SMALL BRUSH TRUCK SPECIFICATIONS

FORD CHASSIS

Chassis-cab shall be suitable for subsequent mounting of a modular (containerized); transferable equipped apparatus body conforming to the requirements specified herein. Cab-chassis shall meet or exceed the minimum requirements of this specification.

Manufacturer - Ford Motor Co.

Model - 2021 F450 Super Duty 2-Door Regular Cab/Chassis 4X4

Trim Level XL

Wheelbase - 169.3"

Cab to Axle - 84"

G. V. W.R. - 16,500 lbs.

Engine - 6.7L Turbo Diesel with block heater 300HP @ 2800 RPM and 600 lb./ft. @ 1600 RPM with air cooling package (minimum)

Stainless steel exhaust system (major components)

Transmission - Ford 10-speed TorqShift automatic with SelectShift

Front Axle – 7,000 lb. electronic shift on-the-fly (ESOF) 4-wheel drive system with auto/manual locking hubs, coil spring suspension, 1-3/8" gas type shock absorbers, standard stabilizer bars

Rear Axle – 12,000 lb. wide track type with 4.88 ratio with left suspension, 1-3/8" gas type shock absorbers with stabilizer bar

Shocks - Heavy-duty front and rear

Brakes - Power, self-adjusting, hydraulic with four wheel anti-lock, disc front and rear

Steering - Power assisted steering.

Air Conditioning/Heating - Ford installed with 134 refrigerant

Fuel Tank - Single with minimum 40 gallon capacity.

Wipers - Minimum 2-speed with pause and intermittent feature with standard windshield washer functions
Wheels & Tires will be 335/80R20, 22 PR for severe service radial all terrain tread, steel disc wheels. After market tires and wheels.

Driver and passenger side airbags.

Windows/Glass -Tinted safety glass

Instrumentation -Full set of gauges including oil pressure, water temperature and fuel level

Seats -Shall be OEM 40/20/40 vinyl seat covered with color-coordinated fabric upholstery and furnished with shoulder harness and lap belts.

Mirrors -Manual Telescoping trailer tow mirrors with 2-way fold and manual glass

Convenience Light Group -Dual head dome light controlled by headlight/parking light switch and door operated switches (driver and passenger); under hood light; Headlight "ON" audible alert.

Lights -Halogen headlights with daytime running lights

Dome light front and rear with crew cab

Power points located on instrument panel (2)

Cab Door Windows -OEM manual type on left and right cab doors

Cab Door Locks -OEM on left and right cab doors

Radio -A Ford factory installed AM/FM stereo radio with digital clock with four speakers.

Alternator -157 Amp Ford

Battery -Dual 750 CCA/78 amp

Color (standard) -Ford Bright Red

Warranty
- 3 year/36,000 mile Bumper to Bumper Coverage
- 5 year/60,000 mile Powertrain Coverage
- 5 year/50,000 mile Safety Restraint Coverage
- 5 year/unlimited mile Corrosion (perforation) Coverage
- 5 year/100,000 mile Power Stroke Diesel Engine
**SUSPENSION CONVERSION**

The Ford chassis shall have the following suspension conversion installed:

The chassis lift kit shall be a 2.5” DBL heavy duty, off road suspension lift kit with heavy duty off road shocks and sway bar installed on the front & rear chassis, approximately 6.5” overall lift.

The front tires will be 335/80R20, 22 PR for severe service radial all terrain tread. The tire weight rating will match the rim rating.

Wheels for the front axle will be 20” x 11.00” steel disc, ten (10) hole pattern special order for Military/Government off road application. The weight rating of the rims will be 6,750 lbs. each.

The rear tires will be 335/80R20, 22 PR for severe service radial all terrain tread. The tire weight rating will match the rim rating.

Wheels for the rear axle will be 20” x 11.00” steel disc, ten (10) hole pattern special order for Military/Government off road application. The weight rating of the rims will be 6,750 lbs. each.

There will be a set of step bars installed on the chassis.

**ELECTRICAL CONSOLE WITH EMERGENCY LIGHT SWITCH PANEL**

An electrical console shall be constructed of .125” smooth aluminum material and mounted in the cab of the truck chassis. Console shall be designed and installed between the driver and passenger seats. The top face of the console shall be designed for a switch panel for all emergency light switches, radio and communication system, tank level gauges, nozzle controls, and etc.

**CAB NERF BARS**

A pair of Westin brand E-Series Nerf bars shall be furnished and mounted to the cab. The Nerf bars are painted black, with recessed step pad made of molded polymer. The tubing shall be 0.150 inch thickness.

**HEAVY DUTY BUMPER**

A custom built heavy duty bumper will be installed in lieu of the standard OEM bumper. The bumper shall incorporate the siren speaker(s) and options such as winches, front tow eyes, wildland monitors, electric bumper nozzles, front receiver, if purchased.

**SPARE TIRE**
A spare tire and wheel shall be supplied. There shall be a tire mount on top of the booster tank.

**FLUID DATA PLAQUE**

One (1) fluid data plaque containing required information shall be provided based on the applicable components for this apparatus, compliant with NFPA Standards:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Drive axle lubricant
- Power steering fluid
- Pump transmission lubrication fluid
- Other NFPA applicable fluid levels or data as required

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

**DATA & WARNING LABELS**

**HEIGHT LENGTH & WEIGHT**

A highly visible label indicating the overall height, length, and weight of the vehicle shall be installed in the cab dash area.

**CAB SEATING POSITION LIMITS**

The label shall also include the seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.

**NO RIDE LABEL**

{Quantity} "NO RIDERS" label shall be applied on the vehicle at the rear step area or other applicable areas. The label shall warn personnel that riding in or on these areas, while the vehicle is in motion is prohibited.

**APPARATUS BED**

The heavy-duty truck bed is designed for rugged use. The apparatus bed shall be fabricate with extruded aluminum extrusions, that gives you a professional look, with the strength you need, for the environment the apparatus will be subjected too. Formed aluminum beds are not acceptable.

The apparatus flatbed body shall be approximately 96" wide x 108" long. The outer perimeter
platform mainframe is an “L” shaped aluminum extrusions 5” high with a 3” flange, with a 3/16” thickness.

The sub-frame crossmembers shall be 3” x 2-1/2” “I”-beam extrusions with a wall thickness of .190 on 16” centers. The crossmembers shall be welded to 4” x 2” C-channel extrusions that are ¼” thick and run full length of the chassis frame rails. Standard “U” bolts are used to secure the bed to the chassis frame.

The standard flooring shall be 3/16” aluminum diamond plate attached to the cross-members and the outer perimeter extrusion.

The headache rack shall be constructed of 2” x 2” x .125” wall thickness aluminum tubing. The rear cab glass shall be protected with an aluminum mesh material welded to the center area of the headache rack. The lower 15” area shall be covered with 1/8” aluminum diamond plate. From the floor area to the top of the headache rack shall be approximately 52” depending upon the cab height.

The rear face of the bed shall be 3/16” thick smooth aluminum plate and be approximately 15” deep x full width of the bed. (NOTE: The depth can be adjusted depending up the ground clearance you desire.) The DOT marker lights and 4” diameter LED stop, turn and backup lights shall be mounted in this area. A full width access step shall be furnished fabricated from grip strut aluminum and shall be 12” deep. The rear face shall have an “A” style Chevron applied using diamond grade 3M Scotchlite reflective red/yellow material.

The bidder shall warranty the bed for a period of ten (10) years. A copy of the warranty shall be included in the bid proposal.

The bed shall be built by the bidder. Subcontracted bed’s by a 3rd. party are not acceptable, NO EXCEPTIONS.

WORK STATIONS

The work stations and transverse cross walk structure shall be separate and independent of the bed, NO EXCEPTIONS. This separation allows for the bed to flex when the truck is driven in very rough terrain. The cross walk shall be constructed using heavy wall aluminum extrusions, diamond aluminum treadplate and grip strut material.

Each cubicle shall be approximately 30” wide x 25-1/2” deep and have a single hinged gate that pushes inward and returns to the closed position by means of a heavy duty gas shock.

The gates shall be constructed of 1” x 2” rectangular aluminum tubing. The gate shall be 40” high x 20-1/8” wide. The push in style gate shall allow the firefighter to access the work station area without climbing up in the center of the cross walk. The work station floor area shall be fabricated from an aluminum grip strut material. The grip strut material allows for ease of cleaning this area with the open grid design.
To support the work station area a 2” x 2” tubing brace shall be furnished on the non-hinge side. Heavy duty stainless steel hinges shall attach the gates to the headache rack. There shall be a headache rack integrated with the cross walk. The headache rack shall be fabricated from 2” x 2” square tubing and 3” x 2” tubing. The headache rack shall be constructed so that the light bar can be mounted off the front of the assembly. There will be expanded aluminum on the top half to protect the rear cab window. The lower area approximately 15” high shall be covered with aluminum treadplate.

AUTOMOTIVE LIGHTING

Six (6) red, (Truck lite Model JO or equal) led marker lights shall be installed in the platform edge as follows: one (1) each on the driver and passenger sides of the rear comers, one (1) each on rear corners facing rearward, and three (3) evenly spaced in the center of the tailboard above the rear compartment. Two (2) amber, (Truck lite Model 10 or equal) LED marker lights shall be positioned one (1) each on the driver and passenger sides of the platform front corners. Two (2) (Truck lite Model 60 or equal) LED, oblong combination tail, stop, and directional lights shall be provided. Two (2) (Truck lite Model 60 or equal) LED oblong back-up lights shall be provided. The combination and back-up lights shall be recessed diagonally into the tailboard. All marker and clearance lights and reflectors shall be provided and mounted as necessary to meet US DOT requirements and NFPA 1901 standards. One (1) license plate light shall be positioned right of center on the tailboard at an appropriate location to mount a license plate.

REAR UNDERBODY STORAGE

There shall be a compartment furnished full length of the flat bed between the flat bed deck and the chassis frame rails. The compartment shall be approximately 34” wide x 5” high x full length flat bed with a hinged drop down door at the rear. The door shall be furnished with a positive type latch. This compartment shall be for long handle tools, hard suction hoses or back boards.

PRE-CONNECT DISCHARGE

A custom aluminum treadplate hose tray will be installed on the rear of the apparatus deck. (UNLESS OTHERWISE SPECIFIED BY THE FIRE DEPARTMENT ON LOCATION OF HOSE TRAY). The hose tray shall be able to hold the specified amount of DJ fire hose as instructed by the FIRE DEPARTMENT. The hose tray shall be plumbed to the manifold discharge with 250 psi rubber hose. JIC fittings shall be used on the hose. A 1.5” brass water valve shall be installed on the manifold. A brass 1.5” swivel elbow shall be installed in the hose tray to allow the fire hose to be fully deployed from the hose tray.

COMPARTMENT

Two (2) aluminum compartments shall be installed on the top side of the apparatus deck, both
sides. The compartments shall be 48" W X 30"T X 19"D. There shall be (1) double pan lift up door within the 48" wide compartment. There shall be compartment lighting installed to come on when the door is open. “T” handle latches shall be installed in the doors.

COMPARTMENT LIGHT(S)

A compartment light shall be installed in the compartment. It shall activate when the door is opened. It shall be LED strip lighting type to cast a brighter light in the dark.

FRONT GRILLE FLOOD LIGHT

One (1) Rigid Ind. 110312 E-Series, 10" LED combo spot/flood light bar shall be installed on the lower front bumper area.

STEP LIGHTS

Whelen clear led lights shall be installed in the walkway step area. The lights shall be controlled by a switch. Switch will either be on a switch can or siren.

CHASSIS GROUND LIGHTS

Ground lights shall be mounted under chassis door. Lights shall come on automatically when the door is open. Light shall be installed in a mounting bracket.

A Pair of deck lights shall be mounted on the ends of the crosswalk headache rack. The lights shall shine down on the crosswalk area. The lights shall be wired to a switch in the cab for operation.

MARKER LIGHTS

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements.

TAIL LIGHTS

One (1) pair of Whelen M6BTT LED brake/turn/tail lights shall be provided. The rectangular 4"x6" lights shall be red.

BACKUP LIGHTS

One (1) pair of Whelen Series M6 LED backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 4" x 6" and the lens color shall be clear.

LICENSE PLATE BRACKET
One (1) stainless steel license plate bracket shall be provided at the rear of the apparatus. The bracket shall have a LED light.

**WATER TANK**

The booster tank shall be rectangular in configuration and shall have a capacity of 400 gallons. All tank sides, top and bottom, shall be constructed of 1/2” black UV stabilized copolymer polypropylene.

The tank shall be constructed utilizing latest thermo plastic welding technology. A clean, hot air controlled temperature process shall ensure that the weld reaches its plasticized state without cold or hot spots.

The tank shall undergo extensive testing prior to installation in the truck. The process shall include an electronic spark and water fill test after both the internal and external tank shell welds are completed.

The tank shall have a combination vent and manual fill tower. The tower shall be located in the left front corner of the tank. The tower shall have a hinged cover and thick polypropylene screen.

There shall be two (2) standard tank openings; one for the tank to pump suction line with an anti-swirl plate and one for a tank fill line.

Baffles, both longitudinal and latitudinal shall be interlocking and thermo welded to minimize water surge during travel, enhancing road-handling stability.

**WATER TANK SIGHT LEVEL GAUGE**

One (1) translucent sight level gauge shall be incorporated into the side of the poly water tank, location to be determined by customer.

**FOAM CELL**

A 20 gallon internal foam cell shall be installed in the tank. It shall be internally piped to accommodate the foam system. The fill tower shall have a pressure vacuum/vent.

**WATER TANK GAUGE**

The apparatus shall be equipped with one (1) Class1 “Intelli-Tank” water tank level gauge system. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/8 of a tank.

Each tank level gauge system shall include:
SINTON VOLUNTEER FIRE DEPARTMENT

- A pressure transducer mounted on the outside of the tank in an easily accessible area.
- A super bright LED 4-light display with a visual indication at nine accurate levels.
- Weather resistant connectors to connect to the digital display, to the pressure transducer and to the apparatus power.

The primary water tank level gauge shall be installed at the pump panel.

FOUR LIGHT WATER TANK GAUGE

The apparatus shall be equipped with one (1) Class 1 “Intelli-Tank” mini water tank level gauge and shall be installed in the chassis cab. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/8 of a tank.

Each tank level gauge system shall include:

- A pressure transducer mounted on the outside of the tank in an easily accessible area. Sealed foam tanks will require zero pressure vacuum vents.
- Super bright LED 4-light display with a visual indication at nine accurate levels.

Weather resistant connectors to connect to the digital display, to the pressure transducer and to the apparatus power.

WATERAX B2X-D902 PUMP

PUMP PERFORMANCE AND RATING:

The pump/engine shall perform to the standards of ISO 9(Texas Only) and NFPA 1906 medium pressure rating of 50 GPM. Typical pump performance from 5 foot draft under standard NFPA conditions shall be 110 GPM @ 150 PSI, 220 GPM @ 100 PSI, 250 GPM @ 75 PSI, and 274 GPM @ 50 PSI.

The pump shall provide a maximum pressure of 180 PSI and a maximum flow of 310 GPM. It shall be capable of operating to a maximum pressure of 400 PSI and be capable of passing a hydrostatic test of 300 PSI for 10 minutes per NFPA 1906 specifications – NO EXCEPTION.

Pump Suction/Discharge Ports:

The pump intake shall be a 3” Female NPT/4” Victaulic combination and be an integral part of the pump intake cover. The pump discharge shall be a 2-1/2” Female NPT/3” Victaulic combination and be an integral part of the pump body. The pump intake and discharge shall be in locations where applicable hose thread adapters can be installed without interference.
The pump shall be a 2-stage centrifugal pump with the pump body, diffusers, and impellers made of an anodized corrosive resistance aluminum. The impeller must be aluminum to match the pump body and diffusers in order to prevent galvanic corrosion from taking place between pump components – NO EXCEPTIONS. The impellers shall be 4.00 inches in diameter.

The pump shaft shall be stainless steel supported by two maintenance free bearings and shall not be co-linear to the engine’s drive shaft. A sealed roller bearing shall be located externally from the pump and a sintered bronze bushing shall be located within the pump cover. Both bearings must be maintenance free – NO EXEPTIONS. In addition, the pump seal shall be a mechanical rotary seal, shall be externally pressurized and shall incorporate a blister-resistant carbon seal face, silicon carbide seat, and a fully integrated drive bushing – NO EXEPTIONS.

The pump shall be coupled to a belt driven speed increaser with a quick release clamp capable of being removed by hand and without any additional tools – NO EXCEPTIONS. The quick release clamp system shall allow for the entire pump assembly, pump body with all its internal and external components, to be removable and capable of being serviced at a location away from the diesel engine and fire apparatus upon which it was part of. It shall also allow for the swapping out of the same or different performance pump assemblies within a minute’s time – NO EXCEPTIONS.

The horizontal belt driven speed increaser shall be a low maintenance timing belt and pulley system – NO EXCEPTIONS. The belt shall be a high quality timing belt and the drive pulley shall mount directly on the engine drive shaft through a means of a keyed tapered locking device. The increaser shall be a 1 to 1.88 ratio. In addition, a dampening device shall be provided between the pump shaft and pump shaft pulley.

Both the pump and horizontal speed increaser shall be painted red.

**ENGINE:**

The engine shall be a 4-cycle liquid cooled naturally aspirated Kubota D902-E4B diesel engine. The engine rating shall be 24.8 HP at 3600 RPM with a maximum torque of 40.6 lb-ft at 2600 rpm. The engine shall have a 2.83 bore, 2.9 inches of stroke, and a displacement of 54.8 cubic inches. The engine shall meet current EPA and CARB emissions standards.

The electrical system of the engine shall be 12 VDC. It shall also have a 40 amp regulating alternator and be pre-wired to connect to a mating control harness via an industrial sealed connector.

**MUFFLER:**
The engine muffler shall be mounted vertically with the option of a forestry approved spark arrestor or rain cap.

**MOUNTING:**

The pump/engine shall have four leg mounts.

**HALE 12V PRIMER**

A Hale electric primer system shall be installed under the bed of the apparatus, 501-3090-01-0

The ESP priming system provides the ultimate in fast priming, high vacuum performance and reliability without the use of a lubricant. Technologically advanced and environmentally safe, the ESP’s is an oil less, self-lubricating rotary vane-type positive displacement primer. Using a single control valve the semiautomatic priming entire system with a single action which simultaneously activates the entire system ensuring fast consistent air evacuation every time.

Provides fast priming, high vacuum performance and reliability without the use of a lubricant

Single action control valve which simultaneously activates the entire system ensuring fast consistent air evacuation

Rotary vane-type positive displacement primer capable of 25 inHg vacuum

Fully sealed and enclosed motor prevents dust, dirt and water from entering. System include: motor/pump unit, ground strap, and control valve are supplied ready for assembly.

12-volt DC power to be furnished.

**CONTROL PANEL:**

The pump shall have the capability of being supplied with any 2 types of remote control panel options. The panel connector must mate directly to the industrial connector supplied on the engine harness – NO EXCEPTIONS. The two options hall be a PMSCP-DIESEL (panel mount standard control panel), and a LOFA EP250 Series Control Panel.

1. The PMSCP-DIESEL panel shall be a flush mount flat panel with the following features and controls: push button panel On/Off switch (lit when the panel is on), push button engine start, red LED low oil pressure warning light, red high temperature coolant warning light, liquid filled dual unit 0-600 PSI/0-4000 kilopascals pump discharge pressure gauge, Vernier throttle with red emergency throttle idle push button, low pump pressure protection switch (lit when on), and a cut out for mounting an electric primer chrome momentary toggle switch. The panel shall be wired and the wiring shall terminate with an industrial connector. All panel wiring shall be color coded or labeled
to directly correspond to the mating engine or extension harness. All electrical components shall be weather resistant.

2. The LOFA panel shall be a face mountable aluminum enclosure with the following features and controls: rotary Off/Run/Start Switch; LED indicators for glow plug preheat, alternator charge failure, low oil pressure, and high coolant temperature; coolant temperature gauge, oil pressure gauge, voltage gauge, tachometer, and hour meter. The panel shall be wired and the wiring shall terminate with an industrial connector.

**BUMPER SWEEP NOZZLES - PAIR**

An ELKHART NTS-C .75" ground sweep nozzle will be installed at the specified locations. The nozzle shall be mounted thru an aluminum piece of angle. The nozzle shall be manually adjusted to a fog or straight stream pattern. Customer will determine flow pattern to suit their best needs. An electrically controlled brass water valve FAB1EBV-B shall be installed for each bumper nozzle. PLASTIC AGRICULTURAL VALVES SHALL NOT BE USED. The controls for the brass water valve shall be installed in the cab and operated by the driver of the apparatus. The brass water valve shall be mounted in a safe out of the way position under the bumper. All plumbing from the valve to the nozzle shall use 1" 800 psi hose with stainless steel fittings. Plumbing shall be routed from the discharge manifold under the apparatus body and protected from any hazards that may occur during driving operations.

**BUMPER MONITOR**

Akron Forestry 3462 monitor, 12 volt electrically controlled remote wild land monitor shall be furnished and installed on the front bumper extension of the apparatus.

The monitor shall have a two (2") inch waterway plumbed to the discharge manifold and be capable of flowing up to 125 gpm with adjustable nozzle or 200 gpm with fixed nozzle.

Controls for the monitor shall be mounted inside the chassis cab with a joy stick. Low flow nozzle shall come standard, adjustable 30, 60, 95 or 125 GPM. Customer shall specify desired flow.

All plumbing shall be routed under the apparatus body and be protected from any hazards that shall occur during operations.

**STAINLESS STEEL MANIFOLD**

The discharge manifold shall be constructed of 4" stainless steel square tubing. The stainless tubing shall be constructed out of schedule 10 type 304 stainless steel. The manifold shall be connected to the pump discharge with a 2.5" Victaulic fitting. The Victaulic fitting will allow in the ease of pump maintenance if needed. The manifold shall incorporate all discharge plumbing. The nipples used in the plumbing shall be schedule 40 type 304 stainless. The
manifold shall be hydrostatically pressure tested to 400 psi to ensure there will be no leaking of the manifold or valves. The manifold shall be mounted on a rubber square pad to cut down on the vibration. All manifolds will be custom built to the fire department specifications to accommodate all the discharges, re-circulate, and foam valves that will be needed.

1-1/2” DISCHARGE

A 1.5" NST rear discharge valve will be mounted on the manifold. The valve shall be a brass water valve. There shall be a 1.5" cap and chain installed on the valve.

2-1/2” DISCHARGE

A 2.5" NST rear discharge valve will be mounted on the manifold. The valve shall be a brass water valve. There shall be a 2.5" cap and chain installed on the valve.

TANK TO PUMP

All plumbing shall be stainless steel schedule 40 pipe. A 3.0" quarter turn ball valve shall be installed at the tank with a Victaulic fitting. There shall be a rubber hump style hose installed between the pump intake and 3.0" piping. There shall be custom fabricated aluminum brackets installed to support the plumbing. All pipe plumbing shall be welded to eliminate the need for fittings.

GATED SUCTION INLET

A 2.5" quarter turn ball valve shall be installed on the intake plumbing. There shall be a 2.5" chrome swivel inlet installed on the valve. A 2.5" male plug with chain shall be installed in the inlet.

1” TANK FILL

A 1” tank fill valve shall be installed on the manifold. The tank fill shall be plumbed to the tank with 800 psi hose. The fittings on the hose shall be JIC type fittings.

HOSE REEL

A Hannay electric rewind booster reel shall be installed on the top of the tank. The reel shall be constructed utilizing an all welded base. Reel bushings shall be manufactured from Nylatron to insure maintenance free operation. A 12-volt electrical motor shall be provided and will rewind the reel with a chain and sprocket drive mechanism. The reel shall have a capacity of 100 of 1" booster hose, NO BOOSTER HOSE INCLUDED. A, fully shielded rewind switch shall be provided on the body on the same side as the reel. Electrical switch connections shall be coated to protect against moisture. Chrome finish rollers and guides with nylon bushings shall be provided on each side of the reel. Plumbing to the reel shall be a 1" flexible 800 psi hose with the discharge valve located at the operators control panel area.
The booster hose and nozzle shall be capable of being used by the driver as they drive along the fire line. Brackets shall be furnished to secure the hose along the side of the body and at the driver’s door window.

**LIGHTWEIGHT BOOSTER HOSE**

One (1) length of 1" x 150 ft. lightweight booster hose shall be installed on the hose reel. The lightweight hose shall have 1" NST aluminum couplings.

**SCOTTY FOAM SYSTEM**

A SCOTTY 4171 Class “A” foam system shall be installed. The controls for the foam system shall be incorporated in the pump panel. The plumbing shall use stainless steel, brass, and rubber hose fittings. When unit is turned on it shall produce foam at all discharges.

**SIREN**

A Whelen 295HFS1 or updated model shall be installed. The features are Phaser, Yelp, Wail, Hands Free, Manual, Alert, and Radio.

It features separate volume controls for the radio repeat and public address functions, public address override, and speaker diagnostics. The siren is backlit for easy nighttime readability.

**SPEAKER**

A Whelen Model SA315P 100 watt composite speaker shall be mounted behind front bumper.

**LIGHT BAR**

A Whelen Liberty LED light bar shall be installed on the headache rack of the bed. Light bar shall have (12) LED light heads, (2) LED alley lights and (2) takedown lights.

**LOWER WARNING LIGHTS**

Eight (8) Whelen M6 series Super-LED lights model # M6R, red led with red lens, furnished with the M6 chrome flange.

Lighting shall be mounted as follows:

Zone A- Two (2) on the front of the apparatus facing forward

Zone B Two (2) at the forward most point each side

Zone C- Two (2) mounted on side of apparatus deck, one (1) each side

Zone D -Two (2) mounted on the rear face of the bed
**KUSSMAUL**

A Kussmaul auto charge 11 will be installed on the apparatus. It will be wired into the chassis battery system. A super auto eject 20 amp 120 volt will be installed and wired to the auto charge. Upon starting the vehicle the auto eject will automatically eject the customer supplied power cord. **Customer will determine the location of the auto eject.**

**REFLECTIVE STRIPE, 4" STRAIGHT**

A 4" single reflective stripe shall be installed on the side of the cab and side of the body. Customer will determine the color of the striping.

Unit number to be furnished on top of the cab, numbering approximately 24" height.

**SCOTCHLITE REFLECTIVE LETTERING**

The lettering shall be applied with Scotchlite reflective material, shaded in black.

A quantity of fifty (50), four (4) inch letters are to be placed on the cab and on the body as directed by fire department.

**CHEVRON STRIPING**

The entire rear portion of the body shall have Diamond Grade reflective red and lime yellow striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel.

**WARRANTY**

The apparatus shall have a twelve month (1 Year) warranty. Bidder to furnish a detail warranty description.

The body shall have a ten (10) year warranty. Bidder to furnish a detail warranty description.

The booster tank shall have a ten (10) year warranty. Bidder to furnish a detail warranty description.

The pump and pump engine shall have a minimum of 24 month warranty. Bidder to furnish a detail warranty description.