

Fouts Bros Fire Equipment



FOUTS BROS

FOUTS 4

INITIAL ATTACK

Fouts Bros.
138 Roberson Mill Road
Milledgeville, GA 31061
1-800-948-5045

Fouts Bros Fire Equipment

SCOPE AND GENERAL REQUIREMENTS

It is the intent of the manufacturer to provide a new fire apparatus that will withstand the continuous use encountered in the emergency fire fighting service. The apparatus shall be of the latest type, symmetrically proportioned and constructed with due consideration of the load to be sustained.

All parts not specifically mentioned herein, but which are necessary in order to furnish a complete fire apparatus, shall be furnished and shall conform to the best practices known to the fire apparatus industry.

The unit is to be of current year manufacture, and is to be new and unused. The bid price shall not include any local, State, or Federal taxes. The Bidder shall not be liable for any State or Federally mandated tax or program after the sale of this apparatus.

These specifications shall be construed as minimum. Should the manufacturer's current published data or specifications exceed these, they shall be considered minimum and be furnished.

PRIME BIDDER, MANUFACTURER

The manufacturer shall be prime bidder and shall identify the location of their facility.

BIDDERS BACKGROUND

Bids are requested from responsible manufacturers who are engaged in the manufacture of fire apparatus. To insure reliable and complete acceptance of the apparatus, bidder shall have been in operation for a minimum of thirty (30) years in the manufacturing of fire apparatus.

The manufacturer of the apparatus must be fully owned and managed by a Parent Company, Corporation, or Individual(s) that is 100% held by United States of America based Company, Corporation, or United States citizen(s).

Proposals from any manufacturer that is fully or partially owned and/or operated by a foreign company, Corporation or Individual(s) under any type of ownership, partnership, or any similar type of agreement will be immediately rejected.

If the manufacturer of the apparatus, or if any owner, shareholder, or immediate relative of an owner or shareholder that has previously been involved in or held ownership in any company that has filed bankruptcy or any other type of reorganization plan, it must be clearly stated in the bid proposal. The statement must include details and dates of all occurrences.

FAMA COMPLIANCE

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The apparatus manufacturer must be a current member of the Fire Apparatus Manufacturer's Association (FAMA) and must provide certificate of membership.

FAIR, ETHICAL AND LEGAL COMPETITION

In order to ensure fair, ethical, and legal competition the apparatus manufacturer shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.

PROPRIETARY PARTS

It is the intention of the purchaser for all bidders to furnish the apparatus with major parts commonly used by the heavy-duty truck manufacturers and open market vendors whereas replacement parts are more readily available and at reduced cost. The use of proprietary parts may not be acceptable to the purchaser.

MANUFACTURER'S DISCRETION

Materials, parts, or procedures used are subject to change at manufacturer's discretion at any time to provide equal or better products.

PRODUCT QUALITY AND WORKMANSHIP

The components provided and workmanship performed shall be of the highest quality available for this application. Special consideration shall be given to the following areas:

- A). Accessibility to various components that require periodic maintenance or lubrication checks.
- B). Ease of vehicle and pump operation.
- C). Features beneficial to the intended operation of the apparatus.

Construction of the complete apparatus shall be designed to carry the loads intended to meet the road and terrain conditions and speed requirements desired when specified by the purchaser.

Welding shall not be employed in the assembly of the apparatus in a manner that will prevent the removal of any major component part for service and/or repair.

INSURANCE REQUIREMENTS

Each bidder must submit with their bid proposal a Certificate of Insurance listing the proposed manufacturer's product liability insurance coverage. Liability insurance shall be a minimum amount of ten (10) million dollars. Submitted certificate shall name the apparatus manufacturer, insurance company, policy number, and effective dates of the insurance policy. Bids submitted without the

Fouts Bros Fire Equipment

required certificate will be considered nonresponsive and automatically rejected. No exceptions are allowed to the minimum insurance coverage requirement.

The manufacturer shall maintain full insurance coverage on the purchaser's cab and chassis from time of first possession by the manufacturer until the apparatus is delivered and accepted by the purchaser (No Exceptions). Purchaser reserves the right to require proof of insurance from the manufacturer's insurance carrier prior to entering into a contract for the apparatus.

PAYMENT TERMS

Full payment for the apparatus shall be made at time of delivery of the completed vehicle. Due to insurance liability, the apparatus will not be left at the purchaser's location without full acceptance and payment or prior agreement between the Purchaser and Bidder.

Final delivery price shall not include any Local, State or Federal taxes. The manufacturer shall not be liable for any State or Federal mandated tax or program after sale or delivery of the apparatus.

Dealer Fee: Fouts4

VEHICLE ACCEPTANCE AND DELIVERY

The customer shall pickup the vehicle at the manufacturing facility and shall supply evidence of sufficient insurance coverage to transport the vehicle.

FUEL TANK FILLED AT DELIVERY

The fuel tank and DEF tank (if applicable) shall be filled upon final delivery at the factory.

APPARATUS DIMENSIONS

These are standard truck dimensions. Changes in configuration or additional options may affect these dimensions. The contract specification shall contain the exact dimensions.

OVERALL HEIGHT

The overall height shall be less than 96.00".

OVERALL LENGTH

The overall length shall be no longer than 26.00'.

OVERALL WIDTH

The overall width of the body shall be 96.00" wide; chassis mirrors will extend out past this width.

PUMP HOUSE DIMENSIONS

The pump module shall be 24.00" wide.

ANGLE OF APPROACH

The angle of approach for the apparatus shall not be less than eight (8) degrees as specified by the current edition of NFPA 1901/ 1906.

Fouts Bros Fire Equipment

ANGLE OF DEPARTURE

The angle of departure for the apparatus shall not be less than eight (8) degrees as specified by the current edition of NFPA 1901/ 1906.

NFPA 1901, 2016 STANDARDS

This apparatus specification includes a commercial chassis that has not been certified to meet the requirements of NFPA 1901, 2016 edition by the chassis manufacturer. Although this chassis may comply with certain aspects of the standard, the apparatus manufacturer has not received certification from this chassis manufacturer that all criteria have been met. The body as built by the manufacturer must comply with the NFPA standards effective January of 2016.

ROAD TEST CERTIFICATION

A road test shall be conducted with the finished apparatus fully loaded. During this time, the apparatus shall not show loss of power and/or overheating. The transmission driveshaft or shafts and rear axle shall run free from abnormal vibration or noise throughout the operating range of the apparatus. The apparatus, when loaded, shall have not less than 25% or more than 45% of the weight on the front axle and not less than 55% or more than 75% on the rear axle.

- A). The apparatus must be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed RPM of the engine.
- B). The apparatus must be capable of accelerating from a steady speed of 15 mph to a true speed of 35 mph within 30 seconds. This shall be accomplished without moving the gear selector.
- C). The fully loaded apparatus shall be capable of obtaining a speed of 50 to 55 mph on a level concrete highway.
- D). The manufacturer shall furnish copies of the engine installation approvals signed by the appropriate engine company upon delivery of the chassis to the Fire Department.
- E). The manufacturer shall furnish copies of the transmission approval signed by the transmission manufacturer upon delivery of the chassis to the Fire Department.
- F). The manufacturer shall furnish copies of the front and rear axle approvals upon delivery of the apparatus to the Fire Department.

ROAD TEST FAILURE

In the event the apparatus fails to meet the test requirements of these specifications on the first trials, second trials may be made at the option of the manufacturer within thirty (30) days of the first trials. Such trials shall be final and conclusive and failure to comply with changes, as the purchaser may consider necessary to conform to any clause of the specifications within thirty (30) days after notice is

Fouts Bros Fire Equipment

given to the manufacturer of such changes, shall be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser, or its use by the purchaser during the above-specified period with permission of the manufacturer, shall not constitute acceptance.

SEATED AND BELTED WARNING LABEL - FAMA# 07

A permanent label shall be provided that is visible to all occupants that states that they should be seated and belted while the apparatus is in motion. The label shall also state potential injuries or death that could be caused if the safety belts are not used properly.

CAB INTERIOR EQUIPMENT MOUNTING DANGER LABEL - FAMA# 10

A permanent label shall be provided inside of the cab warning of the dangers of unsecured equipment inside the cab. The label shall state that all equipment shall be properly secured and also warn of potential injury or death that could be caused by failing to do so.

DO NOT WEAR HELMET LABEL - FAMA# 15

A permanent label shall be provided inside of the cab in view of all seated positions stating that helmets should not be worn in cab. The label shall also warn of potential injury or death that could be caused by wearing helmet in cab.

VEHICLE BACKING LABEL - FAMA17

A permanent label shall be provided inside of the cab in view of the driver advising of proper procedures to following when the apparatus is in reverse motion. The label shall also warn of potential injury or death that be caused by failing to follow proper procedures.

CHASSIS DATA LABELS

The following information shall be on labels affixed to the vehicle:

Fluid Data:

- Engine oil
- Engine coolant
- Chassis transmission fluid
- Pump transmission lubrication fluid
- Pump primer fluid (if applicable)
- Drive axle(s) lubrication fluid
- Air conditioning refrigerant
- Air conditioning lubrication
- Power steering fluid
- Cab tilt mechanism fluid (if applicable)
- Transfer case fluid
- Equipment rack fluid (if applicable)
- Air compressor system lubricant

Fouts Bros Fire Equipment

- Generator system lubricant (if applicable)

Chassis Data:

- Chassis Manufacturer
- Production Number
- Year Built
- Month Manufactured
- Vehicle Identification Number

Location shall be in the driver's compartment of the chassis cab.

OVERALL HEIGHT, LENGTH, GVW DATA PLAQUE

A "high visibility" plate shall be permanently mounted in the cab, visible to driver when seated.

The plate shall show the overall height of the completed apparatus in feet and inches, the overall length of the completed apparatus in feet and inches.

The plate shall also show the gross vehicle weight rating (GVWR) in tons.

Text shall also be supplied on the plate, indicating that the information shown is current upon completion of the apparatus. If the overall height of the apparatus changes after the apparatus is put into service, then the purchaser must revise the dimensions on the plate.

"NO RIDE" LABEL

A label shall be located on the vehicle at the rear step areas, and at any cross walkways, if they exist. The label(s) shall warn personnel that riding in or on these areas while the vehicle is in motion is prohibited.

COMMERCIAL CHASSIS SPECIFICATION

CHASSIS PROVIDER

The chassis, as detailed in these specifications, shall be ordered and supplied by the apparatus manufacturer.

CHASSIS

One (1) new FORD F-550 rear axle drive 4x4, dual rear wheels (DRW), four (4) door crew cab and chassis with XL trim.

Wheelbase: 203.70"

Cab to Axle: 84.00"

PAYLOAD PLUS UPGRADE PACKAGE (68M)

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- Increases GVWR from 18,000 lbs. to 19,500 lbs.
- Increases max RGAWR to 14,706
- Low Deflection/High Capacity Rear Springs
- Upgraded frame
- Upgraded rear-axle

ELECTRONIC SHIFT ON THE FLY (213)

- Electronic Shift-On-the-Fly (ESOF)

SKID PLATE

Transfer Case Skid Plate Shield

POWERTRAIN (99T)

- 6.7L Power Stroke V8 Turbo Diesel Engine, OHV (32-valve)
- Horsepower: 330 HP @ 2600 RPM
- Rated Torque: 825 lb.-ft. @ 2,000 rpm
- Stationary Elevated Idle Control, SEIC

Exhaust System: horizontally mounted, discharge on right side aft of wheels

TRANSMISSION

TorqShift 10-speed automatic with selectable drive modes.

FIRE/ RESCUE PREP PKG w/EPA SPECIAL EMISSIONS (LPO)

Includes 7,000 lbs. max front springs/GAWR rating for configuration selected. Incomplete vehicle package - requires further manufacture and certification by a final stage manufacturer. Ford urges Fire/Rescue Vehicle manufacturers to follow the recommendations of the Ford Incomplete Vehicle Manual and the Ford Truck Body Builders Layout Book (and pertinent supplements). NOTE 1: Stationary Elevated Idle Control (SEIC) has been integrated into the engine control module. NOTE 2: Engine calibration significantly reduces the possibility of depower mode when in stationary PTO operation. NOTE 3: Operator commanded regen allowed down to 30% of DPF filter full, instead of 100%. NOTE 4: Must meet the definition of an Emergency Vehicle, an Ambulance or Fire Truck per 40 CFR 86.1803.01 in the Federal Register. NOTE 5: California Code of Regulations allows for the sale of Federally certified emergency vehicles in California.

Includes:

- Dual Extra Heavy-Duty Alternators (Total 377-Amps)
- Operator Commanded Regeneration (OCR) Includes active regeneration inhibit.

MANUAL REGENERATION

A push button switch on the dash to initiate manual DPF regeneration.

Fuel Tank: 40 gallon aft-axle with auxiliary fuel tap, to provide fuel to an auxiliary truck body mounted diesel engine.

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NFPA 1901, 2016 edition, section 12.3.4.7 requires a means for draining the tank without removing the tank.

REAR AXLE RATIO

The ratio of the rear axle shall be 4.88 limited slip.

Engine Block Heater

PTO PROVISION

Transmission Power Take-Off Provision

CAB TYPE

Conventional, engine forward, four (4) door crew cab

Construction: Welded steel

Accessories:

- Solar Tinted glass in all windows
- Dual sun visors
- Electric windshield washer
- Dome light
- Fresh air heater and defroster
- Dual electric horns
- Driver and passenger air bags
- Gray Vinyl Upholstery
- Roof Clearance Lights
- Black vinyl full floor covering
- 12V Auxiliary Power Point

Headlamps: dual beam jewel effect

Climate Controls: controls for heat, defroster, and air conditioning

Mirrors: black manually telescope fold-away in/out for view adjustment.

Instrumentation:

- Tachometer
- Speedometer
- Turbo boost (diesel only)
- Oil pressure
- Coolant temperature
- Fuel gauge
- Transmission temperature gauge

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- Indicator lights & Message Center/odometer, trip odometer, engine hour meter & warning messages.

POWER EQUIPMENT GROUP

- Accessory delay
- Manual-folding and manual telescoping power trailer-tow mirrors with heated glass.
- Heated convex spotter mirror
- Integrated clearance lamps/ turn signals
- Perimeter alarm
- Power first-row windows with one-touch up/ down
- Power second-row windows
- Power locks
- Remote keyless entry
- Upgraded door-trim panel
- Advanced Security Pack (includes SecuriLock Passive Anti-Theft System (PATS) and Inclinometer/ Intrusion Sensors)

CAB SEATING

The front seating shall consist of a heavy duty vinyl 40/20/40 split front bench seat w/center armrest, cup holder, storage and manual driver-side lumbar support

REAR CAB SEATING

The rear seating shall consist of a heavy duty vinyl 60/40 bench flip-up/fold-down rear seat.

XL VALUE PACKAGE

- 4.2" center stack screen
- AM/FM stereo MP3 player w/ six speakers
- Chrome front bumper
- Cruise control
- Ford SYNC

WHEELS

Six (6), 10-hole Disc, 19.50" x 6.00" RW Steel

TIRES

Six (6) 225/70Rx19.5G black side wall traction tires shall come supplied from ford with the chassis.

FORD SUPERDUTY WARRANTY

Description	Months/Distance
Basic.....	36 month/36,000 miles
Powertrain.....	60 month/60,000 miles
Corrosion Perforation.....	60 month/unlimited mileage
Roadside Assistance	60 month/60,000 miles

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Diesel Engine60 month/100,000 miles

CHASSIS PAINT COLOR

The cab shall be painted a single color by the chassis manufacturer.

Color: Ford Race Red

Paint Number: PQ

RUNNING BOARDS

One (1) set of R.O.M. Roughneck ,model # R04248, running boards shall be mounted to each side of the chassis. The running boards shall exceed the NFPA requirements for stepping surface and slip resistance

FRONT BUMPER REPLACEMENT

The factory bumper shall be removed and replaced with a custom fabricated, heavy duty steel bumper with a grille guard protection assembly. The bumper shell shall be constructed of 10-gauge smooth steel onto a 0.375" steel frame.

The bumper shall be powder coated matte black.

The bumper shall have an internal winch mount. It shall be capable of holding up to a 16,500 lb. winch.

A deck mount for a front monitor shall be constructed as part of the replacement bumper.

A mount for one (1) siren speaker shall be constructed as part of the replacement bumper on the LH side.

FRONT MOUNTED WINCH

An electric winch with 12,000 pound (5,440 kg) rated line pull shall be installed in the brush guard. The winch shall be equipped with 3/8" diameter wire rope, clevis hook and a 4-way roller fairlead. The winch shall be operated through a pendant with a hand held control.

TOWING HITCH RECEIVER

A trailer towing hitch receiver with safety chain anchors shall be installed at the rear of the apparatus.

The hitch receiver shall be constructed of heavy steel tubing and reinforced to the apparatus framework. The hitch receiver shall have a Class V rating of 16,000 pounds towing and 1,600 pounds tongue weight when used with a weight distributing hitch assembly.

The receiver shall accept a 2.00" hitch.

One (1) 7-prong connector with a weatherproof cover shall be supplied and mounted near the rear receiver tube.

SEATING MODIFICATION

Fouts Bros Fire Equipment

The center portion of the 40/20/40 split bench seat shall be removed to accommodate the installation of the specified console.

SEATING CAPACITY

The seating capacity in the cab will be four (4).

REAR CREW AREA SEATS

The Ford factory seats shall be removed in the rear crew area. Two (2) VALOR SCBA style seats with ZICO EZ Lock brackets and seat riser shall be provided and installed.

The seats will be installed with one (1) in the passenger's side outboard position and one (1) in the driver's side outboard position. There will be no seat in the center position. Seats will utilize the existing shoulder safety belt system.

SCBA SEAT CRASH HAZARD - FAMA# 11

Safety sign FAMA # 11 sign shall be visible to the occupants of the SCBA seats in the cab. "SCBA Seat Crash Hazard. Only occupy SCBA seat with pack or seat insert in place. Sitting in an SCBA seat without an SCBA pack or seat insert may cause injury in the event of a crash."

SEAT BELT WEB LENGTH

NFPA 1901, 2016 edition, Section 14.1.3.1 and 14.1.3.2 requires effective seat belt web length for a Type 1 lap belt for pelvic restraint to be a minimum of 60.00", and a Type 2 pelvic and upper torso restraint-style seat belt assembly to be a minimum of 110.00".

Per specification of a commercial chassis, this apparatus may not have seat belts of the required length. These belts may not provide sufficient length for large firefighters in bunker gear. This apparatus will be non-compliant to NFPA 1901 standards effective at time of contract execution.

SEAT BELTS

NFPA 1901, 2016 edition, section 14.1.3.3 requires the seat belt webbing to be bright red or bright orange in color, and the buckle portion of the seat belt will be mounted on a rigid or semi-rigid stalk such that the buckle remains positioned in an accessible location.

The seat belt color is not available in red or orange from the commercial chassis manufacturer. Per specification of a commercial chassis, the seat belt color will be non-compliant. This apparatus will be non-compliant to NFPA 1901 standards effective at time of contract execution.

TIRE PRESSURE MANAGEMENT

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There will be a RealWheels LED AirSecure tire alert pressure management system provided, that will monitor each tire's pressure. A sensor will be provided on the valve stem of each tire for a total of six (6) tires.

The sensor will calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor will activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.

Removing the cap from the sensor will indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED will immediately start to flash.

STAINLESS WHEEL LINERS

The front and rear axles shall be equipped with stainless steel wheel liners.

CHASSIS EXHAUST EXTENSION - RIGHT HAND SIDE

The chassis exhaust shall be modified and relocated to the right side of the apparatus, and will terminate behind of the rear wheel.

HOT EXHAUST DANGERS LABEL - FAMA# 04

A permanent label shall be provided near any hot exhaust surface that warns of potential injury or death that could be caused by contact with the surface. The label shall also state precautions that should be taken while working on or around the surface.

CHASSIS PREPARATION

Prior to installation of the fire pump, apparatus body, or cab steps, all components which extend out beyond the chassis frame rails shall be removed and relocated to the area within the frame rails

CHASSIS TOW HOOKS

The front tow hooks shall be provided as detailed in the chassis specifications.

VEHICLE DATA RECORDER

NFPA 1901, 2016 edition, section 4.11.1 requires all apparatus be equipped with an on-board vehicle data recorder. The VDR is intended to be used by the fire department to monitor seat belt use as a tool for enforcing a seat belt policy that enhances the safety of apparatus occupants.

The vehicle data recorder is not available as required from the commercial chassis manufacturer. Per Fire Department specification of a commercial chassis, there will be no vehicle data recorder on the apparatus. This apparatus will be non-compliant to NFPA 1901 standards effective at time of contract execution.

SEAT BELT MONITORING SYSTEM

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NFPA 1901, 2016 edition, section 14.1.3.9 requires a seat belt warning system be provided. The seat belt warning device is intended to assist the driver or officer in determining whether all occupants are seated and belted before the vehicle is driven. Without this device, the driver must manually determine that all occupants are seated and belted before the apparatus is placed in motion.

The seat belt warning system is not available as required from the commercial chassis manufacturer, or not requested by the customer. Per Fire Department specification of a commercial chassis, there will be no seat belt warning system on the apparatus. The purchasing authority is consciously choosing to accept an apparatus without a tool that the NFPA Technical Committee on Fire Department Apparatus believes all fire departments should use to promote and enforce seat belt compliance. This apparatus will be non-compliant to NFPA 1901 standards effective at time of contract execution.

CENTER CONSOLE

A center console fabricated from 0.125" aluminum shall be furnished and shall be located between the driver and officer's seats.

The forward area of the console shall have a mounting surface for emergency lighting switch panels and/or electronic siren control boxes within reach of the driver or officer.

ARMRESTS

Two (2) padded, adjustable armrests shall be provided and installed on the console.

MASTER BODY DISCONNECT SWITCH

A master body disconnect on/off switch shall be provided in the cab, near the driver's door. The switch shall disconnect the power to the apparatus body when the ignition switch is in the off position.

One (1) reset breaker shall be installed between the solenoid output and any electrical load.

One (1) indicator light shall be provided to indicate the apparatus 12-volt system is on. The light shall be located in the chassis cab and be visible from the driver's positions. The light shall be green in color and labeled "Master Battery".

BATTERY CONDITIONER

A Kussmaul Chief 4012 Series battery conditioner shall be supplied. The battery conditioner shall provide a 40 amp output for the chassis batteries and a 20 amp output circuit for accessory loads.

BATTERY CHARGER LOCATION

The battery charger shall be located in compartment L2, vertically as high up as possible towards the forward facing compartment wall.

120 VOLT SHORELINE CONNECTION - "SUPER" AUTO EJECT

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One (1) Kussmaul "Super" Auto Eject model 091-55-20-120, automatic, 120 volt, 20 amp shoreline disconnect shall be provided for the on board, 120 volt battery charging systems.

AUTO-EJECT MATING PLUG

A 5-20P, 20 amp mating female cord end shall be shipped loose with the apparatus to allow the Fire Department to connect cord end to a Fire Department provided charging cord.

BATTERY CHARGER DISPLAY/ COVER

One (1) Kussmaul model 091-55-266-YW batter charger status center/ auto eject cover shall be supplied with the charger.

The cover shall be yellow in color.

ELECTRICAL INLET LOCATION

An electrical inlet shall be installed on the left hand side of the pump module.

AUXILIARY AIR COMPRESSOR

A Kussmaul 12V air compressor model # 091-9-12V-AD shall be supplied. The compressor system shall be designed to maintain the air pressure in the air system while not in use. A pressure switch shall sense air pressure drop and engage the compressor which shall run until the pressure is restored. The air compressor shall include an auto drain as an extra precaution to prevent moisture from entering the air system. The automatic moisture drain shall be plumbed into the system between the auxiliary air compressor pump and the air tanks.

AUXILIARY AIR COMPRESSOR LOCATION

The auxiliary air compressor shall be located inside the pump module.

BACK-UP ALARM

One (1) 97 DB back up alarm shall be provided and installed at the rear of the unit. It shall be wired to activate when the transmission is placed in reverse.

12-VOLT POWER POINT

A 12-volt power point shall be supplied with the chassis.

DUAL USB PORT

One (1) Kussmaul model # 091-219-5 shall be installed in the console. It shall contain two (2) 2.4 amp USB charging ports.

PUMP, MODULE, AND RELATED ITEMS

NFPA 1901 COMPLIANT PUMP

Fouts Bros Fire Equipment

The fire pump and related plumbing on the specified apparatus shall be installed in accordance with applicable NFPA 1901 guidelines at the time the contract was placed.

SINGLE STAGE FIRE PUMP

The pump shall be a Darley PSM single stage fire pump, capable of a 1500 gpm rating.

Power to drive the pump shall be provided by the same engine used to propel the apparatus. The pump shall be midship mounted and designed to operate through an integral transmission, including a means for power selectivity to the driving axle or to the pump.

The pump shall contain a cored heating jacket feature that can be connected into the vehicle antifreeze system to protect the pump from freezing in cold climates.

The transmission case shall be heavy duty cast iron alloy with adequate oil reserve capacity for low operating temperatures. A magnetic drain plug shall be provided. Transmission case shall include a dip stick for checking oil level.

Discharge outlets shall have extensions with companion flange openings to allow ease of service.

The pump priming system, heat exchanger system, discharge and suction valves, relief valves, pump shift, and master drain shall be as detailed elsewhere in these specifications.

TEN YEAR FIRE PUMP WARRANTY

A ten (10) year warranty for the Darley fire pump shall be provided.

DARLEY MECHANICAL SEAL

The fire pump shall be furnished with a Darley maintenance free mechanical seal; manufactured using the material silicon carbide (no exceptions). The mechanical seal shall be a non-contacting, non-wearing dual seal design. The lip seal shall eliminate leakage on a wet pump while parked on standby. The second seal shall allow a drip rate for cooling and lubrication while pumping.

1500 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Darley model PSM midship mounted with a rated capacity of 1500 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:

1500 gpm (5678 L/M) @ 150 psi (10.3 bar)

1050 gpm (3974 L/M) @ 200 psi (13.8 bar)

750 gpm (2839 L/M) @ 250 psi (17.2 bar)

ELECTRIC PRIMER (FLUIDLESS)

Fouts Bros Fire Equipment

The fire pump priming system shall consist of one (1) 12V positive displacement type rotary vane primer of a fluidless design. A single, push-pull control shall be located on the pump operator's panel with a "Pull to Prime - Push To Close" label. The primer shall not require a lubrication tank. The priming pump shall be constructed of heat treated aluminum and hard coat anodized.

The pump priming system shall include a light to indicate when the pump priming system has been activated. The light shall be red in color and shall be labeled "WARNING - Primer Engaged".

PRIMER FUSE

The primer shall be protected with a 250 amp fusible link that is designed to protect the apparatus 12 volt electrical system if the primer motor malfunctions.

LEFT SIDE INLET - 6.00"

One (1) 6.00" suction steamer inlet with male NST threads shall be provided, on the left side pump panel. The inlet shall have a removable screen.

INLET CAP

One (1) 6.00" chrome plated cap with long handles and NST threads shall be supplied. The cap shall be capable of withstanding 500 PSI and be trimmed with the apparatus manufacturer's logo in the center of the cap.

RIGHT SIDE INLET - 6.00"

One (1) 6.00" suction steamer inlet with male NST threads shall be provided, on the right side pump panel. The inlet shall have a removable screen.

INLET CAP

One (1) 6.00" chrome plated cap with long handles and NST threads shall be supplied. The cap shall be capable of withstanding 500 PSI and be trimmed with the apparatus manufacturer's logo in the center of the cap.

AIR COMPRESSOR - PUMP SHIFT

Since the Ford Superduty chassis does not have an onboard chassis air system, an alternate air system will be provided. This system will include a 12-volt air compressor and a small capacity tank. The compressor and tank will be installed in a location that does not interfere with other equipment.

The compressor will maintain air system pressure. A pressure switch will sense when the system pressure drops and automatically start the compressor, (providing the battery switch is "on") which then will run until pressure is restored.

PUMP SHIFT

One (1) air powered pump shift package shall be provided for installation in the cab. The shift shall engage the fire pump. The pump shift shall be engaged only when apparatus is in a stationary position and the parking brake is engaged. The following indicator lights shall be included with pump shift package.

Fouts Bros Fire Equipment

A green indicator light labeled "**PUMP ENGAGED**" shall indicate pump shift has successfully been completed.

A green indicator light labeled "**OK TO PUMP**", shall indicate the chassis transmission is in pump gear and parking brake is engaged.

DRIVELINE MODIFICATION

The chassis driveline shall be modified to accommodate any changes required by the installation of the fire pump.

PLUMBING SYSTEM

The plumbing system shall consist stainless steel hard piping, or flexible high pressure hose, as deemed necessary for the application. Upon completion, the entire system shall be fully pressure tested.

Each gated intake shall be equipped with a 0.75" bleeder valve located in close proximity to the intake. All intakes shall be provided with suitable closures (valves or caps) capable of withstanding 500 PSI.

When any 3.00" or larger intake or discharge is gated (except tank to pump valve), the valve shall have a mechanism to allow the valve to fully open or fully close no faster than 3 seconds.

Any 2.50" or larger discharge outlet, mounted 42.00" or higher from ground, which hose is to be connected, and which is not in a hose storage area, shall be supplied with a sweep elbow of at least 30 degrees.

Each gated 1.50" or larger inlet and discharge shall have a quarter turn drain valve installed. The drain valves shall be located along the bottom on each pump panel. Inlets & discharges shall be plumbed to each drain at the lowest point. Each drain shall be plumbed with low-pressure hose to drain below bottom of the apparatus and be directed away from the pump operator. Each drain valve shall have a color-coded function label.

Small lines within the pump enclosure shall be constructed from Synflex hose. Uses include, but are not limited to such lines as priming control, gauge lines, drain lines, air control valves, pump shift, supplemental cooling, foam flush and air bleeder valves.

HOSE THREADS- NST

All hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intake and discharges, unless otherwise specified.

VALVES

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The valve shall be a quarter turn ball type, self-locking, fixed pivot design, with Stainless Steel balls. The valves shall be bi-directional with full flow capability. The valves shall be of fixed pivot ball design with a flow pressure rating to meet NFPA-1901 standards. All 3.00" discharge valves shall be supplied with a true slow close mechanism per NFPA specifications.

INDIVIDUAL DRAINS

One (1) individual quarter-turn up drain valve shall be furnished for each 1.50" or larger discharge port and each 2.50" gated auxiliary suction.

DISCHARGE GAUGES

Individual 2.50" line gauges for each 2.00" or larger discharge shall be provided and mounted adjacent to the discharge valve control handle. The gauges shall indicate pressure from 0 to 600 PSI. The face of the gauges shall be a BLACK dial with white letters.

PUMP CERTIFICATION

The fire pump shall be tested to meet the flow requirements of the pump. A written certification shall be provided with the completed vehicle.

INTAKE RELIEF VALVE(S)

One (1) bronze, Elkhart intake relief valve(s) shall be provided and mounted on the suction side of the pump, adjustable from 50-250 psi, on the valve itself. Each valve specified shall be factory preset at approximately 125 psi. The system does not include an on/off control

U.L. TEST POINTS

Two (2) U.L. test plugs shall be mounted on the pump panel for testing of the vacuum and pressures.

MASTER PUMP DRAIN

A rotary type master drain valve shall be provided and controlled at the lower portion of the left hand side pump panel. The valve shall be located in pump compartment lower than the main body and connected in such a manner as to allow complete water drainage of the pump body and all required accessories. Water shall be drained below the apparatus body and away from the pump operator.

PUMP ANODES

The pump shall be supplied with two (2) anodes for corrosion protection. The anodes shall be mounted at a 3/4" tap location on the pump manifolds. One (1) anode shall be mounted on the suction side of the pump and one (1) anode on the discharge side of the pump.

PRESSURE GOVERNOR

A Darley "**AUTO CONTROL**" electronic pressure governor and engine monitoring system shall be installed on the pump operators control panel. The governor shall be configured to operate with the chassis engine. It shall regulate engine RPM to maintain a consistent pressure out of the water pump over a wide range of outgoing flows. The unit shall operate in both RPM and PSI modes.

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DISPLAY:

- A 4-digit LED readout for pump discharge pressure.
- A 4-digit LED readout for pump intake pressure.
- A 20 segment LED bar graph for the pressure or RPM setting.
- A 4-digit readout for engine RPMs.

- Three (3), 10 segment bar graphs for battery voltage, engine oil pressure, and engine temperature. The bar graph display shall flash if low voltage, low oil pressure, or high engine temperature condition occurs.

- "Throttle Ready" green LED. It shall indicate that the pump is engaged in the proper stationary pumping position, and that the parking brake is set.

FUNCTION SWITCHES:

Idle Mode - Preset - Increase - Decrease - Silence.
This system shall utilize information from the chassis engine ECU.

LEFT SIDE INLET

One (1) 2.5" brass suction valve(s) shall be installed on the left pump panel with the valve body mounted behind the pump panel. The control handle(s) shall be the quarter turn ball type, of the fixed pivot design, and located alongside the suction valve.

The suction(s) shall terminate with a 2.50" female NST chrome inlet swivel with a brass inlet strainer. One (1) 2.50" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain.

TANK TO PUMP LINE (ELECTRIC/ AIR)

One (1) 3.00" tank to pump line shall be provided for connection between the water tank and the fire pump. The valve shall be controlled from the pump operator panel using an open/closed, two (2) position toggle switch with a red indicator light for the closed position, and a green indicator light for open.

The toggle switch shall activate an electric over air solenoid, which actuates an air cylinder changing the position of the valve.

TANK TO PUMP CHECK VALVE

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The suction inlet shall be provided with an inline tank to pump check valve. The check valve shall be designed to automatically open when drafting from an onboard water tank, and close if the pump suction receives water pressure from an outside source.

TANK FILL/ RECIRULATION LINE

One (1) 2.00" fire pump to water tank refill and pump bypass cooler line shall be provided. The line shall be plumbed with 2.00" piping and flex hose.

The quarter turn valve shall be manually operated with a push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00" x 3.00" identification tag.

LEFT SIDE DISCHARGE

One (1) 2.50" discharge outlet with 2.50" pipe and valve and NST threads shall be supplied at the left side panel.

The quarter turn valve shall be manually operated with a push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00" x 3.00" identification tag.

The discharge shall have a 2.50" Female NST swivel rocker lug x 2.50" Male NST 30 degree chrome elbow adapter provided.

One (1) 2.50" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped rocker lugs and chain.

The discharge shall **NOT** be foam capable.

RIGHT SIDE FRONT PANEL DISCHARGE

One (1) 2.50" discharge outlet with 2.50" pipe and valve and NST threads shall be supplied at the right side panel.

The quarter turn valve shall be manually operated with a push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00" x 3.00" identification tag.

The discharge shall have a 2.50" Female NST swivel rocker lug x 2.50" Male NST 30 degree chrome elbow adapter provided.

One (1) 2.50" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped rocker lugs and chain.

The discharge shall **NOT** be foam capable.

RIGHT SIDE REAR PANEL DISCHARGE

One (1) 3.00" discharge outlet with 3.00" pipe and valve and NST threads shall be supplied at the right side panel. The valve shall be a quarter turn ball type, self-locking, fixed pivot design. The valve shall be bronze valve with a high polished stainless steel ball.

The quarter turn valve shall be manually operated with a push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00" x 3.00" identification tag.

ELBOW ADAPTER

One (1) Harrington model # H30E-40-30NH 30 degree elbow shall be provided and attached to the 3.00" discharge. The elbow shall be configured with a 3.00" female NST swivel rocker lug coupling

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and 4.00" Storz with Storz-Lok.

STORZ CAP

One (1) HARRINGTON model HBC-40 4.00" Storz cap with lanyard shall be provided.

The discharge shall **NOT** be foam capable.

HOSE BED PRECONNECT - RH SIDE

One (1) 2.50" discharge shall be plumbed to the front of the hose bed, on the right hand side. The discharge will terminate with 2.50" NST thread.

The quarter turn valve shall be manually operated with a push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00" x 3.00" identification tag.

The discharge shall **NOT** be foam capable.

CROSSLAY PRE-CONNECT DISCHARGE #1

One (1) 1.75" crosslay pre-connect shall be installed in the pump module above the pump. The crosslay shall be plumbed using 2.00" flexible piping. The crosslay discharge shall terminate below the hose bed floor with a 2.00" NPT x 1.50" NSTM chicksan swivel adapter.

The quarter turn valve shall be manually operated with a push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00" x 3.00" identification tag.

The discharge shall be foam capable.

CROSSLAY PRE-CONNECT DISCHARGE #2

One (1) 1.75" crosslay pre-connect shall be installed in the pump module above the pump. The crosslay shall be plumbed using 2.00" flexible piping. The crosslay discharge shall terminate below the hose bed floor with a 2.00" NPT x 1.50" NSTM chicksan swivel adapter.

The quarter turn valve shall be manually operated with a push pull control rod. It shall have a chrome plated zinc handle with a recessed area for 1.00" x 3.00" identification tag.

The discharge shall be foam capable.

BOOSTER REEL DISCHARGE

One (1) 1.50" booster reel discharge shall be supplied with 1.50" valve and plumbing. The quarter turn valve shall be manually operated with a Class1 locking push pull control rod.

The booster reel discharge shall be plumbed from the valve to the hose reel utilizing 1.50" high pressure hose. The end of the hose connected to the hose reel shall be equipped with a swivel end for ease in hose replacement.

BOOSTER REEL

One (1) HANNAY painted steel booster reel with electric rewind shall be supplied and mounted in the rear compartment. The reel shall be capable of carrying 75' of 1.00" booster hose.

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One (1) polished stainless steel roller guide assembly shall be installed on the booster reel, allowing the booster hose to be deployed to the rear of the apparatus.

SWITCH, REWIND BOOSTER REEL

There shall be one (1) hose reel rewind switch installed. It shall be a weather-resistant momentary push button switch and shall be located near the booster reel. The switch shall be labeled "BOOSTER REEL REWIND".

BOOSTER REEL HOSE

The booster reel shall be supplied with one (1) 50' sections of 1.00" NST red booster reel hose. The discharge shall **NOT** be foam capable.

DECK GUN DISCHARGE

One (1) 3.00" discharge shall be located on the top of the pump. The discharge shall be plumbed to the top of the module using 3.00" schedule 10 stainless steel pipe. The pipe shall terminate in a 3.00" MNPT thread.

The quarter turn valve shall be electronically operated with a KZ Valve model TSL Plus controller.

DECK PIPE FLANGE

One (1) deck gun pipe outlet flange shall be installed on the deck gun piping. It shall be a four bolt flange installed for mounting a deck gun.

The discharge shall **NOT** be foam capable.

FRONT BUMPER MONITOR

One (1) Akron Model 3462 Forestry Monitor shall be installed. The remote monitor shall be located on the front bumper of the apparatus.

The 300 gpm rated monitor is to be an all electric single waterway monitor constructed of lightweight Pyrolite. The monitor shall have a fully enclosed 12-volt motor and gears with a manual override for both horizontal and vertical rotation and may be operated simultaneously. The vertical travel shall be from 45-degrees below to 90- degrees above horizontal with adjustable stops at -20 degrees and +45 degrees. The horizontal rotation shall be 320-degrees with adjustable stops at +-90-degrees.

MONITOR PAINT COLOR

The monitor shall be Red in color.

QUICK CONNECT

A 2.00" NPT quick disconnect shall be installed for quick removal of the monitor from the truck.

MONITOR PLUMBING

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One (1) 2.00" front bumper discharge piping shall be piped to the front bumper area. Flexible 2.00" Class1 high pressure hose shall be provided from the pump to the monitor with low point drains where necessary. The monitor shall be an all-electric single waterway monitor constructed of lightweight Pyrolite, with a 2.00" electric valve.

MONITOR CONTROLLER

The monitor shall be controlled by a joystick located in the cab. The joystick shall provide up, down, right, left, fog, and stream control of the monitor. The joystick shall have a trigger switch to control the electric discharge valve.

MONITOR NOZZLE

An electric adjustable nozzle shall be supplied. It shall be adjustable at the following GPM's: 30, 60, 95, 125

FOAMPRO 1600 FOAM SYSTEM

The apparatus shall be equipped with an electronic, fully automatic, variable speed, direct injection, discharge side foam proportioning system. The system shall be capable of handling Class A foam concentrate. The foam proportioning operation shall be based on direct measurement of water flows, and remain consistent within the specified flows and pressures. System must be capable of delivering accuracy to within 3% of calibrated settings over the advertised operation range when installed according to factory standards. The system shall be equipped with a control module suitable for installation on the pump panel. Incorporated within the motor driver shall be a microprocessor that receives input from the system flowmeter, while also monitoring foam concentrate pump output, comparing values to ensure that the operator preset proportional amount of foam concentrate is injected into the discharge side of the fire pump.

The control module shall enable the pump operator to:

- Activate the foam proportioning system
- Select proportioning rates from 0.1% to 1.0%
- See a "low concentrate" warning light flash when the foam tank runs low and in two minutes, if foam concentrate is not added to the tank, shut the foam concentrate pump down

A 12-volt electric motor driven positive displacement plunger pump shall be provided. The pump capacity shall be from 0.1 gpm (0.38 L/min) to 1.7 gpm (6.4 L/min) at 200 psi (13.8 BAR) with a maximum operating pressure up to 400 psi (27.6 BAR). The pump shall have the capability to draw 3 foot of lift. The system will draw a maximum of 30 amps @ 12. The motor shall be controlled by the microprocessor (mounted to the base of the pump). It shall receive signals from the control module and power the 1/3 hp (.25 Kw) electric motor in a variable speed duty cycle to ensure that the correct proportion of concentrate is injected into the water stream.

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A full flow check valve shall be provided in the discharge piping to prevent foam contamination of fire pump and water tank. A 12 psi (.83 BAR) opening pressure check valve shall be provided in concentrate line.

FOAM SYSTEM RATING PLACARD FOR FOAM PRO 1600 SYSTEM

There shall be a Foam Pro part number 6032-0018 foam system rating placard provided in close proximity to the pump operator's position as required by NFPA 1901.

FOAM SYSTEM SCHEMATIC PLACARD FOR SINGLE TANK SYSTEM

There shall be a Foam Pro part number 6032-0015 foam system layout placard provided and located in close proximity to the pump operator's position as required by NFPA 1901.

PUMP, MODULE, AND RELATED ITEMS

ALUMINUM PUMP MODULE CONSTRUCTION

A pump operator side panel pump module shall be provided. It shall be assembled and mounted independently from both the chassis and the body to allow sufficient flexing and prevent component fatigue. The module shall be constructed using square aluminum tubing. The welded ends of the tubing shall be chamfered prior to welding and shall be ground smooth. A heavy duty isolation material shall be provided between dissimilar metals during the mounting process.

INDEPENDENT PUMP MODULE

The pump module shall be fabricated as individual unit independent from the body.

FRONT PUMP HOUSE ENCLOSURE

The front of the pump enclosure shall be enclosed with 0.125" aluminum tread plate.

PANEL FASTENERS

Stainless steel machine screws and lock washers shall be used to hold these panels in position. The panels shall be easily removable to provide complete access to the pump for major service.

PUMP SERVICE ACCESS - CROSSLAYS

The top third of the pump module (crosslay area) shall be crosslays shall be removable for access to the top of the pump module.

PUMP MODULE WIDTH

Pump Module to be 24.00" side (side to side).

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PUMP PANEL - SIDE MOUNT

The pump operator's control panel shall be located on the driver side of the apparatus. The pump enclosure side panels shall be completely removable and designed for easy access and servicing.

PUMP PANEL LIGHT SHIELDS

LED lights shall be installed under a polished extruded aluminum light shield, one (1) on each side of the pump module. A weather resistant switch, located on the pump operator's panel shall be provided to activate the lights.

PUMP COMPARTMENT LIGHTS

Two (2) LED lights shall be installed inside the pump compartment area, one (1) on each side. Each light shall be controlled by a switch on the lighthouse.

SIDE RUNNING BOARDS

Running boards shall be installed on each side of the pump compartment module. The running boards shall be constructed of 0.125" embossed bright aluminum tread plate. Each shall be a minimum of approximately 11.00" deep x the length of the module. The running boards shall have a 1.25" upward bend on the inside edge to act as a kick plate. The aluminum tread plate shall meet recommendations for slip resistant surfaces at the time of proposal.

The running boards shall be attached to a frame mounted outrigger support structure. Each running board to have a 3.00" downward bend on the front and side faces with a 1.00" underside return for superior strength.

HINGED GAUGE PANEL

A full width, horizontally hinged gauge access panel shall be located on the left hand side of the pump module above the main control panel. Two latches shall be provided along with chain holders to prevent the front of the gauge panel from coming in contact with other panels when open.

ACCESS PANEL - RIGHT HAND SIDE

The right hand side pump panel shall be hinged upper access panel located above the main pump panel on the right side pump module.

PUMP PANEL MATERIAL

The pump module panels shall be fabricated from 14 gauge 304L stainless steel with a brushed finish.

CROSSLAY HOSEBED

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The crosslays shall be arranged on top of the pump module with the #1 crosslay toward the front of the pump house and the #2 crosslay immediately behind the first.

They shall be arranged in a double stack design with a divider in the center. Each hose storage area shall be provided with dimensions of 6.69" wide x 72.00" deep x 15.31" tall [4.26 cu. ft. each].

The crosslay hose bed floor shall be slotted to allow the swivels to extend up through the floor, allowing the pre-connected hoses to be pulled off either side of the apparatus without kinking the hose at the coupling connection. The outside edges of each side opening shall be trimmed with polished stainless steel.

Each crosslay shall be designed to have a minimum total capacity of 3.5 cubic feet as required by NFPA -1901 to accommodate a minimum of 200 feet of 1.75" fire hose.

There shall be one (1) divider in the crosslay area. The divider shall be constructed from 0.188" thick abraded aluminum plate.

PUMP ENCLOSURE HOSEBED HOSE RETENTION

A 0.188" polished aluminum tread plate crosslay cover shall be provided with a full length stainless steel hinge at the front of the cover. The cover shall be hinged to open toward the chassis cab.

CROSSLAY COMPARTMENT ENDS - VINYL FLAPS

The crosslay compartment shall be enclosed on each end using a heavy duty vinyl flap to prevent hose from accidentally unloading. The cover shall be secured with a black shock cord/ hook system on the bottom and permanently secured on the top.

The crosslay end flaps shall be Red in color.

LED WATER LEVEL GAUGE (PUMP PANEL)

One (1) Fire Research TankVision Pro model WLA300-A00 tank indicator kit shall be installed on the pump operator's panel. The kit shall include an electronic indicator module, a pressure sensor, and a 10.00' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright RGB LEDs. A wide view lens over the LEDs shall provide for a viewing angle of 180 degrees. The indicator case shall be waterproof, manufactured of Polycarbonate/Nylon material, and have a distinctive blue label.

The program features shall be accessed from the front of the indicator module. The program shall support self-diagnostics capabilities, self-calibration, six (6) programmable colored light patterns to display tank volume, adjustable brightness control levels and a datalink to connect remote indicators. Low water warnings shall include flashing LEDs at 1/4 tank, down chasing LEDs when the tank is almost empty, and an output for an audio alarm.

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The indicator shall receive an input signal from an electronic pressure sensor. The sensor shall be mounted from the outside of the water tank near the bottom. No probe shall be placed on the interior of the tank. Wiring shall be weather resistant and have automotive type plug-in connectors.

CLASS A FOAM LEVEL GAUGE (PUMP PANEL)

One (1) Fire Research TankVision Pro model WLA360-A00 tank indicator kit shall be installed on the pump operator's panel. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright RGB LEDs.

HOSE RESTRAINT LABEL - FAMA# 22

A permanent label shall be provided near any hose storage area. The label shall instruct the operator to insure that all hose is properly secured prior to placing the apparatus in motion and to provide warning of potential dangers, including injury or death, in failing to do so.

INTAKE/DISCHARGE CAP PRESSURE LABEL - FAMA# 18

A permanent label shall be provided in all areas that intakes and discharges are capped. The label shall give instruction on how to properly remove the cap. The label shall also warn of potential dangers, injury or death that be caused by failing to follow proper cap removal procedures.

TRAINED OPERATOR ONLY LABEL - FAMA# 25]

A permanent label shall be provided on the pump panel that states that only properly trained personnel should operate the apparatus and shall indicate that injury or death could occur as a result.

PUMP PANEL ID PLATE

An identification plate shall be installed on the pump operator control panel to identify the fire pump serial number, model number, and performance.

COLOR CODED PUMP PANEL LABELING AND NAMEPLATES

Discharge and intake valve controls shall be color coded in compliance to guidelines of applicable sections of NFPA standards. Innovative Controls permanent type nameplates and instruction panels shall be installed on the pump panel for safe operation of the pumping equipment and controls.

PORTABLE PUMP, DIESEL

A DARLEY model 1-1/2AGE 24K portable pump shall be installed on the apparatus.

The pump shall meet the following performance requirements:

- 20 gpm @ 310 psi (21.4 bar)
- 140 gpm @ 145 psi (10.0 bar)
- 180 gpm @ 80 psi (5.5 bar)

PUMP ENGINE

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Kubota, model D902, in-line 3 cylinder, EPA tier 4, water-cooled, overhead valve (OHV) delivering a maximum output of 24.8 hp @ 3600 RPM, 54.8 cu. in. displacement, 4-cycle, diesel fueled. The engine shall be piped to the chassis fuel system. A spark arrestor is to be provided on the engine exhaust system. A fuel reprime pump is to be provided to assist in fuel delivery to the diesel engine from the chassis tank.

An oil drain extension line shall be provided and routed to facilitate an efficient and clean oil change.

THREE YEAR FIRE PUMP WARRANTY

A three (3) year warranty for the Darley fire pump shall be provided.

PANEL CONTROL

The auxiliary pump shall have a control panel located near the midship pump module operator's position. This panel shall contain the following:

- Auxiliary pump water pressure gauge
- Vernier throttle cable
- Pump ignition on / off / start switch
- Low Oil Pressure indicator light
- Engine Overheat indicator light
- Glow Plug operational light
- Primer Button

CAB PANEL CONTROL

The auxiliary pump shall have a control panel located on the in cab console. This panel shall contain the following:

- Auxiliary pump water pressure gauge back-lighted red
- Vernier throttle cable
- Pump ignition on / off / start switch
- Low Oil Pressure indicator light
- Engine Overheat indicator light
- Glow Plug operational light
- Primer Button

PORTABLE PUMP PLUMBING

The inlet to the diesel pump shall be connected to the intake manifold with 2.00 inch stainless steel pipe and wire reinforced high pressure hose coupled with stainless steel fittings. There shall be a 2.00 inch check valve at the connection to the manifold to prevent back flow from the 2.00 inch line. The discharge of the diesel pump shall be piped with 2.00 inch stainless steel pipe and wire reinforced high pressure hose coupled with stainless steel fittings to a check valve. The other inlet to

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the check valve shall be connected to the main pump pressure side. The double check valve shall prevent water from the main pump and the diesel pump from back feeding under pressure.

WATER TANK - POLYPROPYLENE

Tank capacity shall be 300 US gallons.

The Booster tank shall be constructed of Polypropylene, and properly baffled.

Baffles shall have openings at both the top and bottom to permit movement of air and water between spaces to allow maximum flow requirements. Baffles shall form an integral part of the tank, and design shall be to provide and maintain safe road stability regardless of water level.

The tank shall be constructed of Polypropylene sheet stock. This material shall be non-corrosive, stress relieved thermoplastic, black in color and U.V. stabilized for maximum protection.

There shall be one (1) sump standard per tank. The sump shall be located at the front of the tank. The sump shall have a 4.00" FNPT threaded outlet on the bottom for a drain plug. This shall be used as a combination cleanout and drain.

FILL TOWER

Fill tower shall be installed on front corner of the tank in tank top, not to interfere with removability of the lid. It shall be of adequate size, minimum 8.00" X 8.00", to accommodate overflow and vents, to have a hinged cover and screen installed.

TANK OVERFLOW

The tank shall have a 6.00" overflow and air vent designed to prevent damage to the tank under high flow conditions and enclosed in front tank filler. Tank filler to extend upward from hose bed the same height as body sides. Overflow is to be designed and located to prevent water loss on fast stops or starts, and is also to be located not to affect traction on the rear tires.

FOAM CELL

One (1) internal foam cell shall be manufactured as part of the water tank.

The foam cell capacity shall be 15 US gallons.

The foam tank shall be integral with the water tank and shall have a rectangular fill tower with a hinged cover, pressure relief vent and a removable screen.

FIRE BODY & RELATED COMPONENTS

OVERALL DIMENSIONS

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The body shall be 108.00" Long x 95.00" wide x 64.00" high with fender well positioned for a 84.00" cab-to-axle dual rear wheel chassis. The body shall be designed to accommodate a 24.00" wide pump module.

FLOOR AND UNDERSTRUCTURE

The compartment floor shall be a single piece design made of .1875" aluminum tread bright. The floor shall be supported by front and rear extruded 6061 aluminum alloy 2.00" x 4.00" x .250" wall structural tube crossmembers and incorporating flange style direct body mounting plates. The center section of the floor shall be supported by two (2) additional crossmembers of 2.00" x 2.00" x .250" structural aluminum tube, interlocked with three (3) longitudinal 2.00" x 2.00" x .250" sections of structural aluminum tube, connecting the front most and rearmost crossmembers.

COMPARTMENT CONFIGURATION

The compartments shall be completely formed of .125" 5052-H32 aluminum alloy and shall have a tested floor area load of 300 pounds.

COMPARTMENT VENTS

Each body side compartment shall be properly vented in a manner that will minimize the possibility of moisture and road dirt entering the compartment. Venting shall be to atmosphere for front and rear side compartments. The center wheel well compartments shall be vented to the front and rear compartments.

ADJUSTABLE SHELVING TRACKS

All side body compartments be furnished with Adjustable shelving track installed. The shelving track shall include a minimum of four (4) aluminum Uni-strut style channel tracks, mounted vertically on compartment side walls or vertical partitions. There shall be one (1) formed aluminum shelf angle bracket per shelving track to mount each shelf, tray, or adjustable storage module. Shelving hardware shall be heavy-duty commercial quality, providing unlimited vertical position adjustments.

ADJUSTABLE TRAYS

Adjustable trays shall be installed as directed by the Purchaser. Trays shall be made of 0.125" smooth aluminum with a 2.00" high perimeter retaining lip with welded corners. Trays shall have a rated capacity of 300-lbs. and shall be supported by a minimum of two (2) heavy-duty shelf brackets. Trays shall have a maintenance free mill finish.

BODY SIDE RUB RAILS

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Replaceable extruded aluminum channel rub rails, 2.00" high x 1.00" deep x 0.125" wall, shall be provided below the lower side compartments. Each rub rail shall have a black rubber bumper strip and mounting stand-off spacers. All rub rail ends shall be angle cut, back toward the body to eliminate the possibility of snagging crew clothing or equipment.

FENDER PANELS

A single piece wheel well panel made of .125" aluminum shall be installed with no sharp edges to cut or damage cleaning equipment used in the wheel well area. The wheel well design shall provide for maximum wheel jounce and for use of tire chains without contacting the fender panel.

REAR WHEEL WELL LINERS

The rear wheel wells shall be equipped with replaceable circular liners to prevent road debris damage to adjacent side compartments. The liners shall be made from a single circular panel of .090" smooth aluminum and shall be the full depth of the side compartments. They shall be bolted in place and shall feature end flange bottom drains.

REAR FENDERETTES

A roll-formed, polished stainless steel fenderette shall be installed around the outboard edge of the rear wheel well openings to protect the body sides from road debris. They shall be bolted to the body and shall be replaceable.

BODY FRONT WALL OVERLAY

There shall be .125" polished aluminum tread brite provided for the entire front of the body to protect the paint from road debris and paint chipping.

TOP PROTECTION

There shall be .125" aluminum tread brite overlay provided for entire top of the body.

COMPARTMENT TOP WARNING LABEL - FAMA# 26

A permanent label shall be provided on the front and rear of the compartment tops on both sides warning that the area is not designed, constructed or intended to be a stepping, standing or walking surface. The label shall state that the surface is not intended for this purpose and indicate potential injury or death in doing so.

REAR MUD FLAPS

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A pair of black rubber mud flaps, with the Manufacturer's logo, shall be provided and installed behind the rear wheels.

REAR PLATFORM STEP

A modular bolt-on rear platform step made of .188" embossed aluminum tread brite shall be installed on the rear of the apparatus to provide a full width step area with sufficient support to prevent deflection when in use by several crew members. The outside edges of the rear platform shall be flush with the side body rub rails to maintain a uniform appearance. The step shall protrude 10.00" back from the rear of the body and shall be spaced away from the body to allow water run-off.

ROLL-UP DOORS

All lower compartment doors shall be equipped with AMDOR brand roll-up doors. The slats shall be 1.00" double wall aluminum with continuous ball and socket hinge joints designed to prevent water ingress and weather tight recessed dual durometer seals.

The interior door curtains shall be smooth to prevent equipment hang-ups. The door tracks and side frames shall each be one-piece aluminum. Each side seal shall be recessed, and non-marring with UV stabilizers to prevent warping.

The bottom panel flange shall have cut-outs for ease of access with gloved hands. The door strikers shall provide support beneath the lift bar to prevent door curtain bounce and potential false door ajar indications.

LEFT SIDE COMPARTMENT IN FRONT OF REAR WHEELS, L1

There shall be a full height compartment located ahead of the rear wheels on the left side of the apparatus body.

- Dimensions: 29.50" wide x 59.00" high x 22.0" deep.
- Door Opening: 24.626" wide x 45.938" high.
- Useable Depth: 19.6875".

The compartment shall have an Amdor roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) 41.00" Luma Bar LED strip light shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) full depth adjustable shelf/ shelves located in the compartment.

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LEFT SIDE ABOVE WHEEL COMPARTMENT, L2

There shall be a standard height compartment located above the rear wheels on the left side of the apparatus body.

- Dimensions: 47.00" wide x 38.00" high x 22.00" deep.
- Door Opening: 44.876" wide x 24.938" high.
- Useable Depth: 19.6875".

The compartment shall have an Amdor roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) 21.00" Luma Bar LED strip light shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) full depth adjustable shelf/ shelves located in the compartment.

LEFT SIDE COMPARTMENT BEHIND REAR WHEELS, L3

There shall be a standard height compartment located above the rear wheels on the left side of the apparatus body.

- Dimensions: 29.00" wide x 59.00" high x 22.00" deep.
- Door Opening: 23.50" wide x 53.00" high.
- Useable Depth: 19.6875".

The compartment shall have an Amdor roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) 41.00" Luma Bar LED strip light shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) full depth adjustable shelf/ shelves located in the compartment.

RIGHT SIDE COMPARTMENT IN FRONT OF REAR WHEELS, R1

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There shall be a full height compartment located ahead of the rear wheels on the right side of the apparatus body.

- Dimensions: 29.50" wide x 59.00" high x 22.0" deep.
- Door Opening: 24.626" wide x 45.938" high.
- Useable Depth: 19.6875".

The compartment shall have an Amdor roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) 41.00" Luma Bar LED strip light shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) full depth adjustable shelf/ shelves located in the compartment.

RIGHT SIDE ABOVE WHEEL COMPARTMENT, R2

There shall be a standard height compartment located above the rear wheels on the right side of the apparatus body.

- Dimensions: 47.00" wide x 38.00" high x 22.00" deep.
- Door Opening: 44.876" wide x 24.938" high.
- Useable Depth: 19.6875".

The compartment shall have an Amdor roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) 21.00" Luma Bar LED strip light shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) full depth adjustable shelf/ shelves located in the compartment.

RIGHT SIDE COMPARTMENT BEHIND REAR WHEELS, R3

There shall be a standard height compartment located above the rear wheels on the right side of the apparatus body.

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- Dimensions: 29.00" wide x 59.00" high x 22.00" deep.
- Door Opening: 21.626" wide x 45.938" high.
- Useable Width: 26.50".
- Useable Depth: 19.6875".

The compartment shall have an Amdor roll up door. The door shall have a satin finish.

COMPARTMENT LIGHT(S)

One (1) 41.00" Luma Bar LED strip light shall be installed inside the compartment.

The compartment light(s) shall be controlled by a magnetic "On-Off" switch located on each compartment door.

ADJUSTABLE SHELVING TRACKS

There shall be vertically mounted uni-strut shelf trac for shelving installation.

ADJUSTABLE SHELF

There shall be One (1) full depth adjustable shelf/ shelves located in the compartment.

REAR BODY CONFIGURATION

The rear of the apparatus body shall have a flat back design, with one compartment.

REAR CENTER COMPARTMENT

There shall be a compartment located at the rear of the apparatus body.

- Dimensions: 50.00" wide x 28.00" high x 28.00" deep.

PORTABLE PUMP MOUNTING

The portable pump listed in the specifications shall be mounted in the rear compartment.

HINGED REAR ACCESS PANEL

A full width, horizontally hinged access panel shall be located on the rear of the body. Two (2) latches shall be provided along with gas shocks to hold the panel open when servicing the portable pump.

HOSE BED CONSTRUCTION

The body shall have a bolt together removable hose bed in the upper center section of the body. The floor of the hose bed shall be constructed using 6.00" wide aluminum hose bed slats. Two (2) cross car Unistrut style channels shall be incorporated in the design for divider mounting.

HOSE BED CROSS DIVIDER

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The forward 22.00" section of the hose bed shall have a bolt in cross car divider creating a dunnage area for the water and foam tank fill tower(s). The floor of the dunnage area shall be formed aluminum sheet.

HOSE BED DIMENSIONS

The usable hose bed dimensions shall be 49.75" wide x 85.00" long x 15.00" tall.

HOSE BED STORAGE CAPACITY

The hose bed shall be designed to have a storage capacity for a minimum of 34.00 cubic feet of fire hose.

HOSE BED DIVIDER(S)

One (1) fully adjustable hose bed divider panel(s) made of .188" smooth aluminum plate shall be installed lengthwise, in the hose bed. Each shall have a natural mill finish and shall be supported along the full-bottom length with a single-piece aluminum foot extrusion.

There shall be a hand grip cut-out on the trailing edge of each hose bed divider. The cut-out shall be properly dressed to remove sharp edges and specifically sized for use with a gloved hand in adjusting the position of the hose bed divider.

HOSE BED COVER WITH VELCRO FASTENERS

A heavy duty vinyl coated nylon hose bed cover shall be provided to protect the hose load from the weather. The cover shall extend from the front of the hose bed to the rear and then extend downward to cover the exposed rear of the bed and from the left side to the right side of the hose bed.

The cover shall be secured to the apparatus using velcro on the sides and lift dots on front. The rear of the cover shall be secured to the apparatus using positive mechanical latches.

The hose bed cover shall be Red in color.

HARD SUCTION TRAYS - LEFT SIDE

Two (2) aluminum hard suction trays shall be installed on the top of the compartment on the left hand side of the apparatus.

The suction hose shall be held in place with straps attached to the tray with footman loops.

The suction storage shall have capacity for two (2) 8' sections of hard suction hose.

EXTERIOR LADDER MOUNTING

Exterior ladder mountings shall be provided for the specified ladders over the right side compartments of the apparatus body.

The ladder storage shall have capacity for one (1) aluminum 12 ft. two-section extension ladder.

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SCBA BOTTLE COMPARTMENTS

Three (3) SCBA bottle compartments shall be installed in the wheel well area of the body. One (1) shall be installed on the left hand side, and two (2) on the right hand side. Each shall have a Cast Products door assembly. Each compartment shall allow the storage of an SCBA cylinder up to 7.50" in diameter x 22" deep.

FUEL PIPING, CAP, & GUARD

There shall be a fuel filler tub & cap with a Cast Products aluminum door provided to the left side rear wheel. It shall be clearly marked, "ULTRA LOW SULFUR DIESEL FUEL ONLY".

DEISEL EXHAUST FLUID FILL

The diesel exhaust fluid fill shall be located RH side pump panel. It shall be labeled "Diesel Exhaust Fluid Only".

FOLDING STEPS - LH SIDE REAR OF BODY

Two (2) Innovative Controls model 3004234 folding steps shall be provided on the left hand side rear of the body. Each step shall have two (2) cast-in handles, that are large enough for use while wearing gloves. The step(s) shall exceed the NFPA requirements for stepping surface and slip resistance. There shall be a barrier material installed between the body surface and the steps.

STEP LIGHTS

There shall be one (1) LED light incorporated into the folding step assembly above the stepping surface.

The light(s) shall be wired to activate with the parking brake.

EXTERIOR GRAB RAILS

Each grab rail shall be non-slip, 1.25" diameter extruded polished aluminum grab rails with rubber inserts designed to provide maximum gripping ability, strength, and durability. The rails shall comply with NFPA 1901-2009.

GRAB RAILS, REAR STEP, VERTICAL

Two (2) extruded aluminum non-slip grab rails, approximately 18.00" in length, shall be provided and vertically mounted on the rear of the apparatus, one (1) on each side of the body.

12 VOLT ELECTRICAL SYSTEM

The truck shall have a 12-Volt electrical system.

All wiring will be run in convoluted high temperature plastic loom. Wiring shall be color and function coded and will be of adequate size to handle the assigned load. All solenoids, relays, and terminal blocks will be located in an easily accessible area.

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All circuits provided shall have properly rated low voltage over current protective devices.

All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. 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. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

All under side terminal junctions shall be fully enclosed in sealed plastic weather proof boxes.

Electromagnetic interference suppression shall be provided as required to satisfy the radiation limits specified in SAE J551/1.

NFPA 1901 CERTIFIED 12 VOLT ELECTRICAL SYSTEM

The 12-volt apparatus body electrical system shall be provided and shall be in compliance with NFPA 1901 testing and certification procedures as follows:

NFPA MINIMUM ELECTRICAL LOAD DEFINITION

The NFPA 1901 defined minimum electrical load shall consist of the total amperage required to simultaneously operate the following in a stationary mode:

1. Propulsion engine and transmission.
2. The clearance and marker lights.
3. Communication equipment. 5 amp default.
4. Illumination of all walking surfaces, the ground at all egress points, control and instrumentation panels and 50% of total compartment lighting.
5. Minimum warning lights required for "blocking right of way" mode.
6. The current to simultaneously operate and fire pump and all specified electrical devices.
7. Anything defined by the purchaser, in the advertised specifications, to be critical to the mission of the apparatus.

RESERVE CAPACITY TEST

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The first electrical test to be performed will be the Reserve Capacity Test. All items listed in NFPA Minimum Load Definition shall be activated with the engine shut off. After 10 minutes of operation, the items 1-7 shall be deactivated. After deactivation, the battery system shall have ample reserve to start the engine.

ALTERNATOR PERFORMANCE TEST AT IDLE

The second electrical test to be performed shall be Alternator Performance Test at Full Load. All electrical loads shall be activated with the engine running up to the governed rpm for two hours. During the test, the system voltage shall not drop below 11.7 volts or have excessive battery discharge for more than 120 seconds. Any loads not defined in the NFPA Minimum Electrical Load may be load managed to pass test.

TEST CONDITIONS

All electrical testing shall be performed with the engine compartment at approximately 200 degrees.

INNOVATIVE CONTROLS MULTIPLEXING SYSTEM

The electrical system shall utilize an Innovative Controls multiplexing system where applicable. A series of Multiplexing Input/Output Modules shall be installed. The Input/Output modules shall permit the multiplexing system to reduce the amount of wiring and components used. These modules shall be waterproof allowing installation outside of enclosed areas.

HAZARD LIGHT

One (1) flashing red LED light, located in the driving compartment, the light shall be illuminated automatically whenever any compartment door is ajar.

The hazard light shall be marked with a sign that reads "Do Not Move Apparatus When Light is On".

The warning light shall be interlocked to the parking brake and shall only alert the driver when the parking brake is released. The light shall also be used to signal that other ancillary equipment such as racks light towers etc. are not in their "ready for transport" position.

LOW VOLTAGE INDICATOR

The Low Voltage Alarm output is activated whenever the system voltage drops below 11.9 VDC for more than 10 seconds. The Low Voltage Alarm output goes inactive when the system voltage rises to 12.1 VDC on a 12 volt system for more than 10 seconds. The Low Voltage Alarm output is compliant to NFPA 1901 requirements.

ROCKER SWITCH PANEL - EIGHT (8) POSITION

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A lighted eight (8) position rocker type switch panel shall be installed to provide the ability to de-activate individual lighting units.

MASTER WARNING SWITCH

A master switch shall be included in the main rocker switch panel. The switch shall be labeled "Master Warning" for identification. The switch shall feature control over all devices wired through it. Any warning device switch shall automatically power up when the master switch is activated.

UNDERBODY/CAB GROUND LIGHTS

LED ground illumination lights, with outward facing angle brackets shall be provided and installed in the following locations:

CHASSIS GROUND LIGHTS

Four (4) LED ground lights with outward facing angle brackets shall be installed, one (1) under each chassis door.

FRONT OF BODY GROUND LIGHTS

Two (2) LED ground lights with outward facing angle brackets shall be installed under the front of the body. One (1) light shall be located on the driver side and one (1) light shall be located on the officer side of the apparatus.

REAR STEP GROUND LIGHTS

Two (2) LED ground lights with outward facing angle brackets shall be installed under the rear step of the apparatus, one (1) each side.

GROUND LIGHT SWITCHING

The cab and body ground lights shall activate by engaging the parking brake.

REAR DIRECTIONALS

Rear directional lighting shall be supplied as follows:

Two (2) Whelen model M62BTT LED brake/tail lights shall be installed on the rear of the body. Each light shall have a red lens.

Two (2) Whelen model M62T Amber LED turn signal lights shall be installed on the rear of the body. Each light shall have a color lens.

Two (2) Whelen model M62BU LED reverse lights shall be installed on the rear of the body.

HOUSINGS FOR DIRECTIONALS

The two (2) sets of Whelen rear signal lights shall each be housed in a vertical chrome plated housing, designed to hold four (4) lights each. The fourth opening shall be for the lower rear warning lights. The lights shall be mounted in order, from top to bottom, as described above.

DOT MARKER LIGHTS AND REFLECTORS

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LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements. All marker lights shall be incorporated into the headlight circuit of the cab/chassis.

The side body panels shall be furnished with marker lights installed as follows:

- Four (4) 0.75" amber LED marker lights, one (1) on each side at front top corner of body.
- Four (4) 0.75" red LED marker lights, one (1) on each side at rear top corner of body.

The rear body panel, centered above the bumper, shall be furnished with marker lights installed as follows:

- Three (3) 0.75" red LED marker lights, as close as practical to the vertical centerline. Centers spaced not less than 6.00" or more than 12.00" apart.

Four (4) red reflectors shall be provided on the apparatus rear, one (1) each side and two (2) on the rear.

LICENSE PLATE BRACKET

There shall be a license plate bracket mounted on the rear of the apparatus. A clear LED light shall be incorporated into the bracket

TRAFFIC ADVISER WARNING LIGHT

One (1) Whelen LED "Traffic Advisor", model TAL85 48.00", rear directional light shall be installed. The light shall be equipped with eight (8) lamps. The traffic advisor shall be activated by the Whelen TACTL5 control head. The control head shall be conveniently located near the driver's position. The traffic advisor shall be surface mounted at the rear of the apparatus body, directly below the hose bed. An aluminum guard shall cover the the top of the traffic advisor to protect it from the unloading/ loading of hose. It shall be located as close to the centerline of the body as possible.

SIDE FACING UPPER FRONT BODY SCENE LIGHTS

One (1) pair of Whelen M6 Series LED scene lights shall be installed, one (1) each side of the upper front portion of the apparatus body.

The driver side scene light shall be a Whelen model M6ZC.

The officer side scene light shall be a Whelen model M6ZC.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

SIDE FACING UPPER REAR BODY SCENE LIGHTS

One (1) pair of Whelen M6 Series LED scene lights shall be installed, one (1) each side of the upper rear portion of the apparatus body.

The driver side scene light shall be a Whelen model M6ZC.

The officer side scene light shall be a Whelen model M6ZC.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

UPPER REAR BODY SCENE LIGHTS

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One (1) pair of Whelen M6 Series LED scene lights shall be installed, one (1) each side of the upper rear portion of the apparatus body.

The driver side scene light shall be a Whelen model M6ZC.

The officer side scene light shall be a Whelen model M6ZC.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

SCENE LIGHT SWITCHING

Three (3) rocker switches with indicators shall be provided to activate the 12-volt scene light(s). The left hand side lights, right hand side lights, and the rear lights shall each be individually switched. The switches shall be located on the cab control console.

DUAL FUNCTION SCENE LIGHT(S)

The rear scene lights shall activate automatically upon placing the transmission into reverse.

REAR VISION SYSTEM

One (1) complete backup camera system shall be provided. There shall be (1) camera located at the rear of the apparatus as close to the centerline as possible. The camera shall be capable of viewing the entire area not visible in the side view mirrors. The camera shall have a 7.00" color display mounted in view of the driver. The system shall include audio transmission from the camera.

The rear vision camera shall be wired to automatically activate when the chassis transmission is placed in reverse.

The monitor for the rear vision system shall be mounted in place of the rear view mirror.

NFPA AUDIBLE AND LIGHTING WARNING PACKAGE

The following warning light package shall include all of the minimum warning light and actuation requirements for the current revision of the NFPA 1901/ 1906. The lighting as specified shall meet the requirements for both "Clearing Right of Way" and "Blocking Right of Way" which includes disabling all white warning lights when the apparatus is in "Blocking Right of Way" mode.

WARNING LIGHT FLASH PATTERN

All of the perimeter warning lights shall be set to the default NFPA flash pattern as provided by the warning light manufacturer.

LIGHTBAR

One (1) WHELEN model JE2NFPA 56.00" LED lightbar shall be supplied and mounted. The lightbar shall have clear lenses and contain the following modules:

Four (4) RED LIN6 LED modules, two (2) on each corner.

Four (4) RED CON3 LED modules, across the front

Two (2) WHITE CON3 LED modules, on the front

The forward facing white lights shall be automatically disabled for the "Blocking Right of Way" mode.

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LIGHT BAR SWITCHING

One (1) momentary rocker switch with indicator shall be installed on the switch panel in the cab to control the light bar. The switch shall be labeled "LIGHT BAR". The switch shall only be active when the master warning switch is engaged.

SIDE FACING UPPER FRONT BODY WARNING LIGHTS

One (1) pair of Whelen model M6 series LED warning lights shall be installed, one (1) each side of the upper front portion of the apparatus body.

The driver side warning light shall be a Whelen Model M6RC red Super-LED with clear lens.

The officer side warning light shall be a Whelen Model M6RC red Super-LED with clear lens.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

SIDE FACING UPPER REAR BODY WARNING LIGHTS

One (1) pair of Whelen model M6 series LED warning lights shall be installed, one (1) each side of the upper rear portion of the apparatus body.

The driver side warning light shall be a Whelen Model M6RC red Super-LED with clear lens.

The officer side warning light shall be a Whelen Model M6RC red Super-LED with clear lens.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

UPPER REAR BODY WARNING LIGHTS

One (1) pair of Whelen model M6 series LED warning lights shall be installed, one (1) each side of the upper rear of the apparatus body.

The driver side warning light shall be a Whelen Model M6RC red Super-LED with clear lens.

The officer side warning light shall be a Whelen Model M6RC red Super-LED with clear lens.

Each light shall be mounted with a Whelen Model M6FC chrome flange.

UPPER WARNING LIGHT SWITCHING

One (1) rocker switch with indicator shall be installed on the switch panel in the cab to control the upper warning lights. The switch shall be labeled "UPPER WARNING". The switch shall only be active when the master warning switch is engaged.

LOWER FRONT WARNING LIGHTS

One (1) pair of Whelen model M4 Series LED warning lights shall be installed, one (1) each side one the front of the chassis cab.

The driver side warning light shall be a Whelen Model M4RC red LED with clear lens.

The officer side warning light shall be a Whelen Model M4RC red LED with clear lens.

Each light shall be mounted with a Whelen Model M4FC chrome flange.

LOWER INTERSECTION WARNING LIGHTS

One (1) pair of Whelen model M4 LED warning lights shall be installed, one (1) each side of the chassis cab.

The driver side warning light shall be a Whelen Model M4RC red LED with clear lens.

Fouts Bros Fire Equipment

The officer side warning light shall be a Whelen Model M4RC red LED with clear lens. Each light shall be mounted with a Whelen Model M4FC chrome flange.

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Whelen model M7 Series LED warning lights shall be installed, one (1) each side of the apparatus, mid-body.

The driver side warning light shall be a Whelen Model M7RC red Super-LED with clear lens.

The officer side warning light shall be a Whelen Model M7RC red Super-LED with clear lens.

Each light shall be mounted with a Whelen Model M7FC chrome flange.

LOWER REAR WARNING LIGHTS

One (1) pair of Whelen model M6 Series LED warning lights shall be installed, one (1) each side of the lower rear of the apparatus body.

The driver side warning light shall be a Whelen Model M6RC red Super-LED with clear lens.

The officer side warning light shall be a Whelen Model M6RC red Super-LED with clear lens.

The warning lights on the rear of the body shall be mounted in lower section of each tail light casting.

LOWER WARNING LIGHT SWITCHING

One (1) momentary rocker switch with indicator shall be installed on the switch panel in the cab to control the lower warning lights. The switch shall be labeled "LOWER WARNING". The switch shall only be active when the master warning switch is engaged.

ELECTRIC SIREN AND CONTROL

One (1) Whelen model #295SLSA1 electronic siren shall be mounted in the cab. This unit shall feature an electronic air horn, wail, yelp, hi-lo and shall have a hard wired PA microphone.

ELECTRONIC SIREN SPEAKER

One (1) Whelen model SA315P 100 watt speaker shall be provided. The speaker shall produce a minimum sound output of 120 dB at 10 feet to meet current NFPA 1901/1906 requirements.

The speaker shall be located on the right hand side of the bumper.

SIREN NOISE WARNING LABEL - FAMA# 42

A permanent label shall be provided inside the driver's door warning of potential injury that could be received from the noise of the siren. The label shall also state safety precautions that should be taken when the siren is in use.

PAINT PROCESS

The body shall be totally removed from the chassis during the painting process to insure the entire unit is covered.

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The body and all parts shall be thoroughly washed with a grease cutting solvent PPG436 prior to any sanding. After the body has been sanded, it shall be washed again with PPG436 to remove any contaminants on the surface.

CHASSIS PAINT

The chassis shall be painted by the OEM Chassis Manufacturer.

PAINT FINISH

The body shall be painted with a PPG Delfleet Evolution Paint System.

As part of the curing process the painted body shall go through a baking process. The painted components shall be baked at 185 degrees for 3 hours to achieve a complete coating cure on the finished product.

After bake and ample cool down time, the coated surface shall be sanded using 3M 1000, 1200, and or 1500 grit sandpaper to remove surface defects. In the final step, the surface shall be buffed with 3M Super-duty compound to add extra shine to coated surface. No more than .5 mil shall be removed in this process.

All products and technicians shall be certified by PPG every two (2) years.

ANTI-CORROSION PROTECTION

Where dissimilar metals must be joined, overlaid, share perforations or otherwise come in contact with each other to achieve construction, performance or aesthetic requirements, such items shall be separated by a continuous contact, nonconductive coating or film to prevent or otherwise mitigate the effects of electrolysis. Only stainless-steel hardware and fasteners shall be used in the construction of the apparatus. Where stainless steel fasteners pass through an aluminum component, the fastener contact surfaces, including the head, washer and nut shall be coated with ECK anti-corrosion material.

BODY UNDERCOATING

The body underside, including the sub-frame and the inside of the wheel wells, NOT THE WHEEL WELL LINERS, shall be thoroughly coated with SWT commercial automotive undercoat and sound deadening material to protect the body module against corrosion. The coating shall be black and shall be tested to ASTM B117 Salt Spray test for 1,000 hours at 10-mils.

SIDE COMPARTMENT FINISH, ZOLATONE

The apparatus side compartment interiors are to be coated with Zolatone, a polychromatic, modified nitrocellulose coating with a flat background color with accenting fleck colors. The compartments shall be cleaned with a grease remover, and then the surface sanded and prepared for painting. The Zolatone finish is washed and waxed like paint, and is resistant to man solvents and wear.

PAINT COLOR

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The apparatus body paint shall be "cross referenced" from the chassis paint, and shall be painted to match the main chassis color as close as possible.

WHEEL RIMS

The chassis wheels shall be as furnished by the chassis OEM. No additional finishes shall be provided by apparatus manufacturer.

CHEVRON STRIPING

At least 50% of the rear of the unit shall be covered with Red and fluorescent Yellow-Green alternating 6.00" stripe in an inverted Chevron pattern.

REFLECTIVE LETTERING - PURCHASER SUPPLIED

Reflective lettering shall be installed by the purchaser.

FOUTS BROS. LOGO PLATE(S)

Two (2) Fouts Bros. logo plate(s) will be affixed to the finished apparatus.

LOOSE EQUIPMENT

The following items shall be provided and shipped loose with the completed apparatus at the time of delivery:

SUCTION HOSE

Two (2) 6.00" X 8' section(s) of KOCHEK, PVC type hard, suction hose shall be provided on the apparatus. The hose(s) shall be light weight type with Pyrolite, Long Handle Female x Rocker Lug Male, NST threads. The hose shall be black in color.

EXTENSION LADDER, 2 SECTION

One (1) 12 foot, Alco-Lite model# PEL-12, two (2) section aluminum extension Ladder shall be supplied with the finished apparatus.

ONE YEAR APPARATUS WARRANTY

The complete apparatus detailed herein shall be warranted against defects in materials and workmanship for a period of twelve (12) months, effective upon pick up or delivery of the completed apparatus to the purchaser, as detailed in the respective warranty documents. Any unauthorized alterations or modifications to the apparatus shall void this warranty.

Other warranties, as provided by individual component manufacturers may extend beyond this warranty.

APPARATUS BODY WARRANTY, TEN YEAR

The apparatus body shall have a structural warranty, including panels and sub-frame, against bending, cracking, twisting or otherwise deforming for a period of ten (10) years, effective upon final

Fouts Bros Fire Equipment

payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the body shall void this warranty.

PLUMBING WARRANTY, TEN YEAR

A Stainless Steel Plumbing/Piping warranty shall be provided by the apparatus manufacturer for products of its manufacture to be free from defects in material and workmanship, under normal use and service, for a period of ten (10) years effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the plumbing shall void this warranty.

PAINT WARRANTY, FIVE YEAR

The finish paint as used on the proposed apparatus shall be warranted against defects in materials and workmanship for a prorated period of five (5) years, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the apparatus shall void this warranty.

APPARATUS ELECTRICAL WARRANTY, TWO YEAR

The apparatus electrical system as detailed herein shall have an electrical warranty against defects in materials and workmanship for a period of two (2) years, effective upon final payment in full by the Purchaser, and pick up or delivery of the completed apparatus to the Purchaser. Any unauthorized alterations or modifications to the electrical system shall void this warranty.

AKRON BRASS WARRANTY

The Akron Brass valves shall be warranted by Akron Brass for a period of ten (10) years from the date of delivery. The warranty for electronics shall be warranted by Akron Brass for a period of five (5) years from date of delivery.

WHELEN WARNING LIGHT / SIREN WARRANTY

Whelen products shall be covered by a direct warranty for up to a maximum two (2) years from date of purchase (not to exceed three (3) years from date of manufacture), with proof of purchase. Whelen siren speakers, when used with a Whelen siren amplifier, are covered by a two (2) year warranty from the date of manufacture. Heavy-Duty motor assemblies (so marked) are covered by a direct warranty for up to three (3) years from date of manufacture.

WHELEN HDP / 5 YEAR WARRANTY

Whelen Automotive Non-Lightbar Strobe Power Supplies, LED Ballasts and LED Products bearing the official HDP label and manufactured to HDP standards shall be covered by a direct warranty for up to five (5) years from date of manufacture.

WHELEN LIMITED LIFETIME WARRANTY

The following Whelen products shall be covered by a lifetime warranty.

Fouts Bros Fire Equipment

Freedom Series Lightbars, M-Series Lights, L31 Series, B6 Series, Micro Freedom Series, Pioneer Scene Lighting (Excluded Pioneer Life), PSTANK2.

KUSSMAUL ELECTRONICS WARRANTY

All products manufactured by Kussmaul Electronics Company Inc. are warranted to be free of defects in material and/or workmanship. Kussmaul Electronics shall repair or replace without charge, any material or defects which become apparent in normal use within the specified warranty period.

All Electronic items are warranted for three (3) years

Auto and Air Ejects are warranted for two (2) years

Auto Pumps are warranted for one (1) year