

Bid specifications – Light Rescue Vehicle – Benton Fire Department

SERVICE CAPABILITY

In order to provide the proper service required for the vehicle we intend to purchase, each bidder shall provide support through a service center which is located no more than 25 miles from the City of Benton.

CHASSIS SPECIFICATIONS

Dodge 5500 Crew Cab
SL Trim Package
Cummins 6.7 Liter ISB Diesel Engine
Diesel Exhaust Brake
6 speed automatic
4x4 with manual shift selector
305 HP
Dual Rear Wheels
4 Door – 5 man cab
Red in Color
GVWR 19,500 lbs
84” CA
Dana S111 Rear Axle
Limited Slip 4.88 Rear Axle Ratio
52 Gallon Fuel Tank
4 Wheel ABS All Disc Brakes
Dual Batteries
Factory Dodge Polished Aluminum Wheels
Work Truck Package with Vinyl Flooring
AM/FM/CD Radio
Chrome Front Bumper
Chrome Grille
Power Windows and Locks
A/C and Heat
Cruise control
Driver and Passenger Side Air Bags
12 Volt Power Outlet
Hi-Back front bucket seats
Bench rear seat
Power Steering
Trailer Tow Mirrors
Trailer Brake Control
Transmission Skid Plate

Battery Monitoring System with Auto Idle Up
220 amp alternator

SEATING AND WEIGHT ALLOWANCE

A warning label shall be installed in the cab to indicate seating positions for five (5) people. A weight allowance of 250 pounds shall be calculated for each person.

DATA PLAQUE

A data plaque shall be provided and installed on the inside of driver's door. The data plaque shall contain the required information based on the applicable components for the apparatus, applicable to the applicable NFPA standards:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Drive axle lubricant
- Power steering fluid
- Pump, generator, or other component lubrications
- Other NFPA applicable fluid levels or data as required
- Paint manufacturer, type, and color number

Location shall be in the driver's compartment or on driver's door.

DIMENSION DATA LABEL

The cab dash area shall have an apparatus dimension label installed. The label shall be highly visible, indicating the overall height, length, width and weight of the vehicle.

WARNING LABEL -- NO RIDING ON REAR

A warning label stating: "NO RIDING ON REAR OF APPARATUS" shall be installed on rear of the apparatus. The label shall be applied to the vehicle at the rear step area. The label shall warn personnel that riding in or on these areas, while the vehicle is in motion, is prohibited.

WARNING LABEL -- SEAT BELT USEAGE

A warning label, stating: "DANGER- Personnel Must Be Seated And Seat Belts Must Be Fastened While Vehicle Is In Motion Or DEATH OR SERIOUS INJURY MAY RESULT" shall be provided in the apparatus cab interior. This label shall be located so that it is visible from all seating positions.

VEHICLE FINAL STAGE MANUFACTURER LABEL

A final stage manufacturer label shall be installed by the fire apparatus body manufacturer in compliance to applicable motor vehicle standards.

REQUIRED LABELS

1. Type of Fuel Label: A “Diesel Fuel Only” label shall be attached to fuel fill access door.
2. Additional Labels: All labels, signs, name plates and instruction plates shall be permanent in nature with the information permanently engraved, stamped, or etched thereon. Labels, signs and name plates to be installed with plated screws. All labels are to be mounted in a conspicuous place.

REAR TOW HOOKS

Two (2) chrome plated or stainless steel bolt-on tow hooks shall be installed at the rear of the chassis mounted in recessed aluminum tread plate enclosures.

REAR MUD FLAPS

Black mud flaps shall be installed behind the rear wheels.

CAB STEPS

The cab steps shall be equipped with chrome plated piping to form a step assembly under the cab doors, mounted one each side of the cab.

CAB DOOR REFLECTIVE PANELS

The cab doors shall have NFPA compliant reflective panels installed.

TIRE AIR PRESSURE INDICATING CAPS

All tires and wheels shall be equipped with a tire air pressure indicating system with a monitoring device at wheel areas and installed in compliance with applicable NFPA standards. The final stage manufacturer shall install a label at each fender area to denote the in-service air pressure (this label pressure could be variable with the future unknown loading of vehicle.)

RESCUE BODY DESIGN AND CONSTRUCTION SPECIFICATIONS

The apparatus body shall be all aluminum constructed with extruded radii, ball corners and corner posts. The body shall have seven (7) exterior compartments. After fabrication in a body fixture, the unit shall be mounted on the specified chassis. The entire body assembly shall have a ten (10) year structural warranty.

The apparatus body shall be constructed of aluminum extrusions and .125" Type #5052-H32 alloy aluminum plate specifically designed for fire and rescue applications. The body shall be designed and engineered specifically for emergency vehicles and shall be built to meet the duty cycle for fire and rescue services. A body using modified stamped aluminum bodies designed for commercial purposes other than emergency response shall not be acceptable.

The apparatus body shall be welded construction for maximum strength and integrity for the entire life of the apparatus. The sub-body structural aluminum extrusions shall be integrated with the exterior body radii and sheet metal for a reinforced type body construction. The structural extrusions shall be Type #6061 and heat tempered to T-6 hardness. The aluminum shapes shall be designed with a force fit interlock system that shall eliminate any vibration or separation when sheets are inserted and welded to the structural members.

Fabricated bodies without 3" radius corner extrusions shall not be acceptable. The ceiling of the compartments shall be free of structural members and shall be a separate panel from the roof surface.

Body Sub-Structure

The body sub-structure shall consist of 3" channels and 2" x 2" x .125" structural 6063-T6 aluminum tubing located on 12 inch centers and shall extend the full width of the body between compartment walls. The compartment floor support tubes shall be welded to the structure channels and tubing.

Body Mounting System

The body shall be mounted on 3" wide hard rubber or UHMW polymer over the chassis frame rails. The body shall be mounted to the chassis 5/8" steel "U" bolts and spring assemblies per the chassis manufacturer's guidelines. The body shall be capable of being removed from and transferred to a new chassis.

Roof Construction

The roof structure shall consist of 2" x 2" Type #5052-H32 aluminum structural "Z" sections that shall span the full width of the body. The roof structural tubes shall be welded to the aluminum roof surface and to the inner structural connector of the radius. The roof surface shall be completely welded to the roof radius, with no caulking or screws shall be utilized.

The roof radius shall be an extruded aluminum radius of Type #6061-T6 with an ultimate strength of 42,000 PSI. The shape shall be a 3" inch radius with a built in inner structural connector to form a one piece side and roof structure. The radius shall be semi-hollow shape for strength, reduced weight and to also allow passage for electrical wires. The roof and side sheets shall fit into the roof radius and shall be welded from the inside of the body.

Exterior Body and Compartment Construction

The exterior walls shall be constructed of Type #5052-H32 heat-treated .125" aluminum plate that shall be stretch

leveled to a tolerance of 0.003. The exterior wall shall interlock into place with corner extrusions. The corner radius shall be of the same heavy construction as the roof radius, except there shall be no built in drip molding. The corner radius shall be a three inch radius. All corners shall be semi hollow extruded shapes for structural strength and shall give a smooth exterior appearance without bending or forming sheet metal.

The floor, roof, and sidewalls shall be of cage construction that is built to form an independent structure which shall be self standing and rigid. The body shall then be mounted. No chassis building shall be required or permitted.

The sides shall be constructed with four corner vertical and horizontal radii with ball corners. All body radii shall be 3" arc shape with interlock edges on both sides. The extrusions shall be of an alloy of Type #6063 with a heat-treated temper of T-6. The corner and roof shall be designed to work as a system that has a double gusset connector in each corner joint. The roof, corner, and sides shall be of all welded construction; no rivets are required or permitted.

The body sides shall be fixture assembled and slide-in panel locked construction. The fixture design shall hold the corners and body side panels in place, with inner Type #6063-T6 aluminum extrusions welded place for extra reinforcement. The roof members shall be located 12 inches on centers and welded to the roof extrusions, inner structural connector to the roof members.

The exterior panels shall interlock with the roof and corner radii and specially designed compartment door frame aluminum extrusions constructed of Type #6063-T6 material. The door frame shall be designed to provide for maximum clear door openings. The door frame shall be a .250" thick aluminum extrusion. The doorframe shall have an exterior trim edge that shall channel water away from the compartment opening.

Interior Body and Compartment Construction

All exterior compartments walls, floors, and ceilings shall be constructed of .125" Type #5052-H32 alloy smooth aluminum plate. Compartments shall be of all welded construction with continuous welding in critical structural areas and strip welding on 6" centers in non-critical areas.

Compartment Floor Construction

The compartment floors shall be .125" #5052-H32 aluminum with a "lip free" and sweep out construction, which shall permit easy cleaning of the compartments. Floor drains shall be provided in the two rear corners of the compartments. The front entrance to the compartment shall have a 2" deep x 1" high recess break for compartment doors. The compartment floors shall have a .125" aluminum hat section on the underside for reinforcement. This unit shall be welded in place and shall be a minimum of 2" x 4" in size.

WHEEL WELL PANEL CONSTRUCTION

The wheel well panel surface above the rear body fenders shall be aluminum diamond plate for protection from mechanical damage.

WHEEL WELL LINERS

Wheel well liners designed to protect the body from impact resulting from road debris thrown by the tires shall be installed. The wheel well shall be provided with full fender liners that shall be formed so as to eliminate pockets that might trap and collect road dirt.

REAR WHEEL FENDERETTES

The wheel well openings shall be of sufficient opening to permit the utilization of tire chains or other traction devices. Polished aluminum fenderettes shall be installed at each rear wheel opening. The fenderettes shall be positioned outside of the wheel well panel to cover the tire area that extends past the body. The fenderettes shall be secured with threaded fasteners.

FUEL FILL ACCESS

An access opening designed to accommodate a Cast Products fuel fill assembly and angled insert shall be provided in the left side wheel well area.

RUB RAILS

The sides of the lower body area fore and aft of the wheel well area shall be provided with 3" x 1.5" x .250" extruded aluminum rub rails, with end caps or angle corners. The rub rails shall be equipped with red and white DOT type reflective striping.

PROTECTIVE COVERING -- FRONT BODY

The entire front of the apparatus body shall have a protective covering installed. The covering shall be constructed of aluminum tread plate material.

FRONT CORNERS -- PROTECTIVE COVERING

The front corners of the apparatus body shall have aluminum tread plate material installed.

REAR BODY PANELS

The rear of the exterior body panels shall be smooth painted aluminum surface.

LOWER REAR HORIZONTAL KICK PLATE

The lower rear of the apparatus body shall have kick plate installed. The panel shall be constructed of aluminum tread plate material secured with stainless steel fasteners.

VENTILATION LOUVERS -- EXTERIOR COMPARTMENTS

The exterior body compartments shall be equipped with 4" x 6" louvers mounted inside of each compartment; to permit the passage of moisture or hazardous vapors into and out of compartments.

COMPARTMENT FLOOR DRAINS

The exterior compartments shall be provided with rear corner floor drains to the underside of the body.

ROLL-UP COMPARTMENT DOOR SPECIFICATIONS

The compartments shall be equipped with custom-built Hansen International Inc. roll-up doors. The doors shall be produced by an ISO-9001 certified company and tested to at least 100,000 cycles. Each door shall have a serial number label and shall carry warranty of seven (7) years.

Door Construction: The doors shall be constructed of double walled and concave hard anodized aluminum extrusion laths with a "satin" exterior surface. Each door slat shall have dimensions of 1.365" in height, 0.310" deep, 0.038" wall thickness. The "interlocking joint knuckle" extrusion design shall have an integral dual durometer extruded synthetic spacer seal to reduce noise and prevent weather or debris intrusion in a closed position. Each door lath shall have inter-locking and nested polymer slide guides. Slide guides shall be punch dimpled to prevent 'metal to metal' contact and shall be replaceable. Sides of the door openings shall be equipped with single piece 0.069" hard anodized aluminum extruded vertical guide channels.

Operating Components: The easy opening doors shall be equipped with a pre-tensioned internally lubricated counterbalance spring contained within a 0.060" x 4" diameter aluminum door roller tube and supported with a .625" diameter steel center shaft. The roller assembly and shaft shall be supported with two (2) pre-assembled and adjustable mounting plates of 0.060" zinc plated steel. The mounting plates shall have dual synthetic molded roller wheels that shall support the door above the guide channels as it is fed onto the roller tube counterbalance for storage. The door curtain assembly shall be attached to the roller tube counterbalance with woven nylon straps with quick detach steel mounting clips.

Door Handle and Latching: The heavy duty lift and door handle bar assembly shall be constructed with two (2) 0.060" hard anodized aluminum extrusion panels. The lift handle bar assembly shall have four (4) roller wheels to reduce friction and ease opening of door. The handle assembly shall be equipped with a 2" horizontal full width shelf with anti-slip ribbing on top to assist door closing. The shelf shall have two (2) riveted heavy duty rubber bumpers to prevent a metal to metal impact with the overhead drip rail. The latch bar shall consist of a full width .750" diameter stainless steel tube handle with centrally located knurled anti-slip sections and 1.25" hand clearance between handle and the door surface.

Weather Resistance: The top door drip rail shall be a hard anodized aluminum extrusion and shall contain a full width strip of weather seal to minimize water ingress along the top of the door. Guide channel seals shall be replaceable and constructed of UV resistant rubber with automotive style flocking material for smoothness of operation. The bottom of the door curtain shall have an additional full width UV resistant rubber seal.

Seven (7) roll up doors shall be installed.

REAR STEP

An 8" deep step shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The tailboard shall be constructed of aluminum diamond plate non-slip surface in compliance with NFPA standards. The maximum height of the step assembly shall be no more than 24" from the ground when the apparatus is in the loaded condition. A label shall be provided warning personnel that riding on the rear step while the apparatus is in motion is prohibited.

HANDRAIL -- REAR STEP

Two (2) extruded aluminum non-slip handrails, approximately 30" in length, shall be provided and mounted on the rear of the apparatus, one (1) on each side of the body.

COMPARTMENT DIMENSIONS

LEFT SIDE BODY COMPARTMENTS

Compartment #L-1T

The left side forward transverse compartment shall have the approximate dimensions of 57" wide x 72" high x 23" deep at floor and 96" deep over frame, with a door opening of 52.5" wide x 57.5" high.

Equipment Layout and Mounting Provisions

1. Adjustable tracks shall be installed with tracks on each side wall.

Compartment #L-2T

The left side over wheel well transverse compartment shall have the approximate dimensions of 49" wide x 45" high x 96" deep, with a door opening of 42.5" wide x 34.5" high.

Equipment Layout and Mounting Provisions

1. Adjustable tracks shall be installed with tracks on each side wall.

Compartment #L-3

The left side rear compartment shall have the approximate dimensions of 33" wide x 72" high x 23" deep, with a door opening of 28.5" wide x 57.5" high.

Equipment Layout and Mounting Provisions

1. Four (4) adjustable tracks shall be installed, with two (2) tracks on each side wall.

RIGHT SIDE BODY COMPARTMENTS

Compartment #R-1T

The right side forward transverse compartment shall have the approximate dimensions of 57" wide x 72" high x 23" deep at floor and 96" deep over frame, with a door opening of 52.5" wide x 57.5" high.

Equipment Layout and Mounting Provisions

1. Adjustable tracks shall be installed with tracks on each side wall.

Compartment #R-2T

The right side over wheel well transverse compartment shall have the approximate dimensions of 49" wide x 45" high x 96" deep, with a door opening of 42.5" wide x 34.5" high.

Equipment Layout and Mounting Provisions

1. Adjustable tracks shall be installed with tracks on each side wall.

Compartment #R-3

The right side rear compartment shall have the approximate dimensions of 33" wide x 72" high x 23" deep, with a door opening of 28.5" wide x 57.5" high.

Equipment Layout and Mounting Provisions

1. Four (4) adjustable tracks shall be installed, with two (2) tracks on each side wall.

Rear Compartment #RR-1

The rear compartment shall be located above the frame rails and have dimensions of 50" wide x 53" high x 33" deep, with a door opening of 48" wide x 42.5" high.

Equipment Layout and Mounting Provisions

1. Four (4) adjustable tracks shall be installed, with two (2) tracks on each side wall.

ADJUSTABLE TRACKING -- COMPARTMENT EQUIPMENT MOUNTING

Adjustable aluminum equipment mounting tracks shall be installed inside the compartments with channels on the left and right walls. The tracks shall be positioned to provide support for equipment mounting. The length of the tracks shall be sized to allow for optimum use of the compartment interior.

(2) ADJUSTABLE SHELVES -- 24" DEEP

Adjustable shelves shall be constructed of .188" thick #3003 smooth aluminum plate and be mounted in specified compartments with double bolt cast aluminum shelf brackets. Each shelf shall have a broken front edge, and a broken rear edge for added strength and reinforcement.

The location shall be in R3 compartment and in the B1 compartment above the roll-out tray.

(2) 600# ROLLOUT TRAY -- 24-30" DEEP

A SLIDEMASTER Model SM3-MP rollout equipment tray shall be installed in the specified compartment. The 600# rated tracks shall have sealed roller bearings with steel angle framework and powder coated. The tray shall be constructed of .188" smooth aluminum plate, with a full width double channel lip on front edge to form a pull out handle. The unit shall roll fully out of the compartment, and equipped with a locking device to hold tray in both the "in and out" positions.

The location shall be floor mounted in B1 compartment and floor mounted in the R3 compartment.

600# ROLLOUT TRAYS -- 44" DEEP

A SLIDEMASTER Model SM3-MP rollout equipment tray shall be installed in the specified compartment. The 600# rated tracks shall have sealed roller bearings with steel angle framework and powder coated. The tray shall be constructed of .188" smooth aluminum plate, with a full width double channel lip on front edge to form a pull out handle. The unit shall roll fully out of the compartment, and equipped with a locking device to hold tray in both the "in and out" positions.

The location shall be Floor mounted in L1 compartment. Full width.

BACK BOARD AND STOKES BASKET SLIDE-IN MODULE

A horizontally mounted slide-in back board and stokes basket module shall be installed in the specified compartment. The module shall be constructed of .125" aluminum. The unit shall be approximately 26" wide x 76" deep x 18" high. (with slots for two (2) back boards and one (1) stretcher which shall be supplied by the fire department). Location shall be high in L1/R1 transverse compartment.

(2) 250# ROLL-OUT ALUMINUM TOOL BOARD -- 44" DEEP

A roll-out vertical tool board assembly with powder coated steel tracks. The vertical tool board panel shall be constructed of .250" smooth aluminum. The panel shall be mounted on 250# slide steel tracks, to fully slide in and out of the compartment with a locking device for the "in" and "out" positions. The tool board shall have channel type front vertical edge to form a pull out handle.

The location shall be (2) in L2 and (1) in R2.

PIKE POLE BOX ROOF MOUNTED

A horizontally mounted slide-in pike pole storage module shall be installed on top of the body. This aluminum treadplate box will have a drop down door at the rear and a storage area for two (2) 10' pike poles.

12 VOLT ELECTRICAL SPECIFICATIONS

The following describes the low voltage electrical system on the apparatus including all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The apparatus manufacturer shall conform to the latest Federal DOT standards, current automotive electrical system standards and the applicable requirements of the NFPA.

Wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for which the circuit is protected. Voltage drops shall not exceed 10 percent in all wiring from the power source to the using device. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. Exposed wiring shall be run in a loom with a minimum 289 degree Fahrenheit rating. Wiring looms shall be properly supported and attached to body members. Electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

All wiring connections and terminations shall provide positive mechanical and electrical connections and be installed in accordance with the device manufacturer's instructions. When wiring passes through metal panels, electrical connections shall be with mechanical type fasteners and rubber grommets

Wiring between cab and body shall be split using Deutsche type connectors or enclosed in a terminal junction panel allowing body removal with minimal impact on the apparatus electrical system. Connections shall be crimp-type with heat shrink tubing with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather resistant connectors shall be provided throughout the system.

Electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions.

When required, automatic reset breakers and relays shall be housed in the main body junction panel.

There shall be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless enclosed in an electrical junction box or covered with a removable electrical panel. Wiring shall be secured in place and protected against heat, liquid contaminants and damage and shall be uniquely identified color coding or permanent marking and identified on a reference chart or electrical wiring schematic per requirements of applicable NFPA standards.

Low voltage overcurrent protective devices shall be provided for the electrical circuits. The devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. Overcurrent protection devices shall be automatic reset type suitable for electrical equipment and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. Electro-magnetic interference suppression shall be provided in the system as required in applicable SAE standards.

The electrical system shall include the following:

- Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. All terminal plugs located outside of the cab or body shall be treated with a corrosion preventative compound.
- All electrical wiring shall be placed in a protective loom or be harnessed.
- Exposed connections shall be protected by heat shrink material and sealed connectors.
- Large fender washers shall be used when fastening equipment to the underside of the cab roof and all holes made in the roof shall be caulked with silicone.
- Electrical components installed in exposed areas shall be mounted in a manner that will not allow moisture to accumulate inside.
- A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.
- All lights in a weather exposed area that have their sockets shall have corrosion preventative compound added to the socket terminal area.
- Warning lights shall be switched in the chassis cab with labeled rocker type switches located in an accessible location. Individual rocker switches shall be provided only for warning lights provided exceeding the minimum level of warning lights in either the stationary or moving modes. All electrical equipment switches shall be appropriately identified as to their function and mounted on a switch panel mounted in the cab convenient to the operator. For easy nighttime operation, an integral indicator light shall be provided to indicate when a circuit is energized.

A single warning light switch shall activate all required warning lights. This switch will allow the vehicle to respond to an emergency "calling for the right of way". When the parking brake is activated, a "blocking the right

of way" system shall be automatically activated per NFPA requirements. "Clear" warning lights shall be automatically shed on actuation of parking brake.

Upon completion of the vehicle and prior to delivery, the apparatus shall be electrically tested and the electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of NFPA.

ELECTRICAL WIRING AND HARNESS

The body shall be pre-wired with various electrical harnesses and conduits. The 12 volt electrical wiring shall be function coded and enclosed in split loom conduits, suitably secured and protected against heat and physical damage. All wiring shall be of the type and sized according to circuit load. All connection to be of a crimp type with heat shrink insulator where required.

The electrical system shall be divided into separate harnesses. The individual harness shall be connected to the electrical box with Deutsch quick connectors. The apparatus lighting shall be protected by automatic circuit breakers and/or relays. The electrical power to all apparatus lighting and accessories shall be supplied by an ignition activated solenoid.

CUSTOM FABRICATED CONSOLE AND SWITCH PANEL

A custom fabricated electrical console and enclosure shall be located between the driver and officer.

CONTROL PANEL, LOAD MANAGER, HIGH IDLE, AND LOAD SEQUENCING

The electrical system shall be equipped with TST 10-TEK multi-plex switching and control system. The unit shall control six (6) 20 amp and four (4) 30 amp circuits with a capacity up to 130 amps, relay functions, ten (10) button control switch panel. Selectable switching programming shall be installed for all switches on the panel, including momentary, latching, sequencing or non-sequencing modes. Switching mode is easily selectable through DIP switch settings in the Power Distribution Center (PDC) module.

Status LEDs are provided for each circuit and the microprocessor. Circuit protection at each relay location shall also be provided. The control panel shall have distinctive conductive rubber buttons and customizable graphic legend inserts identify switch functions to the user. These easy-to-use backlit switches change color when activated.

The following features shall be provided:

- Multiplex control system
- (4) 30-amp relay controlled outputs
- (6) 20-amp relay controlled outputs
- Replaceable fuses
- Full LED diagnostics on all inputs and outputs
- Interchangeable legend inserts from front of panel for every switch
- Maximum continuous current, 130 amps

- Independent backlight brightness control
- Programmable sequencing
- Programmable load management functionality with selectable threshold
- High-idle functionality

Sequencing

Two programmable sequencing modes shall be provided with a respond mode sequencing and on-scene mode sequencing. A switch programmed for response mode shall sequence on and off automatically when switch one is turned on or off. If a normally sequenced switch is manually turned on, sequencing will not turn off that switch.

Switches programmed for on-scene mode will only turn on if automatic sequencing is enabled and the vehicle has been placed in park/neutral while already sequenced up in the response mode. This allows for an automatic change from response mode outputs to on-scene mode outputs when the vehicle is placed in park/neutral. Once in the on-scene mode, if the vehicle is taken out of park/neutral the response mode switches will sequence on, and the on-scene mode switches will sequence off.

Load management

The system shall provide for load management functionality to prevent excessive system loading from turning off critical equipment, or damaging the battery. Load management shall only function when the vehicle is in park/neutral. The load management system shall include:

- a) External Alarm Output
- b) Low Voltage Diagnostic LED
- c) Switch Panel low voltage alarm

High Idle Function

The control system shall include a switch/relay to operate automatic high idle output. The high idle switch shall only function if the vehicle is in park/neutral, and the brake is not pressed. If the high idle output is on and the brake is pressed, or the vehicle goes out of park/neutral the system shall be disengaged. Upon the brake being removed and the vehicle going back into park/neutral, the switch will return to its previous state.

Additional System Functionality

- High/low voltage alarm function.
- Programming menu allows selection of pursuit mode switches, on-scene mode switches, and switches to be load managed, including programming for on-scene and response modes and programming load management.
- Switch Panel Backlight Brightness Adjust
- Diagnostic LEDs
- Output Protection
- Panel Power Fuse

BATTERY SWITCH - MASTER DISCONNECT

A battery cutoff switch shall be provided in the cab within easy reach of the driver. The switch shall be a Cole Hersee brand, Model #CH-2484-16 with a Model #82065 switch plate Off/On label. The switch shall be rated for 175 amps continuous duty and 800 amps at intermittent duty.

BATTERY CHARGER

A Kussmaul Autocharge 1000 model #091-56-12, high output automatic battery charger shall be provided. The battery charger shall be wired to the 12 volt battery system. The unit shall be mounted in a clean, dry area accessible for service and/or maintenance. It shall be wired to the specified shore power receptacle.

120 VOLT SHORE POWER RECEPTACLE

A Kussmaul model 091-55-20-120 20 amp "auto-eject" shore power receptacle shall be provided with hinged weatherproof cover and an enclosure for protection from road dirt and damage. The shore power plug shall be "ejected" when the chassis engine starter is engaged and the receptacle shall be wired to any 120 volt A/C equipment requiring shore power. Location shall be:

IDENTIFICATION LIGHTS

All LED identification lights shall be installed on the vehicle as required by applicable DOT highway regulations.

LICENSE PLATE BRACKET

A CPI license plate bracket with LED light shall be provided at the rear of the apparatus.

TAIL, STOP, TURN, AND BACK-UP LIGHT ASSEMBLIES

Two (2) Whelen 4" x 6" LED tail-stop-turn-backup light assemblies shall be installed. The lights shall be mounted in bright bezel and installed at rear of the body

- a) Red tail and stop lights
- b) Amber turn signals
- c) Back-up lights

TAIL AND LOWER WARNING LIGHT BEZELS

Two (2) Whelen Model #PLAST3V, 4" x 6" tail light assemblies shall be provided for three (3) lights. The assembly shall be constructed of ABS plastic with a chrome plated finish. The kit shall include mounting screws

and a Santoprene rubber gasket for vertical installation. The total overall dimensions of the lamp housing shall be 15-7/16" high x 7-3/8" wide x 2-3/8" deep.

(4) WHELEN PFP2 12V LED LIGHTS

Four (4) Whelen Model Whelen PFP2 recessed 12 volt LED lights shall be installed on the vehicle. The locations shall be:

- One (1) centered in front of body
- One (1) centered in rear of body
- One (1) each side at forward corner of body.

CAB GROUND LIGHTS

Four (4) LED ground lights shall be installed under the cab step area in compliance with NFPA standards activated with parking brake.

GROUND LIGHTS - UNDER REAR STEP

Two (2) LED ground lights shall be installed under the rear step area, one on each side of the apparatus, wired to parking brake circuit.

REAR STEP LIGHTS

Two (2) LED step lights with clear lens shall be installed at the rear step of the apparatus body, wired to parking brake circuit.

SCENE LIGHTS

Two (2) Whelen Model #6SC0ENZR, 4" x 6" surface mount scene lights shall be provided. The lights shall be installed in 6EFLANGE bezels. The lights shall incorporate twelve (12) clear LED's with a clear optic polycarbonate lens for maximum illumination. Location shall be:

One (1) switch shall be installed in the cab to activate all scene lights.

COMPARTMENT LIGHTING

Seven (7) compartments equipped with Vista strip LED lights, installed one side of door opening.

COMPARTMENT LIGHT SWITCHES

The exterior compartment lights shall be automatically controlled by a door activated "On-Off" switch.

"DOOR OPEN" OR EQUIPMENT OPERATION WARNING LIGHT

A "door open" or equipment operation warning light shall be installed on cab dash. The light shall be flashing LED light with a red lens.

BACKUP ALARM

One (1) Federal Signal Model #210339 Evacuator single function back-up alarm shall be provided. The back-up alarm shall have a glass reinforced nylon housing for long-lasting durability and shall produce 97 dB.

ELECTRONIC SIREN

Whelen Model #295SL100, self-contained electronic siren amplifier shall be provided. The heavy duty 100/200 watt, six (6) function siren shall have the following features: hands-free operation, public address, park kill, push to talk, and radio re-broadcast.

SIREN SPEAKER

One (1) Whelen Model #SA314P Projector Series siren speaker shall be provided with SABKT9 bracket. The 100 watt siren speaker shall be designed in a black nylon composite housing with 123 decibel rating. Location shall be:

ZONE A -- UPPER LIGHTBAR

One (1) Whelen Freedom Model #FN55QLED Super-LED NFPA lightbar shall be provided. The 55" lightbar shall be designed to meet the minimum clearing requirements for Zone A Upper. The internal components of the lightbar shall be housed within a rugged extruded aluminum I-beam. The outer shell shall be clear optic polycarbonate lenses designed to maximize light output and shield against environmental elements.

The lightbar shall have all solid state components. The lightbar shall utilize snap-in brackets to hold in the lighthoods. The brackets shall give the end user the ability to make quick repairs. The lightbar shall have two wire harnesses exiting the lightbar: one (1) 17 conductor 22 gauge control cable which controls all internal light functions; and one (1) 2 conductor 10 gauge cable for main power and ground. Each cable shall be 15' long.

The lightbar shall have two (2) red Linear Super-LED corner modules to provide off angle protection for the front of the vehicle. Each corner module shall consist of twelve (12) Super-LEDs mounted within a single dual (over/under) vacuum metalized parabolic reflector for maximum light output. The twelve (12) LEDs shall be mounted in two straight lines of 6 LEDs each (over/under) for maximum light output.

There shall be six (6) 400 Series Linear Super-LEDs: two (2) red and two (2) white front facing, and two (2) red located in the alley positions. Each 400 Series module shall consist of a minimum of twelve (12) Super-LEDs mounted within a single dual (over/under) reflector. The reflector shall utilize a vacuum metalized parabolic reflector and two optic collimators for superior light output.

The solid state I/O board shall be microprocessor controlled. The I/O board shall have built-in reverse-polarity

protection and output-short protection. The board shall have the ability to flash sixteen (16) LED warning lights. There shall be a data bank of 13 Scan-Lock flash patterns including steady burn. The board shall also have outputs to add takedown and alley lights. Low power and cruise light function shall also be included. The cruise light function shall allow the user to use the four (4) corner modules as marker courtesy lights.

ZONE A -- LOWER FRONT WARNING LIGHT

Two (2) Whelen 400 Series Model #40R02ZRR, 3" x 4" warning lights shall be installed in front grill area. The solid state warning lights shall incorporate Linear Super-LED technology. The lighthouse configuration shall be designed with four (4) red Super-LED's with red optic polycarbonate lens. The lighthouse shall utilize a hybrid TIR optic reflector and chrome vacuum metallized reflector for maximum illumination. The light shall include eleven (11) internal Scan-Lock flash patterns including steady burn, and synchronize functions.

ZONE B and D -- LOWER FRONT INTERSECTION WARNING LIGHT

Two (2) Whelen 400 Series Model #40R02ZRR, 3" x 4" warning lights shall be installed one each side at front bumper extension or on front fenders. The solid state warning lights shall incorporate Linear Super-LED technology. The lighthouse configuration shall be designed with four (4) red Super-LED's with red optic polycarbonate lens. The lighthouse shall utilize a hybrid TIR optic reflector and chrome vacuum metallized reflector for maximum illumination. The light shall include eleven (11) internal Scan-Lock flash patterns including steady burn, and synchronize functions.

ZONE B and D -- LOWER MID-BODY WARNING LIGHTS

Two (2) Whelen 400 Series Model #40R02ZRR, 3" x 4" warning lights shall be installed one each side body wheel well areas. The solid state warning lights shall incorporate Linear Super-LED technology. The lighthouse configuration shall be designed with four (4) red Super-LED's with red optic polycarbonate lens. The lighthouse shall utilize a hybrid TIR optic reflector and chrome vacuum metallized reflector for maximum illumination. The light shall include eleven (11) internal Scan-Lock flash patterns including steady burn, and synchronize functions.

ZONE B AND D -- UPPER SIDE FRONT WARNING LIGHTS

Two (2) Whelen Series 600 Model #60R02FRR, 4" x 6" warning lights shall be installed. The warning lights shall be located one (1) each side high on the body, as far forward as possible. The warning lights shall incorporate Linear-Super LED and Smart LED technology. The lighthouse configuration shall be designed with eight (8) red Super-LEDs with a red optic polycarbonate lens. The lighthouses shall utilize a hybrid TIR optic reflector and chrome vacuum metallized reflector for maximum illumination. The lighthouse shall include fourteen (14) internal Scan-Lock flash patterns including steady burn and High/Low power functions.

ZONE B AND D -- UPPER SIDE REAR WARNING LIGHTS

Two (2) Whelen Series 600 Model #60R02FRR, 4" x 6" warning lights shall be installed. The warning lights shall be located one (1) each side high on the body, as far rearward as possible. The warning lights shall incorporate Linear-Super LED and Smart LED technology. The lighthouse configuration shall be designed with eight (8) red

Super-LEDs with a red optic polycarbonate lens. The lighthoods shall utilize a hybrid TIR optic reflector and chrome vacuum metallized reflector for maximum illumination. The lighthouse shall include fourteen (14) internal Scan-Lock flash patterns including steady burn and High/Low power functions.

ZONE C -- UPPER REAR WARNING LIGHTS

Two (2) Whelen Series 600 Model #60R02FRR, 4" x 6" warning lights shall be installed. The warning lights shall be located one (1) each side upper rear body area. The warning lights shall incorporate Linear-Super LED and Smart LED technology. The lighthouse configuration shall be designed with eight (8) red Super-LEDs with a red optic polycarbonate lens. The lighthoods shall utilize a hybrid TIR optic reflector and chrome vacuum metallized reflector for maximum illumination. The lighthouse shall include fourteen (14) internal Scan-Lock flash patterns including steady burn and High/Low power functions.

ZONE C -- LOWER REAR WARNING LIGHTS

Two (2) Whelen Series 600 Model #60R02FRR, 4" x 6" warning lights shall be installed. The warning lights shall be located one (1) each side, rear lower area of body. The warning lights shall incorporate Linear-Super LED and Smart LED technology. The lighthouse configuration shall be designed with eight (8) red Super-LEDs with a red optic polycarbonate lens. The lighthoods shall utilize a hybrid TIR optic reflector and chrome vacuum metallized reflector for maximum illumination. The lighthouse shall include fourteen (14) internal Scan-Lock flash patterns including steady burn and High/Low power functions.

FRONT MOUNTED ELECTRIC WINCH

A Warn Winch Company 12,000 pound capacity, 12-volt electric winch system shall be installed on the front of the apparatus with a 4 way roller shall be installed to guide the cable. It shall have forward and reverse gears, a three stage planetary gearing and a sliding ring gear clutch that will permit free-spooling for quick unwinding of cable. The winch shall be controlled with a push button device attached to a twenty five foot (25') control cable and weatherproof receptacle. There shall be 125 feet of 3/8" diameter galvanized cable, with slip hook shall be installed.

A captive roller shall be installed to guide the winch cable.

The winch controller shall be a push button device attached to a twenty five foot (25') cable with weatherproof receptacle. The cord shall plug into the side of the winch.

BRUSH GUARD

A Warn bumper extension kit with a chrome or stainless steel heavy duty wrap around type grill guard shall be provided on the front of the apparatus for the winch assembly. It shall be of a one piece fully welded tubular construction for maximum strength, mounted in a manner utilizing the existing holes in the vehicle frame for superior strength with the lowest vibration. The grill guard shall provide front end protection for the headlight and grille areas of vehicle.

REAR TRAILER HITCH

One (1) Class 3 type trailer hitch, rated at approximately 10,000 lbs. shall be installed at the rear of the apparatus attached to the body sub-frame assembly. The hitch shall include frame, receiver insert slide-in ball mount with a 1-3/4" ball, a 5/8" hitch pin and 6-pin cable.

(2) HYDRAULIC RESCUE TOOL HOSE REELS – HIGH B1 COMPARTMENT

Two (2) AMKUS high pressure electric rewind dual hydraulic hose reels with chrome plated discs shall be angle mounted for serviceability. The reels shall be supplied with a section of flexible HRT hose for connection from hydraulic power supply to the reels. The reels shall be wired directly to the truck 12-volt battery system with guarded finger push button rewind switch.

(2) HYDRAULIC HRT HOSE

Two (2) 6 foot length of parallel (supply and return) Amkus compatible hydraulic hoses shall be supplied. The hose shall be installed from the HRT pump to the HRT reel in the B1 compartment.

(2) HYDRAULIC HRT HOSES

Two (2) 100 foot lengths of parallel (supply and return) Amkus compatible hydraulic rescue tool hose shall be supplied on the reels in B1 compartment.

BODY PAINTING SPECIFICATIONS – Match Dodge FLAME RED

The body shall be finish painted using a multi-step finishing system developed by the apparatus body manufacturer, in conjunction with PPG or DUPONT to insure a durable, high gloss, finish. The exterior of the body as well as any associated components that are to be painted shall be finished using the following procedure:

- The body and components are to be chemically cleaned on all surfaces.
- All surfaces are then to be sanded to proper levels and all sanding residue removed.
- Any imperfections or defects discovered shall be filled with premium body filler and sanded smooth.
- The body and components are to be primed as recommended by the paint manufacturer.
- The entire primed surface shall be thoroughly sanded and the body surfaces shall be meticulously inspected for any imperfections and properly corrected.
- The painting process shall be applied following the guidelines established by the paint manufacturer.
- The body shall be painted using a single color to match the cab primary color.

INTERIOR COMPARTMENT FINISH

The interior walls, floor, and ceiling surfaces of the exterior body compartments shall be finished with Scorpion coating. The finish shall provide a durable and flexible surface that is easy to maintain.

CAB REFLECTIVE LETTERING

The cab lettering shall be Scotchlite reflective material, shaded in black. A quantity of (60) three inch (3") letters shall be installed as directed by Fire Department.

CAB AND BODY STRIPING

The cab and body shall have a straight Scotchlite reflective stripe applied horizontally. The stripe shall be a 4" minimum in width and be applied horizontally around the cab and body in accordance with NFPA standards. The purchaser shall specify the color and location of the stripe.

REAR BODY STRIPING

Chevron style 3M Diamond Grade Scotchlite striping shall be provided on the rear of the apparatus. The stripes shall consist of 6" red and yellow alternating stripes in an "A" pattern. The striping shall be located on the rear compartment facing, rear extrusions, panels, excluding the rear doors.

EQUIPMENT PAYLOAD WEIGHT ALLOWANCE

The apparatus shall be engineered to allow for up to 2,500 pounds of fire department supplied loose equipment. This shall be in compliance with NFPA standards.

NFPA AND DOT REQUIRED HIGHWAY SAFETY EQUIPMENT

The apparatus shall be equipped with a NPFA and DOT required highway safety kit as follows:

1. One (1) set of three (3) dual faced triangular warning flares with foldaway bases and storage case.
2. One (1) 2.5 lb ABC, dry chemical fire extinguisher with vehicle mounting bracket
3. Six (6) reflective traffic cones, 24" high.
4. Reflective safety traffic control vests, one for each seated position in cab shall be provided.

LADDER MOUNTING AND CHAIN BOX

An aluminum treadplate chain box shall be installed on the rear tailboard of the vehicle.

An aluminum treadplate ladder boot with hold-down brackets shall be installed on the top of the vehicle to hold a customer supplied ladder.