING W/REMOTE & HEAT**

The chassis shall have OEM telescopic trailer tow mirrors with power adjustable flat heated glass and manual adjustable convex glass.

## **OEM AUTO-LOCK DISABLED (cab & module doors do not auto lock or unlock)**

## **RUNNING BOARDS - STAR PUNCHED DIAMOND PLATE**

Aluminum diamond plate running boards with a star punched non-skid surface shall be provided on the cab. The running boards shall be bright dip anodized after they are formed to retain finish and increase corrosion resistance.

## **WHEEL SIMULATORS, STAINLESS STEEL WITH VALVE STEM EXTENSIONS**

Stainless steel full wheel simulators shall be provided for the front and the outside rear wheels. Air Max valve extensions shall be provided to properly inflate the inner dual rear tires.

## **CHASSIS CONVERSION - GRILLE INTERSECTION LIGHTS**

There shall be one (1) Whelen M4 LED mounted on each side of the Go Rhino grille guard. The LED shall be red with a clear lens and mounted on the side of the grille guard to act as a secondary intersection light.

## **ELECTRICAL SYSTEM - WELDON V-MUX, MICRO PROCESSOR BASED**

A Weldon V-MUX 100% solid state microprocessor based multiplex system shall be installed to control the electrical functions. The system shall include load management, load shedding, power modulation, load sequencing capabilities and provide on-board diagnostics with real-time status reporting. The system shall consist of one (1) color control console (Vista) in the cab, one (1) color control console (Vista) in the patient compartment, four (4) control nodes (Hercules), and a cab warning display with video input and monitoring capabilities.

## **VISTA IV MCC - PUSH BUTTON**

A Weldon V-MUX Vista IV interface module / display screen shall be provided and installed in the cab. The Vista module shall be operated through the use of push buttons.

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## **VISTA IV ACP - PUSH BUTTON**

A Weldon V-MUX Vista IV interface module / display screen shall be provided and installed in the patient compartment. The Vista module shall be operated through the use of push buttons.

## **WARNING DISPLAY - MULTIPLEX ELECTRICAL SYSTEM**

A digital warning display shall be integrated into the cab display console and programmed through the multiplex system to provide visual and audible indications for:

Parking brake set condition

Parking brake release condition

Patient status alarm (four color with reset capability)

Individual outside storage compartment "door open" warnings in vehicle outline form.

Low voltage alarm

Low oxygen pressure alarm

## **DAYTIME RUNNING LAMPS - MULTIPLEX ELECTRICAL SYSTEM**

Headlights shall be activated at 30% intensity, for day time operation, when transmission is placed in drive, as a feature of the multiplex system. (if not standard on the chassis)

## **MASTER CONTROL CONSOLE (MCC) - MULTIPLEX ELECTRICAL SYSTEM**

A floor mounted Master Control Console (MCC) shall be located in the cab. The console shall house the siren and the color microprocessor display screen, which will control all the Emergency Warning functions as well as also being able to control the Patient Compartment lighting and module heat/ac functions.

## **ATTENDANT CONTROL PANEL (ACP) - MULTIPLEX ELECTRICAL SYSTEM**

The Attendant Control Panel (ACP) shall contain a color micro processor screen, which will control all equipment installed in the patient compartment.

## **ELECTRICAL COMPARTMENT (PDQ) - MULTIPLEX ELECTRICAL SYSTEM**

The Power Distribution Quarters (PDQ) shall hold electrical components, (i.e. power distribution nodes, circuit breakers, etc). The electrical compartment shall be enclosed with a lockable, hinged door, located on the partition wall behind the attendant seat.

## **SPARE CIRCUIT - MULTIPLEX ELECTRICAL SYSTEM**

One (1) spare 15 amp circuit shall be provided.

## **WIRING HARNESS CONNECTORS - MULTIPLEX ELECTRICAL SYSTEM**

All wiring harnesses shall be connected via quick connect circular plug connectors.

## **RADIO TIE-IN POINTS - MULTIPLEX ELECTRICAL SYSTEM**

Radio tie-in points shall be installed and labeled in the lower area of the electrical compartment. The radio tie-in points shall be comprised of insulated terminal stud blocks with one "battery hot" and one "ignition hot".

## **EMERGENCY MASTER SWITCH - MULTIPLEX ELECTRICAL SYSTEM**

A single emergency master switch shall be supplied for activating all the emergency warning lights and shall be provided on the master control console screen. The emergency master switch will activate the module power automatically. There shall also be an Emergency Master Menu button which shall allow access to individual warning light functions.

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## **CONTROL PANEL SWITCHES - MULTIPLEX ELECTRICAL SYSTEM**

The switches on the master control console and attendant control panel screens shall have dimmable perimeter backlighting for easy identification.

## **MODULE POWER SWITCH - MULTIPLEX ELECTRICAL SYSTEM**

A module power switch for the electrical system shall be provided on both the master control console and the Attendant Control Panel screens.

## **MODULE DISCONNECT - MULTIPLEX ELECTRICAL SYSTEM**

An In-Power disconnect with a built-in adjustable timer shall be installed to keep the module power switch engaged for five minutes, after the ignition is switched to the "off" position. This disconnect can also be activated from the side and rear doorways to turn on the fluorescent check-out lights.

## **VOLTMETER - MULTIPLEX ELECTRICAL SYSTEM**

One (1) digital voltmeter shall be provided on the master control console screen.

## **FLASHER - MULTIPLEX ELECTRICAL SYSTEM**

The flasher shall be provided within and programmed by the multiplex electrical system.

## **FLASHING HEADLIGHTS - MULTIPLEX ELECTRICAL SYSTEM**

The headlights (high beams) shall be programmed through the multiplex system to alternate flash (wig-wag), activated by a switch on the master control console screen labeled "Flashing Headlights", with the ignition on and module power and emergency master switches enabled. The flashing headlights are to be disabled when the low or high beams are activated. They are also disabled when the transmission is placed in the neutral/park position. The flashing headlights shall have the capability to be reactivated with the "park override" switch in the "on" position if the low and high beams are off.

## **PARK OVERRIDE - MULTIPLEX ELECTRICAL SYSTEM**

A park override switch, located on the master control console screen, shall reactivate all lights disabled when the transmission is placed in the neutral/park position.

## **LOAD MANAGER-SEQUENTIAL SWITCHING SYSTEM - MULTIPLEX ELECTRICAL SYSTEM**

The load manager-sequential switching system shall be controlled by the microprocessor based electrical system. The emergency master switch shall control the sequential switching of the emergency lights and/or other warning devices. The load manager shall automatically shed not-critical electrical loads during low voltage conditions to help prevent electrical system overload when the vehicle is stationary and the transmission is in the park position.

## **WARNING LIGHTS FLASH PATTERN SIGNAL ALERT 75 - MULTIPLEX ELECTRICAL SYSTEM**

The default flash pattern for the warning lights shall be Signal Alert 75. These warning lights will be operated from a single switch labeled "flashers" via the Multiplex System on the master control console.

## **WARNING LIGHTS SWITCH - MULTIPLEX ELECTRICAL SYSTEM**

All flashing module warning lights shall be operated from a single switch on the master control console screen, labeled "flashers".

## **FRONT CLEAR DISABLE SWITCH - MULTIPLEX ELECTRICAL SYSTEM**

Activation of the switch on the master control console screen shall disable all forward facing clear warning lights.

## **CURBSIDE SCENE LIGHTS "ON" WITH CURBSIDE DOOR - MULTIPLEX ELECTRICAL SYSTEM**

The curbside scene lights shall be programmed to activate when the curbside door is in the open position.

## **REAR SCENE LIGHTS "ON" WITH REAR DOORS OPEN - MULTIPLEX ELECTRICAL SYSTEM**

The rear scene lights shall be programmed to activate when the rear doors are in the open position.

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## **DISABLE SWITCH FOR REAR SCENE LIGHTS - MULTIPLEX ELECTRICAL SYSTEM**

A disable switch shall be installed at the rear door area to disable the rear scene lights.

## **DISABLE SWITCH FOR SIDE SCENE LIGHTS - MULTIPLEX ELECTRICAL SYSTEM**

A disable switch shall be installed at the curbside door area to disable the curbside scene lights.

**REVERSE (TRANSMISSION) FUNCTIONS - MULTIPLEX ELECTRICAL SYSTEM** The system shall be programmed to provide activation for the rear outboard warning lights, the rear side warning lights, the rear scene lights, and the rear side scene lights, when the transmission selector lever is placed into "reverse" position.

## **AIR HORNS - BUELL DUAL TRUMPETS 10" & 12" UNDER BUMPER W/LANYARD**

A Buell air horn system with dual trumpets, one (1) 10" and one (1) 12", shall be mounted under the front bumper, one (1) each side. The compressor shall be installed in OSS #2. The air horns shall be activated by a push button switch located on the MCC (master control console) or by a lanyard cable installed in the OEM cab headliner area.

## **BACKUP ALARM**

An (OSHA approved) back up alarm shall be installed with disable switch for silent backing. The disable switch shall be located on the MCC (master control console). The back up alarm system shall automatically reset to the "on" mode when the transmission is taken out of reverse.

## **CAMERA REAR VIEW - SINGLE SYSTEM - VISTA SCREEN**

A color camera system connected to the cab Vista display screen shall be installed, providing rear view monitoring to the rear exterior of the module. The camera shall be connected to the video input provided in the cab's Vista screen. This camera image shall automatically be displayed on the MCC Vista when the vehicle is placed in reverse. The Vista shall resume normal operation when the vehicle is taken out of reverse.

## **BATTERY VOLTAGE INDICATOR LIGHT - KUSSMAUL-LED BAR GRAPH**

A Kusmaul battery voltage indicator light will be installed on the module and located near the shoreline inlet. The indicator shall give a lighted LED bar graph type indication of the amount of voltage contained in the 12 volt battery system. (Accurate battery Voltage read out is obtained when the vehicle is not started and shoreline is disconnected)

## **ELECTRICAL CIRCUITS**

All electrical circuits shall have wiring and circuit protection suitable to the demand and must meet the national electric code (NEC) wiring requirements.

All added on wiring (18 GA through 10 GA) shall be color coded and stamped with code numbers and functions every 4" for easy identification (all other wiring shall be color coded). SLX high temperature thermoplastic cross link wire shall be used.

SGX insulated cable shall be used for all under hood / underbody battery and charging system cable. High temperature (375° f) thermoplastic loom shall be used on all harnesses.

## **GROUND FAULT CIRCUIT INTERRUPTER (GFCI)**

A 125 VAC, 20 AMP circuit breaker with ground fault circuit interrupter (GFCI) electronic ground leakage detection shall be installed in the load center for the shoreline circuit.

## **INVERTER, VANNER - 1050 WATT, #20-1050CUL-DC CHARGER**

A Vanner 20-1050CUL-DC, 1050 watt inverter with battery conditioner/charger, with remote switch, shall be provided and installed.

## **LIGHT OSS COMPARTMENT - AMDOR LUMA BAR**

Each outside storage compartment shall be equipped with AMDOR Luma Bar lights, activated by a magnetic switch.

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All Compartment Lighting will be comprised of the AMDOR Luma Bar LED lighting system without exception. The Luma Bar lighting system includes the following key features:

- Wide angle 120 degree surface mount LED installed on a printed circuit board for shock and vibration resistance.
- Lighting will be enclosed within a high impact polycarbonate enclosure
- Output will exceed NFPA 1901 Compartment Lighting standard
- Draw not to exceed 130 mA per foot / forward voltage of 20mA per LED
- 21" boards will be connected in series using a high grade Molex connector

## **LIGHT, SPOTLIGHT - HAND-HELD - OPTRONICS - BLUE EYE**

One (1) 12 VDC #KB-4003 hand-held spotlight with a 400,000 candle power "blue eye" bulb, 10 foot coil cord, and momentary switch shall be provided. The spotlight shall be hard wired to the cab master control console. A black ABS vacuum-formed spotlight holder shall be shipped loose with the completed ambulance.

## **OUTLETS, 125VAC - FIVE (5) INTERIOR DUPLEX**

Five (5) 2-wire +plus ground 125 VAC hospital-grade duplex outlets shall be installed in the patient compartment with wiring connected to the shoreline. Two (2) outlets shall be installed in the street side cabinet action area, one (1) forward and one (1) rearward, to supply 125 VAC to the monitoring equipment. One (1) outlet shall be installed in the lower front wall cabinet and two (2) outlets shall be installed in locations to be determined at the pre-construction meeting. An indicator lamp shall be located within each 125 VAC outlet as a line monitor to indicate a live circuit. The outlets shall be labeled, "125 VAC".

## **OUTLETS, 12VDC - SEVEN (7) INTERIOR POWERPOINT**

Seven (7) 12 VDC power point outlets shall be installed in the patient compartment, one (1) in the front wall equipment area, and one (1) in the attendant control panel area in the street side cabinet and five (5) outlets shall be installed in locations to be determined at the pre-construction meeting. The outlets shall be labeled, "12 VDC". A Schottky diode medical isolator shall be provided to protect the 12 VDC outlets.

## **RADIO ANTENNA BASES - FIVE (5)**

Five (5) antenna bases with attached coax cables shall be installed on the module roof. Two (2) of the coax cables shall terminate in the attendant control panel, and three (3) of the coax terminations shall terminate in the cab behind the drivers seat. Access to the antenna bases shall be through adjacent module interior dome lights.

## **RADIO TIE-IN POINT - (2) 12V/25 AMP- CAB CONSOLE & PATIENT COMPT**

One (1) set of 12 volt/25 amp radio tie-in points shall be installed in the cab console area of the unit. The set shall include one (1) "Battery Hot", one (1) "Ignition Hot", and one (1) "Grounded" junction stud.

One (1) set of 12 volt/25 amp radio tie-in points shall be installed in the patient compartment attendant control panel area of the unit. The set shall include one (1) "Battery Hot", one (1) "Ignition Hot", and one (1) "Grounded" junction stud.

## **RECEPTACLE SHORELINE INLET-SUPER 30 AMP, AUTO EJECT**

A Kussmaul super auto eject shoreline inlet receptacle with a cover shall be installed on the module exterior (forward street side) near the driver's door. The receptacle shall be equipped with an integral dynamic disconnect.

The 125 VAC, heavy duty 30-amp circuit breaker shall have GFCI protection and shall be connected to the lighted 125 VAC patient compartment outlet(s). A mating connector shall be shipped loose with the completed ambulance.

## **HOWLER - SIREN & SPEAKER SYSTEM**

The Whelen Howler siren and speaker system shall be provided and installed. The Howler works with the siren amplifier to provide deep, low frequency tones, which are able to penetrate other vehicles, alerting drivers and pedestrians of your approach. To be activated by a switch on the MCC.

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## **SIREN, WHELEN 295-HFSA7-REMOTE WITH MICROPHONE**

A Whelen 295-HFSA7 remote dual siren amplifier shall be flush-mounted in the master control console located in the cab. The siren shall be capable of hands-free operation and shall be equipped with a noise canceling microphone. Some features of this siren include:

## **DUAL 200 WATT, FLUSH MOUNT SIREN with REMOTE SIREN AMPLIFIER**

- Six function siren plus radio repeat and public address.
- Operates two 100-watt speakers.
- Operates in dual (outputs 2 independent siren tones creating rich harmonic dual tone sound) or mono sound modes.
- External dip switch programmable siren tones.
- PTT (push to talk) switch on microphone overrides all siren functions.
- Removable unidirectional microphone with adjustable microphone volume & adjustable preset radio repeat volume.
- SI TEST@, silent diagnostic test.
- Quick disconnect plug for ease of service or replacement.

## **12 Siren Tones**

- Airhorn • Wail • Yelp • Piercer • Manual Coast to Stop
- Manual • Mechanical Coast to Stop • Hi/Low • Yelp 249
- Warble • Whoop • Mechanical Tone

## **SIREN SPEAKERS, CAST PRODUCTS - IN FRONT BUMPER**

Two (2) Cast Products - 100-watt siren speakers, shall be installed in the front bumper.

## **SYSTEM ACTIVE AND CHECK OUT LIGHTS - 10 MINUTES**

A switch shall be located at the curb and rear entry doors that will allow activation of the V-MUX electrical system. There shall also be a check out light switch located at the curb and rear doors that will allow activation of the left LED angled lights prior to entering the module. The system shall be programmed to shut down automatically after 10 minutes unless the ignition is on. This shutdown delay shall be user adjustable.

## **LIGHTS, DOME LED (8)**

Eight (8) Tecniq (E08-LC10-1) 18 LED dome lights, shall be provided in the patient compartment. The dome lights shall be controlled by separate switches for the left bank and right bank of lights. The dome lights shall be activated by switches on both the attendant control panel and the master control console. The dome lights shall be illuminated at 50% power whenever the patient compartment side or rear doors are opened.

## **LIGHTS, TECNIQ LED PANEL (3) STREETSIDE - ANGLED-DELETED**

Three (3) Tecniq (E30-L010-1) 21 LED lights shall be mounted on the angled panel above the streetside interior cabinets. These lights shall be three way switched from the attendant control panel and the master control console.

## **LIGHTS, TECNIQ LED PANEL (2) CURBSIDE - ANGLED**

Two (2) Tecniq (E30-L010-1) 21 LED lights shall be mounted on an angled panel located above the curbside seating area. These lights shall be three way switched from the attendant control panel and the master control console.

## **LIGHTS, ICC / LED CLEARANCE - ON MODULE FRONT - TECNIQ**

The vehicle shall have five (5) amber Tecniq LED (S33-AA00-1) clearance / ICC lights on the front of the module near the roof line.

## **LIGHTS, ICC / LED CLEARANCE - ON MODULE REAR - TECNIQ**

The vehicle shall have five (5) red Tecniq LED (S33-RR00-1) clearance / ICC lights on the rear of the module near the roof line.

## **LIGHTS, RUNNING BOARD - WHELEN- (2 inch round) T0CACCCR - LED**

One (1) pair of Whelen white T0CACCCR LED lights with black grommets shall be installed one (1) each side, low on the module front, as running board lights. The lights shall activate with the cab door switches.

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## **LIGHTS, FRONT GRILLE - (4) WHELEN 500 SUPER LED (2-RED/2-CLEAR) W/CLEAR LENS**

Four (4) Whelen 500 series super LED warning lights, two (2) red, and two (2) clear with clear lenses and waterproof connectors shall be installed in the grille area of the chassis. The lights shall operate from a switch on the master control console labeled "Flashers". These light will flash in an approved KKK flash pattern. The upper two red grille lights shall illuminate with the module center white light. The lower white lights shall illuminate with the outer module red lights.

## **LIGHTS, FRONT MODULE - WHELEN (7) 900 - (4) RED (3) CLEAR LED W/CLEAR LENS**

Seven (7) Whelen 900 series super LED warning lights with chrome flanges shall be installed on the module front. There shall be four (4) red and three (3) clear lights. All lights shall have clear lens. The lights shall operate from a switch on the master control console, labeled "Flashers". R/W/R/W/R/W/R

## **LIGHTS, FRONT MODULE TURN SIG - WHELEN 600 LED ARROWS AMBER**

One (1) pair of Whelen 600 LED amber turn arrows in chrome bezels shall be mounted on the front of the module under the warning lights.

## **LIGHT, OPTICOM, INFRARED PRIORITY CONTROL SYSTEM -792H**

An Opticom™ Infrared system shall be installed on the module front utilizing the 792H Emitter. The control system provides positive guidance for emergency vehicles and sustains flow control for traffic engineering.

## **LIGHTS, REAR TAIL - WHELEN 600 LED STOP, TURN, & MINIMUM INTENSITY BACK-UP**

One (1) pair each of Whelen 600 series LED stop/tail lights, turn lights, and MINIMUM intensity LED back-up lights with chrome bezels shall be installed on the rear of the module.

## **LIGHTS, REAR WINDOW-LEVEL - WHELEN (2)900 LED RED LENS - LOW INTENSITY B/O**

Two (2) Whelen 900 series red super LED warning lights with red lenses and chrome bezels shall be installed on the rear of the module at window level, one (1) on each side. These lights shall operate from a switch on the master control console, labeled "Flashers". In addition, these lights shall be tied into the brake circuit, and shall activate as brake lights in low intensity mode when the brake pedal is depressed.

## **LIGHTS, REAR MODULE -WHELEN (7) 600 -(4) RED, (1) AMB LED, (2) PIONEER SCN**

Four (4) Whelen 600 red super LED warning lights with clear lens, two (2) Whelen Pioneer PFP1 LED scene/load lights with PBA103 chrome housings, and one (1) Whelen 600 series amber super LED warning light with clear lens shall be installed on the rear of the module. The lights shall be installed with chrome flanges and shall be operated from switches on the master control console labeled "Flashers" and "Rear Scene Lights".

## **LIGHT, LICENSE PLATE LED**

One (1) Whelen OACOEDCR LED license plate light with 45 deg angled chrome-plated bezel shall be installed on the rear of the module, lower left side.

## **LIGHTS, ICC / LED CLEARANCE - ON MODULE SIDE - TECNIQ**

The vehicle shall have two (2) red Tecniq LED (S33-RR00-1) clearance / ICC lights: one (1) red on each side at the rear of the vehicle which will also function with the turn signals.

## **LIGHTS, INTERSECTION FRONT - WHELEN 700 SUPER LED - RED W/CLR LENS**

Two (2) Whelen 700 series red super LED warning lights, with clear lens and water-proof connectors shall be mounted, in 15 degree tilt housings on the front chassis fenders, one (1) on each side. The lights shall operate from a switch on the master control console labeled "Flashers".

## **LIGHTS, SIDE MODULE FLOOD (4) - WHELEN PIONEER LED SINGLE (PFP1)**

Four (4) Whelen Pioneer Super LED (PFP1) single lamp floodlights with (PBA103) chrome trim ring shall be installed, two (2) each module side, inboard of the warning lights. These lights shall operate from switches on the master control console labeled "Left Scene Light" and "Right Scene Light".

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## **LIGHTS, SIDE MODULE WARNING - WHELEN 900 SUPER LED - RED W/CLR LENS**

Four (4) Whelen 900 series red super LED warning lights with clear lenses and chrome flanges shall be installed, two (2) each module side, outboard of the side module scene lights. These lights shall operate from a switch on the master control console labeled "Flashers".

## **LIGHTS, INTERSECTION REAR - WHELEN 700 SUPER LED - RED W/CLR LENS**

Two (2) Whelen 700 series red super LED warning lights with clear lenses, chrome flanges and water-proof connectors, shall be installed above the rear wheel wells, one (1) on each side. These lights shall operate from a switch on the master control console screen labeled "Flashers".

## **ELECTRICAL - TWO (2) ADDITIONAL WHELEN 900 SERIES LED**

There shall be two (2) additional Whelen 900 Series LED lights at rear window level. They shall be mounted above the Whelen 900 Series LED's which are also enabled to work as brake lights.

## **ELECTRICAL - WHELEN PIONEER NANO GRILLE LIGHTS**

There shall be two (2) Whelen Pioneer Nano NP6BB LED lights with black housings mounted to the Go Rhino grille guard

## **ELECTRICAL - REAR FACING EXTERIOR DOOR LIGHTS**

One (1) Whelen 2GR00FRR red LED light shall be installed on the interior of all rear facing exterior compartment doors. The light shall be located on each lower outer corner. The lights shall random flash upon door opening.

One (1) Whelen 600 LED amber arrow light shall be installed on the interior of each rear passage door. The lights shall be located on the lower outer corner of each door and point towards the outside of the vehicle when the doors are open. Inside the rear doors there shall be a disable switch to disable the rear passage door arrows.

## **ELECTRICAL -STEPWELL TRUCKLITE LED 44**

## **CUSTOMER SUPPLIED RADIO - ONE (1)**

One (1) Customer supplied radio to be installed in a location to be determined in the pre-construction meeting.

## **CUSTOMER SUPPLIED HAND HELD RADIOS - TWO (2)**

Two (2) Customer supplied hand held radios to be installed in locations to be determined in the pre-construction meeting.

## **CUSTOMER SUPPLIED FLASHLIGHT - ONE (1)**

One (1) Customer supplied Flashlight to be installed in a location to be determined in the pre-construction meeting.

## **MODULE BODY CONSTRUCTION - SEAMLESS**

The module shall be fabricated entirely of parts cut and formed from .125" (minimum) thickness 5052-H32 flat aluminum sheet stock, using CNC machines capable of .0004" repeatability. This is the only alloy that may be used for body parts that are welded together.

The roll-cage type interior super-structure, aluminum partition and module shall all be welded together into a single unit to give optimum strength for patient and attendant protection. The module roof shall be designed with a minimum 1.5" crown to facilitate water run off.

The floor, roof, sides, and all exterior doors shall be fabricated from .125" (minimum) thick flat aluminum sheet stock. The exterior joints between the roof and side components shall be continuous full seam welded the entire length of the module. All exterior body panel joints shall be continuous full seam welded.

No VHB bonding tape or other adhesives shall be used in the construction of the ambulance module.



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## **CONNECTIONS, MODULE**

The module shall be bolted to the chassis frame rail with (12) 5/8" -11 grade 8 bolts through OEM rubber insulating spacers installed on outriggers at twelve (12) separate locations (six each frame rail), providing noise insulation and easy removal for chassis replacement. The frame mounting bolts shall be properly torqued and secured with locktite. The system used for fastening the module to the frame shall be that approved by the chassis manufacturer.

## **ALUMINUM PARTS - MODULE EXTERIOR**

All unpainted exterior aluminum parts shall be bright dip anodized after fabrication to retain the finish and increase corrosion resistance.

## **CORROSION MINIMIZATION - MODULE**

All module contact with dissimilar metals shall be minimized with the use of nylon screw-hole inserts to prevent fastener contact with the module body, nylon hinge strips, ceramic coated stainless steel hinge bolts, and ECK brand corrosion inhibitor spray.

## **DOOR SKINS, OUTSIDE STORAGE COMPARTMENTS - DIAMOND PLATE INTERIOR SKINS**

The interior door skins for all outside storage compartments shall be constructed of .063" thick aluminum diamond plate.

## **DOOR CONSTRUCTION - GASKET PLACEMENT**

All exterior hinged module doors shall be constructed in an inverted pan-formed design. The pan shall be constructed from .125" thick 5052-H32 flat sheet aluminum. The exterior door skin shall be constructed of .190" thick aluminum and welded to the pan.

Door gaskets shall be attached to the interior side of the door skin. Gaskets attached to interior door frames are not satisfactory and shall not be accepted.

## **EXTERIOR COMPARTMENTS DESIGN**

All exterior compartments shall include these features:

- Sound absorbing slip resistant polyurethane material shall be sprayed on the inside of all compartments and compartment shelving, slide out trays and closeouts.
- Baffled seep holes shall be provided to prevent water from splashing or seeping into the exterior compartments.
- Full-length, two-way adjustable, stainless steel hinges on all exterior compartment doors with 3/16" stainless steel hinge pins.
- Compartment doors shall be installed, flush with the module body.
- When double doors are provided, each door shall have an exterior handle, but only the forward door shall be lockable. (rearward door is secured when forward door is locked). All exterior compartments and passage doors shall be keyed alike.
- Lockable, Eberhard "free-floating" type chrome plated handles with rotary locks. A gasket shall be installed under each handle to protect the paint.
- Drip rails shall be installed above all exterior compartment doors.

## **EXTERIOR COMPARTMENTS, VENTING**

A minimum of nine (9) square inches of venting shall be provided inside the #1, #2, #3, & #4 exterior storage compartments to provide for easier closure of the compartment doors.

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## **EXTERIOR COMPARTMENTS, VENTING - OXYGEN STORAGE**

A minimum of nine (9) square inches of venting shall be provided in the exterior oxygen storage compartment, to dissipate any leaking oxygen gas.

## **EXTERIOR COMPARTMENTS - SWEEP-OUT**

Exterior module compartments shall be of a sweep-out design to aid in facilitation of the purchaser's routine care and cleaning of the vehicle.

All exterior compartment floors, with the exception of the front ALS compartment shall be constructed to be flush with the bottom door frame.

## **HANDLES, EBERHARD - CHROME FREE FLOATING TYPE**

Eberhard #EMC-1-2110 chrome "free-floating" handles shall be installed on each exterior module door. The handles shall be large enough to accommodate a gloved hand.

## **INSULATION - POLYURETHANE SPRAY FOAM**

The walls, ceiling, passage doors, outside storage doors, the entire underside of the module floor (except for mounting pads), the underside of the outside storage compartments, the wheel wells, and the underside of the curbside step area shall be completely foam - in - place insulated with nominal 3/4" thick sprayed on class I, urethane foam for thermal and acoustical insulation. The insulation shall comply with FMVSS #302 flame spread requirements. The underside of the body shall be properly prepared to ensure adhesion before the spray insulation is applied.

## **SOUND DEADENING PACKAGE**

Audioguard acoustic coating shall be applied to help reduce structure-born vibrations and associated sound transmission. The entire floor, the left wall, the ceiling, and the left and right panels forward of the partition shall be covered at the manufacturers recommended thickness.

## **ZTECH UNDERCOATING**

The entire underbody (excluding drive shaft, wheels, fuel tank, and 12" either side of exhaust system) shall be sprayed with ZTECH under seal for reduced corrosion.

## **COATING, CERAMIC THERMAL**

Temp-Coat ceramic thermal barrier coating shall be applied to the interior of the module roof after the spray foam application. Material shall be applied to meet or exceed the manufacturers recommended thickness.

## **THRESHOLD, STAINLESS STEEL - EXTERIOR STORAGE COMPARTMENT**

Each exterior storage compartment with a hinged door shall have a stainless steel lower threshold at the door opening to protect the paint as equipment is installed and removed from the compartment.

## **DOOR SLIDING - MODULE CURBSIDE PASSAGE**

The module body shall include a sliding side entry door to access the curbside of the patient compartment. The door shall slide out and towards the rear of the module body. The door design must meet FMVSS 206 for sliding doors and shall have been cycle tested in excess of 100,000 cycles. The door shall not extend out more than 5 1/4" from the module when in the open position and shall be flush in the closed position. The door shall operate on a total of nine (9) casters and three (3) tracks for ease of operation. The door shall be held closed with two (2) rotary latches and two (2) locking tabs. The door must have a system to prevent the door from self closing, when unit is parked on an incline. A measured force of ten (10) pounds maximum shall be required to release the door from the open to closed position. A chrome locking handle shall be installed on the exterior of the door. The door shall be lockable from the inside and outside and shall shut on molded air-core, automotive type door seals to prevent any water from leaking into the vehicle interior. A drip rail shall be installed above the door.

## **LOWERED MODULE SIDES**

Module sides to be as low as possible and still comply with KKK-1822-F ramp break over angle. Lowered sides will allow easier entry into the module as well as increased compartment storage.

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## **DOORS - REAR PASSAGE**

There shall be a 47.50" wide x 59" high rear door opening in the patient compartment. The doors shall be flush without a protruding flange or lip. The right rear passage door shall have a lockable, chrome exterior handle. The left rear door shall have a non-locking, chrome exterior handle. All handles shall be installed with a gasket to protect the paint. The hinge shall be full length stainless steel with a 3/16" stainless steel hinge pin and shall be two-way adjustable. Each rear door shall have a two point slam action automotive type rotary latching system to the body.

The right rear door shall lock to the body at the top and bottom, not to the left rear door. The doors shall have .213" steel door latch activator rods with turn buckle adjusters. The doors shall be lockable from the inside and outside.

All doors shall shut on molded, air-core, automotive type door seals to prevent any water from leaking into the vehicle interior. Each door shall have an access port adjacent to the rotary locks.

## **FENDERETTES - POLISHED ALUMINUM**

Polished aluminum fenderettes shall be installed around the rear wheel well openings.

## **FUEL FILL PROTECTOR - STAINLESS STEEL**

An stainless steel fuel fill protector shall be provided and installed.

## **DEF TANK FILL PROTECTOR - STAINLESS STEEL**

An stainless steel DEF tank fill protector shall be provided and installed.

## **HOLD-OPEN - REAR DOORS - GRABBERS**

Door grabbers (1 pair) with hard rubber inserts shall be installed on the rear doors, permitting a door hold open position of 180 degrees.

## **SWITCH DOOR UNLOCK - HIDDEN IN FRONT GRILLE AREA**

An exterior hidden door unlock switch shall also be included and located in the front grille area.

## **LOCKS POWER - PASSAGE, COMPARTMENTS, KEY FOBS**

Power door locks shall be included on module passage doors and five (5) outside storage compartments. The locks shall be activated from the interior of the rear door and the curbside doorway, as well as the OEM chassis cab door switches. A keyless entry system shall be installed. The system shall operate with the OEM key fobs to lock/unlock all chassis and module doors.

## **MUD FLAPS, REAR - BLACK RUBBER FIBERGLASS REINFORCED - THREE COLOR BRAUN LOGO**

Black rubber, fiberglass reinforced mud flaps with a minimum 1/4" thickness shall be bolted to the underside of the module behind the rear wheels. The width and length of the flaps shall provide adequate coverage of the rear dual wheels of the chassis. The mud flaps shall include a three color Braun logo.

## **REAR STEP/BUMPER -FLIP-UP CENTER SECTION - STAR PUNCHED AND ANODIZED**

The rear bumper shall be affixed to the chassis frame. The bumper shall be constructed with a hinged center section. Two (2) steel braces shall secure the step to the chassis frame. The outer 17" on each end of the bumper shall be constructed from heavy gauge stamped polished stainless steel bumper parts and shall provide smooth rounded corners. The step shall be constructed of star punched .125" thick aluminum diamond plate. Two (2) rear LED step illumination lights shall be provided. All diamond plate surfaces shall be bright dip anodized. Rear step installation shall comply with AMD standard 018. A strip of black PVC shall be installed on the face of the step to protect the patient cots during loading.

## **RUB RAILS, ANODIZED ALUMINUM**

Bright dip anodized polished aluminum rub rails shall be installed on the lower sides of the body below the outside compartment sill areas. The rub rails shall be offset 3/16" from the body to facilitate wash down of road debris.

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## **STEPWELL, CURBSIDE DOORWAY**

An aluminum diamond plate step well liner shall be installed in the curbside doorway step area.

## **STONE GUARDS, MODULE FRONT - ANODIZED DIAMOND PLATE (24" H)**

Bright dip anodized aluminum diamond plate stone guards shall be installed on the lower 24" of the module front, one (1) each side. These stone guards shall be 14" wide.

## **KICKPLATE/THRESHOLD, REAR DOORWAY - ANODIZED DIAMOND PLATE**

A bright dip anodized aluminum diamond plate kick plate shall be installed at the rear exterior doorway, providing a kick / scuff plate at the rear of the vehicle above the rear step.

## **TOW HOOKS, MODULE REAR**

Two (2) tow hooks shall be provided in the rear step area and shall be securely fastened to the vehicle frame.

## **WINDOW, 13" x 33" CURBSIDE FIXED MODULE**

A tinted 13" x 33" non-openable (fixed window) shall be installed on the curbside of the patient compartment module.

## **WINDOWS, PASSAGE DOOR - (CURB SLIDING, REAR FIXED)**

The curbside passage door shall have a 16" x 23" openable (*sliding*) window with removable screen. Each rear passage door shall have a 19" x 18" non-openable window. The distance between the rear window glass shall not exceed 6" to assure maximum vision to the rear. The windows shall have a 69% dark tint and shall be secured with black oxide coated fasteners. No warning lights shall be blocked from view when the curbside or rear doors are open.

## **TURTLE TILE MATTING (LT GRAY) - BOTTOM OF OUTSIDE COMPARTMEN**

Lt. Gray Turtle tile matting with ramps shall be installed in the bottoms of outside storage compartments #1, #2, #3, #4, and #5 to ensure proper ventilation of the compartment and stored equipment.

## **OUTSIDE STORAGE #1 - STREETSIDE FORWARD - OXYGEN & BACKBOARDS**

# 1 (forward street side compartment) shall have a 77.75" high x 18.50" wide clear door opening with 87.50" high x 22.00" wide x 20.75" deep interior dimensions. This compartment provides storage for two (2) "M" or "H" oxygen cylinder and storage for backboards with a 50" high vertical divider between the cylinder and backboard storage areas. A spring loaded hinged acrylic door shall be provided to allow access from inside the patient compartment to the oxygen cylinder valve. A 9-square inch vent shall be provided in the oxygen storage compartment to permit leaking gas to dissipate to the exterior of the vehicle. The oxygen cylinders shall be secured with a minimum of four (4) restraining devices, meeting AMD standard 003. A cylinder changing wrench shall be provided and secured inside the oxygen cylinder compartment. The compartment door shall be held open with a spring loaded gas cylinder. A locking handle shall be installed on the exterior of the door. The oxygen cylinders shall be provided by the purchaser.

## **OUTSIDE STORAGE #2 - STREETSIDE CENTER**

#2 (street side center compartment) shall have a 48.25" high x 19.00" wide clear door opening with 51.25" high x 24.00" wide x 20.75" deep interior dimensions. One (1) fusee holder shall be installed on the inner door skin of the compartment door. The compartment door shall be held open with one (1) spring loaded gas cylinder. A locking handle shall be installed on the exterior of the door.

## **SHELF TRACK - EXPOSED - OSS #2**

Unistrut 1-1/4" x 3/4", 19 gauge channel shall be installed in outside storage compartment #2. Exposed tracks will be welded in place and coated with Gatorhyde material for a cleaner look and no exposed fasteners.

## **SHELF ONE (1) IN OSS #2**

One (1) adjustable shelf with sprayed on polyurethane material shall be provided and installed in outside storage compartment #2.

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## **OUTSIDE STORAGE #3 - STREETSIDE REAR**

#3 (street side rear compartment) shall have a 62.00" high x 33.25" wide clear door opening with 63.75" high x 36.75" wide x 20.75" deep interior dimensions. The compartment door shall be held open with a spring loaded gas cylinder. A locking handle shall be installed on the exterior of the door.

## **SHELF TRACK - EXPOSED - OSS #3**

Unistrut 1-1/4" x 3/4", 19 gauge channel shall be installed in outside storage compartment #3. Exposed tracks will be welded in place and coated with Gatorhyde material for a cleaner look and no exposed fasteners.

## **SHELVES TWO (2) IN OSS #3**

Two (2) adjustable shelves with sprayed on polyurethane material shall be provided and installed in outside storage compartment #3.

## **OUTSIDE STORAGE #4 - CURBSIDE REAR**

#4 (rear curbside compartment) shall have a 71.75" high x 17.75" wide clear opening with 81.50" high x 21.50" wide x 20.50" deep interior dimensions. The compartment shall have three (3) adjustable shelves with inside/outside access. There shall be a 40 inch tall fixed divider 12.75" front the forward wall and below the lowest shelf for stair chair storage forward of the fixed divider. The compartment door shall be held open with a spring loaded gas cylinder. A locking handle shall be installed on the exterior of the door.

## **OUTSIDE STORAGE #5 - CURBSIDE FORWARD**

#5 (forward curbside compartment) shall have a 67.25" high x 13.50" wide clear door opening. The compartment shall be split into two (2) compartments. #5 provides inside/outside storage and shall have and shall have two (2) adjustable shelves. (Reference the lower front wall cabinet in patient compartment specification for interior dimensions). #5B shall have 20.00" high x 16.00" wide x 17.50" deep interior dimensions. The compartment door shall be held open with a spring loaded gas cylinder. A locking handle shall be installed on the exterior of the door.

## **ROUNDED INTERIOR CORNERS**

Interior vertical edges shall have rounded corners in the following locations: forward and aft edges of the CPR seat, the wall at the aft end of the squad bench, the partition opening cabinet edges and the upper front wall cabinet.

## **LATCHES CABINET - CHROME / STAINLESS STEEL**

The ACP (attendant control panel) door, the PDQ (power distribution quarters) door, and the radio cabinet door shall be secured with chrome locking lever latches, all remaining interior hinged cabinet doors and drawers shall be secured with Southco stainless steel locking flush pull latches.

## **LEFT WALL - ATTENDANT CONTROL PANEL - HINGED PANEL**

The color micro processor screen shall be installed on an angled hinged access panel and secured with two (2) latches. The panel will be located to the immediate right of the attendant's seat. The forward portion of the panel will contain a flat area that may be used for future radio mounting etc.

## **STREET SIDE CABINETS #1 & #2**

The left wall, upper rear interior cabinet (#1) shall have a door opening of 15.00" high x 30.75" wide with interior dimensions of 17.50" high x 32.75" wide x 17.25" deep. The left wall, interior upper cabinet (#2), above the attendant control panel, shall have a door opening of 9.75" high x 27.00" wide with interior dimensions of 12.25" high x 29.00" wide x 17.25" deep. Each cabinet shall be enclosed by one (1) set of sliding acrylic doors and each cabinet shall contain one (1) adjustable shelf.

## **CABINET - LEFT WALL, LOWER REAR #3 - FIXED FRAME**

The left wall, lower rear interior cabinet (#3) shall have a door opening of 26.25" high x 31.00" wide with interior dimensions of 17.75" high x 32.00" wide x 17.25" deep. The compartment shall be enclosed by one (1) set of sliding acrylic doors and equipped with one (1) adjustable shelf.

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## **CABINET - LEFT WALL, LOWER UNDER REAR ACTION AREA #4**

The left wall, lower cabinet (#4) under the rear action area shall have a door opening of 15.25" high x 10.00" wide with interior dimensions of 17.00" high x 11.75" wide x 17.25" deep. This compartment shall be enclosed by one (1) hinged acrylic door secured with a latch and shall have one (1) adjustable shelf.

## **PRIMARY ACTION AREA**

The primary action area shall be located beside the attendant seat with work area dimensions of 40.25" wide x 17.00" deep.

## **SECONDARY ACTION AREA**

The secondary action area shall be located to the rear of the CPR seat with work area dimensions of 18.00" high x 16.75" wide x 17.00" deep.

## **CABINET - FRONT WALL, UPPER KNOX BOX MED VAULT**

The front wall, upper curbside shall have a recessed Knox Box Med Vault II with Wi-Fi and an aluminum access panel.

## **CABINET - FRONT WALL, LOWER #2 & #3 - INSIDE/OUTSIDE ACCESS**

The front wall lower cabinet (#2) shall have a door opening of 21.00" high x 25.25" wide with interior dimensions of 24.75" high x 31.50" wide x 17.75" deep. This cabinet shall provide inside/outside access and shall have one (1) adjustable shelf on Unistrut adjustable track brackets. One (1) clear light mounted in a removable panel will provide illumination in this compartment. There shall be aluminum beveled ramp edging installed on two edges of each shelf. This compartment shall be enclosed by one (1) pair of 3/8" thick, hinged acrylic doors. Each door shall have a full length hinge, a full length handle, and a latch.

The front wall lower cabinet (#3) shall have a door opening of 21.00" high x 25.25" wide with interior dimensions of 24.75" high x 31.50" wide x 17.75" deep. This cabinet shall provide inside/outside access and shall have one (1) adjustable shelf on Unistrut adjustable track brackets. One (1) clear light mounted in a removable panel will provide illumination in this compartment. There shall be aluminum beveled ramp edging installed on two edges of each shelf. This compartment shall be enclosed by one (1) pair of 3/8" thick, hinged acrylic doors. Each door shall have a full length hinge, a full length handle, and a latch.

There shall be one (1) adjustable shelf installed as a divider between the upper and lower cabinets. A removable faceplate shall be installed also be installed between the upper and lower cabinets, to allow for possible future cabinet modifications.

## **CABINET - FRONT WALL, ABOVE PDQ (SINGLE VENTED DOOR)**

The compartment above the power distribution cabinet (PDQ) shall have a door opening of 23.00 high x 11.75" wide with interior dimensions of 23.00" high x 11.75" wide x 19.00" deep. The compartment shall have a vented, hinged aluminum door secured by a chrome locking lever latch. Door to open towards rear of the ambulance module.

## **PASS THROUGH - CAB TO MODULE**

A window opening shall be provided in the rear of the cab to accommodate pass-through communications to the patient compartment. A bellows shall be provided to connect the cab to the module.

## **HEAT/AIR CONDITIONING, HOSELINE CENTER DUCTED**

A ProAir IW-3856 580 CFM heater/air conditioner system with 56,000 BTU heating capacity and 38,000 BTU cooling capacity utilizing a 4x4 AC/Heat core and with a 10-speed blower controlled through, the pulse-width-modulated output of the microprocessor based electrical system, shall be provided for high volume air movement with minimal noise. The heater/air conditioner air return shall be filtered to minimize contamination of the heater/air conditioner cores. The cab and module environmental systems shall be simultaneously capable of heating in the front while cooling in the rear and vice-versa. A thermostatically controlled rear system shall be provided for heating and air conditioning the patient compartment.

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The temperature, whether heating or cooling, shall be controlled by a thermostat built into the attendant control panel screen, located in the street side cabinet and from the cab master control console screen. Heating and cooling may be selected automatically or manually. The heater/air conditioner system shall function only when the ignition system and the module power switch are on. The rear heater shall have EPDM/Nomex heater hoses. The rear air conditioner shall have barrier air conditioner hoses for R-134A refrigerant. Full module HVAC controls shall be located on both the rear ACP screen and the cab MCC screen.

The module heat and ac system shall be installed in the upper portion of the front wall. Eight (8) adjustable heat/ac vents shall be located in a center ducted configuration.

## **CONDENSER - HOSELINE TMC 2007, MODULE FRONT MOUNT**

A Hoseline TMC 2007 condenser shall be installed on the front of the module. Condenser shall be installed with PR 182-5 brackets. Condenser and brackets are to be painted to match the module. Condenser to be located per dwg #1.

## **ATTN SEAT - CN8 COMPLIANT EVS HiBAC, SWIVEL BASE**

A rear facing EVS HiBAC attendant seat shall be installed at the head of the patient cot. The seat shall be equipped with a sliding swivel base. The seat shall be KKK-A-1822F Change Notice 8 compliant with V4 harness style shoulder / seat belt and conform to all applicable FMVSS and SAE J3026 requirements. Documentation from a certified independent testing facility shall be required stating the seat has passed SAE J3026 requirements and tested in accordance with SAE J2917, Occupant Restraint and Equipment Mounting Integrity – Frontal Impact System-Level Ambulance Patient Compartment and SAE J2956, Occupant Restraint and Equipment Mounting Integrity – Side Impact System-Level Ambulance Patient Compartment. The seat shall be padded and covered with color coordinated, cushioned vinyl. \*\*Must Enter Seat as Special and Contact Manufacturer for Pricing\*\*

## **CPR SEAT FIXED - CN8 COMPLIANT**

A CPR seat shall be installed on the street side of the patient compartment aft of the main action area counter. The CPR seat shall be KKK-A-1822F Change Notice 8 compliant with V4 harness style shoulder / seat belt and conform to all applicable FMVSS and SAE J3026 requirements. Documentation from a certified independent testing facility shall be required stating the seat has passed SAE J3026 requirements and tested in accordance with SAE J2917, Occupant Restraint and Equipment Mounting Integrity – Frontal Impact System-Level Ambulance Patient Compartment and SAE J2956, Occupant Restraint and Equipment Mounting Integrity – Side Impact System-Level Ambulance Patient Compartment. A hip pad bolster shall be to the forward side of CPR seat. It shall measure 11" high x 3.5" wide x 13.4" deep. The seat bottom, backrest, headrest, and hip pad bolster of the seat shall be padded and covered with color coordinated, cushioned vinyl.

## **CURB SIDE SLIDING SWIVEL SEAT W/CABINET**

The curb side interior shall have an EVS seat with a V4 harness mounted on a Mobility 1 track. Forward of the sliding attendant seat there shall be a cabinet with an aluminum recessed counter top and two (2) drawers which pull out towards the seat. Both drawers shall be constructed from aluminum with inside dimensions of 4.00h x 12.00w x 13.75d and secured with locking stainless steel flush pull latches.

Below the drawers facing the stretcher there shall be a tip out waste container which will be secured with a locking stainless steel flush pull latch.

## **CABINET CONSTRUCTION - INTERIOR - ALUMINUM**

All interior cabinets shall be constructed of .090" thick welded aluminum. Wood products shall not be used in the construction of any interior cabinet. All cabinet exteriors, interiors, drawer fronts, drawer interiors, and aluminum doors shall be sealed with a washable sprayed-on multi-use polychromatic coating.

## **RECESSED ADJUSTABLE SHELF TRACK - CABINETS**

Unistrut 13/16" x 13/32", 19 gauge channel shall be installed in the interior cabinets that contain adjustable shelves. The track shall be welded in and recessed to reduce the number of fasteners and provide a cleaner look.

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## **CABINET DOORS - CLEAR ACRYLIC**

All sliding cabinet doors shall be nominally 1/4" thick light clear acrylic material. The sliding cabinet doors shall be installed in aluminum track lined with PPL inserts to eliminate rattles and prevent the doors from opening during transit. An edge mounted aluminum handle shall be installed on each sliding cabinet door.

## **CABINETS/ WALLS - POLYCHROMATIC COATING - MARBLE STONE**

All exposed side walls, the partition wall (on the patient compartment side only), the headliner, along with the cabinet and drawer fronts, aluminum doors, cabinet and drawer interiors shall be covered with a washable #99-7371 Marble Stone sprayed-on multi-use polychromatic coating, to create a laminate-free interior.

## **COUNTER TOP - RECESSED ALUMINUM - POLYCHROMATIC SPRAY COATED**

The counter top shall be recessed 3/4" to prevent equipment from sliding off. All counter top work surfaces shall be finished with multi-use poly-chromatic spray coating prior to being clear coated.

## **UPHOLSTERY - SPRADLING "ARCTIC" CHARCOAL #9017**

All cushions, head pads and seats shall be covered with Spradling International "Arctic" Charcoal #9017 expanded vinyl upholstery material. The arctic vinyl and all foam cushion material shall comply with FMVSS #302 flame spread requirements.

## **LONPLATE II, NON-SLIP EMBOSSED SM. GRID - MICA (GRAY) #421**

The floor in the patient compartment shall be covered with Lonseal "Lonplate II" non-slip; small grid (embossed) Mica (gray) #421, resilient sheet vinyl flooring material, which shall be covered 3-inches up the wall on the street side, and to the top of the squad bench base on the curbside. The flooring material shall be stripped and waxed before delivery.

## **ASPIRATOR / SUCTION - SSCOR - WITH ELECTRIC PUMP - RECESSED**

An SSCOR suction system shall be recessed into the street side lower interior wall near the attendant's seat. The system shall be activated by a switch on the attendant control panel. The 12 VDC electric vacuum pump shall be mounted in the standard outside storage compartment. The SSCOR vacuum pump exhaust shall be vented to the exterior of the vehicle.

## **ASSIST HANDLES, (2) 'V' ANTI-MICROBIAL (YELLOW), (4) BLACK U**

A total of six (6) assist handles shall be provided: two (2) 1-1/4" diameter Yellow Anti-microbial stainless steel 'V' handles, one (1) on each rear passage door; and four (4) 10-7/8" black vulcanized rubber with steel core assist handles, two (2) handles at the rear doorway, one (1) at the curbside doorway, and one (1) on the curbside sliding door.

## **COT FASTENER - STRYKER POWER LOAD SYSTEM - CENTER POSITION**

A Stryker Power-LOAD, power-loading cot fastener system (center mount) shall be installed on the module floor to accommodate a Stryker cot. 3/8" thick aluminum tapping plates shall be installed below the aluminum floor to secure the cot fastener system.

## **EMBLEMS / SIGNS - REAR PATIENT COMPARTMENT**

Two (2) "No Smoking / Oxygen Equipped / Fasten Seat Belts" signs shall be provided. One (1) sign shall be installed in the cab and one (1) above the oxygen outlets in the patient compartment street side cabinet.

## **EXHAUST VENTILATOR, 3-SPEED - MULTIPLEX ELECTRIC SYSTEM**

A three-speed, 300 CFM (minimum) exhaust fan meeting KKK-A-1822F requirements shall be provided and located in the street side cabinet in the patient compartment. The exhaust fan shall be pulse width modulated from a switch on the attendant control panel vista screen. The exhaust system shall have a louvered grille inside and a chrome vent outside. The exhaust system shall vent through the side of the vehicle, not through the roof.

## **ZICO QR-D-2 STORAGE BRACKET FOR "D", JUMBO "D" OR STEEL "D" CYLINDER**

Zico #QR-D-2 storage bracket shall be installed for one (1) "D", Jumbo "D", or steel "D" oxygen cylinder in the curb side step well.



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## **FIRE EXTINGUISHER - (1) ABC DRY CHEM 5 LB. WITH BRACKET**

One (1) ABC Dry-Chemical, 5 lb. fire extinguisher and mounting bracket shall be shipped loose with the vehicle.

## **FLOOR CONSTRUCTION- PATIENT COMPARTMENT, NON-WOOD COMPOSITE**

The sub-floor in the patient compartment shall be constructed of .125" thick aluminum over .125" and .190" thick reinforcing hat sections and mounting laterals. The aluminum sub-floor shall be covered with a single piece of 3/4" non-wood composite material. All corner molding, edging and trim shall be anodized aluminum or stainless steel and shall be sealed to prevent fluids from seeping under the cabinets.

## **FLOORING - COVE**

The patient compartment floor radius shall be coved with pre-formed floor coving material. The coving shall be installed behind the vinyl floor covering, along both the street side and curbside walls.

## **GLOVE DISPENSER - (3) BOX - ABOVE ENTRY DOOR - CURBSIDE (ABS)**

A three (3) - box glove dispenser unit, with a clear plexi hinged access panel with three (3) cut-outs, shall be recessed above the curbside entry door. The dispenser shall be 8.25" high x 33.50" wide with interior dimensions of 5.38" high x 30.25" wide x 3.25" deep.

## **GRAB RAILS, 1-1/4" DIAMETER, ANTI-MICROBIAL(YELLOW) 96" AND 64"**

Two (2) 1-1/4" diameter stainless steel, yellow Anti-microbial grab rails shall be installed on the ceiling of the patient compartment. One (1) 64" rail shall be installed over the squad bench area and one (1) 96" rail shall be installed over the patient cot area for attendant/patient balance control. The 96" grab rail will be attached to the ceiling with three (3) mounting brackets that secure it to the super structure of the module. Installation of each grab rail shall comply with AMD-008 requirements.

## **I V HANGERS - CEILING RECESSED - CAST PRODUCTS #IV2008-1 (2)**

Two (2) Cast Products #IV2008-1 recessed, dual, ceiling I.V. hangers shall be provided. One (1) installed near the street side above the cot area, and one (1) near the curbside above the squad bench area.

## **OXYGEN OUTLETS (3) WALL - OHIO MEDICAL TYPE**

Three (3) Ohio Medical flush mounted, quick release wall outlets shall be installed. Two (2) in the forward street side cabinet action are and one (1) shall be installed in the wall above the squad bench.

## **FLOW METER, OXYGEN - THORPE STYLE**

One (1) Thorpe style oxygen flow meter (15LPM) shall be shipped loose with the completed vehicle.

## **OXYGEN SYSTEM, ELECTRIC - MULTIPLEX ELECTRIC SYSTEM**

A 12 VDC controlled electric O2 system operated through the v-mux multiplex electrical system shall be provided and installed.

The oxygen system shall be completely installed and include a pre-set oxygen regulator with a cylinder pressure gauge and a 200 PSI safety valve with all necessary piping and connections. The oxygen system shall be completely low pressure, and the regulator shall be fastened directly to the cylinder. The regulator shall be set to operate at approximately 50 PSI. The oxygen cylinder shall be installed so the system may be easily turned on and off at the main cylinder valve from the patient compartment. The oxygen cylinder shall be provided by the purchaser.

The oxygen system monitor shall be readily available to the attendant while seated at the head of the cot as part of the microprocessor based electrical system. Flexible conductive oxygen hose with a minimum 900 lbs. burst rating shall be installed between the regulator and the oxygen receptacles. The system shall be tested and tagged in conformance with NFPA-56-F and KKK-A-1822F.

The electric oxygen system shall be provided with an on/off switch on the attendant control panel screen. The emergency manual bypass valve shall be located near the oxygen storage compartment in the patient compartment.

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## **PADDED EDGING PROTECTION**

Padded corner edging shall be installed where necessary on exposed corners and edges in the patient compartment for patient and attendant protection.

## **PADS, HEAD AND BACK**

Vinyl upholstered, foam cushioned head/back pads shall be installed as follows: the lower edge of the upper front wall cabinet (above the partition doorway or window), above the rear doors, above the side door, on the street side wall behind and each side of the CPR seat, and on the curbside wall behind the squad bench. The pads shall be covered with a flame retardant color coordinated vinyl upholstery material.

## **RADIO SPEAKERS, REAR HEAD PAD (OEM RADIO & ACP FADER CONTROL)**

Two (2) stereo speakers shall be installed in the head pad over the rear doors. The fader control for the rear speakers shall be provided through the OEM radio and a fader control located in the ACP.

## **SHARPS LOCKING CONTAINER, 5 QT WALL MOUNT IATS**

A 5 QT Locking Sharps Container shall be installed on interior wall of module IATS. Container shall be acrylic and attached with nylon strap / footman loops. Location of container to be determined at preconstruction meeting. Container shall have a biohazard warning label.

## **STAINLESS STEEL WALL PROTECTION - SQUAD BENCH BASE**

A full-length brushed stainless steel panel shall be installed on the face of the squad bench base, and extend up to the bottom of the squad bench lid.

## **DOOR PANELS - MODULE PASSAGE DOORS - FULL LENGTH ALUMINUM - W/ACCESS PANELS**

The inner door panels shall be manufactured from aluminum, and covered with a washable sprayed-on multi-use polychromatic coating. The panels shall run the full length of the door and will contain a removable latch access panel.

## **STAINLESS STEEL WALL PROTECTION - INTERIOR STREETSIDE**

A brushed stainless steel panel shall be provided on the street side wall from the bottom of the CPR seat cushion down to the flooring material to protect this area when the cot is taken in or out of the vehicle.

## **TURTLE TILE - SKID-RESISTANT MAT, CURBSIDE STEPWELL**

Skid resistant charcoal gray turtle tile matting shall be installed in the curbside step well.

## **PATIENT COMPARTMENT - GLOVE BOX HOLDER OVER REAR DOORS**

A three (3) - box glove dispenser unit, with a clear acrylic hinged access panel with three (3) cut-outs, shall be recessed above the curbside entry door. The dispenser shall be 8.25" high x 33.50" wide with interior dimensions of 5.38" high x 30.25" wide x 3.25" deep.

## **PATIENT COMPARTMENT - CABINET - LEFT WALL, LOWER #5 - INSIDE/OUTSIDE ACCESS**

Below the primary action area and forward of the recessed suction unit there shall be a cabinet with inside outside access. The door opening shall be 13.50" high and 21.75" wide. The inside dimensions are the same as OSS #2

## **PATIENT COMPARTMENT - FRONT WALL ABOVE PASS THROUGH**

The front wall shall have a storage compartment above the pass through. The door opening shall be 10.00h x 18.50w. The door shall be a drop down style aluminum door secured with locking stainless steel flush pull latches.

## **PATIENT COMPARTMENT - FRONT WALL BELOW PASS THROUGH**

The front wall shall have two (2) storage drawers below the cab pass through. Directly below the pass through there shall be an aluminum counter surface. Below the counter there shall be two (2) drawers of equal size. The pull out drawers shall be made from aluminum and secured with locking stainless steel flush pull latches. Inside dimensions 8.00h x 16.50w x 16.00d

# Canton Volunteer Fire & EMS

## **PATIENT COMPARTMENT - INSIDE ACCESS TO OSS #4**

On the curb side interior rearward of the attendant seat there shall be a 37.00h x 15.00w opening with a cargo net giving the attendant access to OSS #4.

## **30 MINUTE SPRING WOUND TIMER**

## **PPG PAINT PROCEDURE**

All non-anodized aluminum module body surfaces shall be completely chemically steam cleaned, filled with premium body filler as needed, sanded smooth and primed with F-3993 epoxy primer and then primed again with F-4930 high solid primer.

The cured primer surfacer shall be DA sanded with 320 grit and cleaned with DX-330. F-4930 high solid primer shall then be applied, where needed, as a sealer.

## **PAINT MODULE - OEM WHITE**

The module shall be painted with PPG Delfleet low VOC polyurethane paint, to match the OEM chassis color, at a dry thickness of no less than 2 to 2.5 mils.

## **CLEAR COATING - MODULE PAINT**

The entire module shall be clear-coated, using a PPG process, sprayed over the final paint coat.

## **BUFFING, PAINT - MODULE**

The paint on the module sides shall be buffed to a high shine using a recommended paint buff system.

## **BLACK REFLECTIVE MATERIAL IN RUB RAILS**

Rub rails shall incorporate a 5/8" wide black reflective Scotchlite safety accent stripe.

## **DOOR REFLECTIVITY**

Reflective material (25" x 2.5" red/silver chevron style) meeting FMVSS 108 requirements shall be installed on the lower interior stainless steel panel of each rear door and hinged side door.

If a sliding side door is provided, it shall have a 1.50" x 40.00" white reflective stripe installed on the rear facing edge.

## **KKK-A-1822F COMPLIANCE**

A KKK-A-1822F compliance sticker, electrical load analysis sticker, and payload sticker shall be installed in the oxygen compartment. Any deviations from KKK-A-1822F shall be listed in the vehicle delivery packet with a notation on the compliance sticker.

## **VEHICLE MANUALS (1) PACKAGE SET**

One (1) Delivery Manual Package shall be supplied with the vehicle, and shall include the following items:

- Ambulance manufacturer parts, service and operation manuals
- OEM chassis owner's guide
- Complete 12 VDC and 125 VAC wiring schematics for all included standard and optional systems
- Multiplex Electrical system programming - electronic media

# Canton Volunteer Fire & EMS

## **WARRANTIES**

MANUFACTURER WARRANTIES: The ambulance manufacturer shall provide Warranty coverage as follows:

- A. Structural Module Warranty - Limited Life Time
- B. Ambulance Conversion Warranty - 3 Years/36,000 Miles
- C. Electrical Warranty (Multiplex-based systems) - 7 Years/ 84,000 Miles
- D. PPG Paint Warranty - The pro-rated paint warranty covers the areas of the ambulance body finished with paint products specified by the Manufacturer for a period of seven years from the date of manufacture, or up to 84,000 miles, whichever occurs first. The first four years, or up to 48,000 miles, are covered at 100% parts and labor. The fifth year or up to 60,000 miles, is covered at 75% parts and labor. The sixth and seventh years or up to 84,000 miles, are covered at 50% parts and labor. Paint repairs must be pre-approved by the Manufacturer and performed by the Manufacturer or an Authorized Braun Dealer / Service Center

NOTE: Copies of these Warranties shall be provided to the purchaser in the bid response.

## **GRAPHICS AND LETTERING**

All graphics and lettering to match the existing fleet of ambulances. The graphics package shall include all KKK-A-1822-F required lettering and comply with all regulations of the Connecticut Department of Health.

## **FREIGHT/DELIVERY/TRAINING**

The dealer shall be responsible for providing all shipping and transportation of the ambulance under it's own power from the place of manufacturer to the dealership where the vehicle can will be evaluated by service technicians for any issues which may have arisen during the road trip. The dealer shall also provide delivery of the completed ambulance to the Canton Fire Department at 51 River Road Canton CT.

The dealer shall work with the department training officer to schedule a training program for the members of the department.

## **ADDITIONAL LOOSE EQUIPMENT**

The dealer shall provide:

- Three (3) Streamlight Fire Vulcan Model 44451 lights
- One (1) Stryker 6500-700-049 Power Load cot compatibility kit
- One (1) Stryker Service Technician Installation of 6500-700-049

**SUPPLY  
CONTRACT BOND**

**Bond Number: 929640777**

KNOW ALL MEN BY THESE PRESENTS, That, Braun Industries, Inc. ("Braun") and Bulldog Fire Apparatus, Inc. ("Dealership") (hereafter, Braun and Dealership collectively referred to as the "Principal"), and Western Surety Company, a corporation organized and existing under the laws of the State of South Dakota, (the "Surety") are held and firmly bound unto Town of Canton (hereinafter called the Obligee), in the just and full sum of Two Hundred Fifty Two Thousand Nine Hundred Seventy Two and 00/100 Dollars (\$252,972.00 ) to the payment of which sum, well and truly to be made, the said Principal and Surety bind themselves, and their respective heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Dealership has entered into a certain written contract with the Obligee dated December 12, 2016 to furnish certain ambulance(s) and equipment (collectively referred to the "Equipment") as described in such contract (the "Agreement");

WHEREAS, Braun has entered into a contract with the Dealership on or about December 6, 2016 which obligates Braun to supply and deliver to the Dealership the Equipment that the Dealership is required to deliver to the Obligee under the Agreement;

WHEREAS, the Agreement requires the Dealership to provide a surety bond securing the Dealership's obligation to deliver the Equipment as specified in the Agreement; and

WHEREAS, the Dealership requested Braun to arrange for the delivery of the above referenced surety bond and Braun and the Surety agreed to provide this Bond in satisfaction of such request.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if either Principal shall deliver the Equipment as required under the Agreement or fully indemnify and reimburse the Obligee for any loss that it may suffer through the failure of the Principal to furnish such Equipment, then this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, the obligations arising under this Bond are limited solely to the Equipment delivery obligations set forth in the Agreement and this Bond shall not secure any other obligations that the Dealership may have under the Agreement;

PROVIDED, HOWEVER, it shall be a condition precedent to any right of recovery hereunder, that in event of any default on the part of the Principal to deliver the Equipment as required under the Agreement, a written statement of the particular facts showing the date and nature of such default shall be immediately delivered to the Surety at the address below:

CNA Surety  
Attention: Surety Claims Department  
333 South Wabash Avenue, 41st Floor  
Chicago, Illinois 60604  
with a copy to: [claims@cnasurety.com](mailto:claims@cnasurety.com)

AND PROVIDED FURTHER that no action, suit or proceeding shall be had or maintained against the Surety on this instrument unless the same be brought or instituted and process served upon the Surety within six months after all Equipment that are to be furnished by the terms of the Agreement have been furnished; nor, in any event, shall any action, suit or proceeding be had or maintained against the Surety on this instrument, unless the same be brought or instituted and process served upon the Surety prior to the expiration of one year from the date fixed in said Agreement for delivery of the Equipment.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this  
16<sup>th</sup> day of December, 2016.

Braun Industries, Inc., Principal

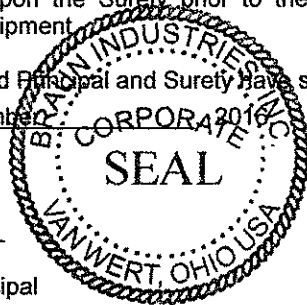
By: Kim Braun

Bulldog Fire Apparatus, Inc. Principal

By: \_\_\_\_\_

Western Surety Company, Surety

By: Deborah L. Burton, Attorney-in-Fact  
Deborah L. Burton





# Western Surety Company

## POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

**Deborah L. Burton , Individually**

of **Louisville, KY** its true and lawful Attorney-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

**- In Unlimited Amounts -**

Surety Bond No: 929640777

Principal: Braun Industries, Inc.

Obligee: Town of Canton

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 1st day of December, 2015.



WESTERN SURETY COMPANY

Paul T. Bruflat, Vice President

State of South Dakota }  
County of Minnehaha } ss

On this 1st day of December, 2015, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires

June 23, 2021



J. Mohr, Notary Public

### CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 16th day of December, 2016.



WESTERN SURETY COMPANY

L. Nelson, Assistant Secretary





**Authorizing By-Law**

**ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY**

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

