DEPENDABLE®
EMERGENCY VEHICLES

FOUTS FIRE

BUILD SPECIFICATION

STOCK CONFIGURATIONS

DEPENDABLE FOUTS QUICK ATTACK UNIT

MAY 2025

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

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 required certificate will be considered non responsive 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.

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.

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 1900.

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 1900.

COMPLIANCE

The fire apparatus shall be built to the purchaser's requirements in compliance to all State, Local, and Federal highway safety requirements. The vehicle is not intended to meet any or all standards of the NFPA 1900 requirements.

CAB SAFETY SIGNS

The following safety signs shall be provided in the cab:

- One (1) FAMA 10 sign shall be visible to the driver. "Flying Object Crash Hazard. All equipment required to be used in emergency response must be securely fastened. Loose items may injure or kill during a crash."

- One (1) FAMA 07 sign shall be visible from each seat. "Crash Hazard. Occupants must be seated and belted when vehicle is in motion. Use only OEM approved belts. Unbelted occupants

- One (1) FAMA 15 sign shall be visible from each seat. "Crash Hazard. Do not wear helmet while seated. Serious head or neck injury may result from helmet use in cab. Failure to comply may injure or kill."

- One (1) FAMA 17 sign shall be visible to the driver. "Backing Hazard. Ensure that personnel are clear before driving in reverse. Always use a spotter when backing. Failure to comply may injure or kill.

- One (1) FAMA 42 sign shall be inside of the driver door. "Sirens produce loud sounds that may damage hearing. Roll up windows. Wear hearing protection. Use only for emergency response. Avoid exposure to siren sound outside of vehicle."

- "Do Not Move Apparatus When Light Is On" sign adjacent to the warning light indicating a hazard if the apparatus is moved (as described in subsequent section).

FAMA SAFETY GUIDE

One (1) copy of the latest edition of FAMA's Fire Apparatus Safety Guide shall be provided with the completed apparatus.

COMMERCIAL CHASSIS

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"

GVWR: 18,000 pounds

Steering: Hydraulic power-assist re-circulating ball

Driving Front Axle and Suspension: HD front package, firm ride suspension package, mono-beam non-independent front suspension, anti-roll bar, HD front shocks, HD front coil springs

Rear Axle and Suspension: wide track, rigid rear axle, HD rear suspension package, anti-roll bar, HD rear leaf springs, HD rear shocks

Braking System: four (4) wheel disc brake system with front and rear vented discs and Anti-Lock (ABS)

POWERTRAIN

- 6.7L Power Stroke V8 Turbo Diesel Engine, OHV (32-valve)
- Horsepower: 330 HP @ 2,200 RPM
- Rated Torque: 950 lb.-ft. @ 1,850 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.

CHASSIS FUEL TANK

40 gallon aft-axle with auxiliary fuel tap

NFPA 1900 section 9.3.4.6 requires a means for draining the tank without removing the tank.

As provided by the chassis manufacturer, there will be no means to drain the fuel tank. This apparatus will be non-compliant to NFPA 1900 standards effective at time of contract execution.

REAR AXLE RATIO

The ratio of the rear axle shall be 4.10 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
- Black Fender Moldings

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

POWER EQUIPMENT GROUP

The electrical power equipment group shall be provided on the chassis. The option package shall include power door locks, power side windows and a momentary down driver's window.

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.

AUDIO

AM/FM stereo, MP3 player
Regular Cabs standard with 4-speakers, Super and Crew Cabs standard with 6-speakers.

GRILLE

Black painted

BUMPER

Chrome Steel with grained MIC top cover.

WHEELS

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

TIRES

Six (6) 225/70Rx19.5G BSW A/P 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
Diesel Engine	60 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

CHASSIS MODIFICATIONS

The following modifications and installations shall be performed on the chassis upon delivery to the apparatus manufacturer:

RUNNING BOARDS

One (1) set of DeeZee Rough Step running boards shall be mounted to each side of the chassis. The running boards shall be constructed of heavy duty aluminum and have a black powder coated finish.

FRONT MOUNTED WINCH

A WARN model M12000 electric winch with 12,000 pound rated line pull shall be installed in the brush guard. The winch shall be equipped with 125.00' of 3/8" diameter wire rope, clevis hook and a 4-way roller fairlead. The winch shall be operated through a 12.00' pendant with a hand held control. The winch shall include an automatic mechanical cone brake. It shall feature an easy to use free-spooling rotating ring gear clutch.

TOWING HITCH RECEIVER

A trailer towing hitch receiver 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.

Two safety chain attachment points shall be provided near the hitch point

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.

FRONT AND REAR SUPER SINGLE TIRES

The front and rear tires shall be Continental MPT81 335/80R20, severe service radial all terrain tread. Each tire shall have a rated capacity of 6,780 lbs at 94 psi, max speed of 68 mph. Tire dimensions: 40.63" OD. Tread width: 10.75"

FRONT AND REAR SUPER SINGLE WHEELS

Wheels for the front and rear axles shall be 20.00" x 11.00" aluminum disc. Each wheel shall have a ten (10)-hole pattern and be DOT compliant.

SPARE TIRE - SUPER SINGLE

One (1) full size spare tire and wheel shall be included.

BUCKSTOP FRONT BUMPER

The stock front bumper shall be removed and replaced by the OEM with a Buckstop steel front bumper with grille guard and headlight covers. It shall be constructed of 0.25" steel in the primary impact zone, and 0.375" steel under the headlights. A winch mount shall be included in the bumper and shall be capable of mounting most 4.50" x 10.00" bolt pattern winches. The bumper shall be black in color.

TIRE PRESSURE MANAGEMENT

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 four (4) 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.

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.

EXHAUST HEAT SHIELD

A heat shield shall be installed under the body in the areas where the exhaust system is routed.

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 TOW HOOKS

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

TOW HOOKS – REAR

Two (2) heavy duty cast iron tow hooks, shall be installed at the rear of the body above the rear step. The tow hooks shall be installed, one (1) on each side, bolted to the chassis frame rails.

REAR MUD FLAPS

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

CENTER CONSOLE

A center console fabricated from 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.

SEATING MODIFICATION

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

BATTERY SYSTEM

The battery system shall be supplied with the chassis.

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 12v 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 CHARGER, BUILT-IN BATTERY SAVER

One (1) Kussmaul Auto Charge 1000 PLC, model #091-215-12, 15 amp battery charger and 3 amp battery saver shall be installed.

The Auto Charge 1000 PLC with Parasitic Load Compensation (PLC) is a compact, microprocessor controlled, completely automatic, single channel battery charger designed for vehicles with a single battery system. The PLC charger is designed to withstand the shock and vibration encountered by vehicle mounted equipment.

The battery saver component shall eliminate drain on vehicle's battery system when vehicle is not in use. The system shall automatically disconnect auxiliary vehicle loads from battery when the charger is energized.

Parasitic Load Compensation feature is designed especially to meet the heavy duty requirements of emergency vehicles. Parasitic load compensation allows you to input the total number of parasitic load amps on the vehicle. Then the charger will shift the absorption stage set point so the battery voltage will drop to the float voltage when the desired current is reached. This will lead to a longer battery life and no overcharging or overheating.

The charger shall have the following operational specifications:

a) 120 volts AC input at 3.5 amps
b) Battery Charger: 12 volts DC output at 15 amps
c) Battery Saver: 3 amps 12 volt DC output
d) 8 Pin Selector Switch on front panel
    a. Battery Type: Lead-Acid, Gel Cell, AGM or Odyssey
    b. Float / 3-Step
    c. Battery Saver ON/OFF
    d. Parasitic Load Compensation
e) AC power applied light on front panel
f) System LED Status Indicator on front panel
g) Dimensions of: 9.35" high x 5.9" wide x 4.725" deep and weighs 11 lbs.

120 VOLT SHORELINE CONNECTION - "SUPER" AUTO EJECT

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 Kussmaul model # 5-20P-H, 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 091-55-234-YW universal single battery bank voltage display/ auto eject cover shall be supplied with the charger.

The cover shall be yellow in color.

SHORELINE RECEPTACLE LOCATION

The shoreline receptacle shall be located on the left hand side of the apparatus in a pre-determined location by the manufacturer.

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.

REAR PUMP "DROP IN"

The pump shall be mounted at the apparatus rear in the open rear cavity of the body.

ELECTRIC START WIRING TO CHASSIS

The 12 volt positive and negative cables shall be provided from the chassis battery to the fire pump area, wired through the master disconnect solenoid system.

PORTABLE PUMP, DIESEL

A DARLEY model 1-1/2AGE 24K, high pressure, low volume pump shall be furnished and installed.

The pump shall meet the following performance requirements:

20 gpm @ 310 psi
140 gpm @ 145 psi
180 gpm @ 80 psi

It shall be a single stage centrifugal pump, bolted directly to the engine, with a 2.00" NPT suction inlet, and a 2.00" NPT discharge outlet. The volute and pump head shall be made from high strength aluminum alloy.

The impeller shall be a bronze, accurately balanced and splined to the pump shaft for a precision fit. With a double seal ring design which eliminates end thrust.

The pump shaft shall be stainless steel, corrosion resistant, precision ground and splined for broached impeller hubs, to resist wear, vibration, corrosion and torque. It shall have deep groove radial ball bearings which shall be oversize for longer life.

The shaft seal shall be self-adjusting, self-lubricating, and mechanical type. The pump shall be equipped with a brass drain cock.

PUMP ENGINE

The engine shall be a 4-cycle Liquid Cooled Naturally Aspirated Kubota D902 diesel engine. The engine rating shall be 24.8 HP at 3600 RPM with a maximum torque of 40.6 lb-ft at 2600 rpm. The engine shall have a 2.83 bore, 2.90 inches of stroke, and a displacement of 54.8 cubic inches. The engine shall meet current EPA and CARB emission standards.

The electrical system of the engine shall be 12 VDC. It shall also have a 40 amp regulating alternator.

THREE YEAR FIRE PUMP WARRANTY

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

PUMP ENGINE FUEL SOURCE

The pump fuel system shall be connected to the chassis fuel tank via an auxiliary fuel pump and tap.

EXHAUST SYSTEM

The pump engine shall have a vertical exhaust pipe. The exhaust pipe shall be directed upward and away from the pump operator. An additional guard or wrapping around the exhaust pipe shall be installed where the pipe is exposed to touch by an operator.

ELECTRIC PRIMER (FLUIDLESS)

The fire pump priming system shall consist of one (1) 12V positive displacement type rotary vane primer of a fluidless design. The primer shall not require a lubrication tank. The priming pump shall be constructed of heat treated aluminum and hard coat anodized. The primer shall be controlled with a push button on the Digitrol panel.

PRIMER FUSE

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

DIGITROL CONTROL PANEL

A Digitrol control panels shall be provided and installed for pump engine operation. It shall be located at the rear pump area.

The panel shall be equipped with the following:

- Engine Start/ Stop Button
- Hour Meter
- Oil Pressure
- Tachometer
- Engine Coolant Temperature
- Volt Meter
- Oerridable engine Shutdowns
- Digital Pressure Gauge, English/ Metric Selectable (psi/ bar)
- Electronic Throttle
- Primer Control (Elec Primer Only)

PLUMBING SYSTEM

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

The stainless steel plumbing shall remain unpainted.

HOSE THREADS

All hose threads shall be NST on all base threads on the apparatus intake and discharges, unless otherwise specified.

LABELS

All controls, inlets, and discharges shall be clearly labeled. The labels shall comply with applicable NFPA standards.

TANK TO PUMP

There shall be one (1) 2.50" tank to pump line shall be provided between the water tank and the pump system. Flexible connections shall be used between the pump and the water tank to allow for component movement.

The valve shall be a 2.50" bronze, quarter turn ball type, and shall be operated using a direct manual actuator, attached directly to the valve body. This valve shall remain open to pump from the tank.

The pipe shall have a tee into the suction side of the pump, and shall continue to the rear of the truck for the 2.50" suction/ direct tank fill.

SUCTION/ DIRECT TANK FILL

There shall be one (1) gated 2.50” suction/ direct tank fill inlet shall be installed to supply the fire pump from an external water supply.

The valve shall be a 2.50" bronze, quarter turn ball type, and shall be operated using a direct manual actuator, attached directly to the valve body.

INTAKE ADAPTER

The valve inlet shall be supplied with a 2.50" chrome swivel with FNST rocker lug threads. A screen shall be installed in the intake to prevent debris from entering the pump.

PLUG

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 REFILL

There shall be one (1) 1.00” tank fill/ re-circulating line provided between the pump and the water tank. It shall be plumbed with a 1.00” valve and flexible, reinforced wire-braid, hydraulic hose.

TANK REFILL VALVE

The valve shall be a 1.00" bronze, quarter turn ball type, and shall be operated using a direct manual actuator, attached directly to the valve body.

REAR DISCHARGE

One (1) 2.50" discharge outlet with 2.50" pipe and inline valve shall be supplied. The discharge shall be directed towards the rear of the unit.

REAR DISCHARGE VALVE

The valve shall be a 2.50" bronze, quarter turn ball type, and shall be operated using a direct manual actuator, attached directly to the valve body.

DISCHARGE ADAPTER

A rigid 2.50” FNPT x 2.50” MNST chrome plated hex type adapter shall be provided for the discharge outlet.

CAP

One (1) 2.50" NST vented rocker lug chrome plated brass cap with restraint chain shall be provided for the discharge.

REAR DISCHARGE

One (1) 1.50" discharge outlet with 1.50" pipe and inline valve shall be supplied. The discharge shall be directed towards the rear of the unit.

REAR DISCHARGE VALVE

The valve shall be a 1.50" bronze, quarter turn ball type, and shall be operated using a direct manual actuator, attached directly to the valve body.

DISCHARGE ADAPTER

A rigid 1.50” FNPT x 1.50” MNST chrome plated adapter shall be provided for the discharge outlet.

CAP

One (1) 1.50" Rocker Lug, Chrome Cap w/ chain shall be supplied with the discharge

PRE-CONNECTED DISCHARGE

There shall be one (1) 1.50" discharge outlet piped to hose tray located above the left hand side of the body compartments as described elsewhere in these specifications.

PRE-CONNECT VALVE

The valve shall be a 1.50" bronze, quarter turn ball type and shall be operated using a direct manual actuator, attached directly to the valve body.

DISCHARGE ADAPTER

The pre-connected discharge shall terminate with a chicksan swivel adapter with 1.50" MNST threads.

HOSE REEL VALVE(S)

There shall be One (1) 1.00” valve for the hose reel(s) provided. Each discharge shall be plumbed to the reel with a 1.00” valve and flexible, reinforced wire-braid, hydraulic hose.

BOOSTER REEL VALVE

The valve shall be a 1.00" bronze, quarter turn ball type, and shall be operated using a direct manual actuator, attached directly to the valve body.

BOOSTER HOSE REEL

One (1) HANNAY painted steel booster reel with electric rewind shall be supplied and installed. The reel shall be capable of carrying 150.00' of 1.00" booster hose.

The reel shall have a 1.00” Female NPT inlet connection with a 90 degree ball bearing swivel joint. The reel shall have a 1.00” Male NST outlet.

The reel shall have an auxiliary gear-driven crank rewind that shall be easily accessible.

REEL LOCATION

The booster hose reel shall be installed on the center top of the water tank so the hose will exit either the right or left sides of the apparatus.

Two (2) hose reel rewind switches shall be installed, and properly labeled. Each switch shall be a weather-resistant momentary push button switch. They shall be located one (1) each side of the body, above the rear wheel well.

The reel shall have side facing guides and rollers to reduce hose wear, and shall be capable of pulling off the left and right hand side of the unit.

Two (2) polished aluminum roller assemblies shall be provided, one (1) on each side of the apparatus body on top of the side compartments. The rollers shall be designed to allow hose from the center mounted hose reel to be unloaded to either side of the vehicle without snagging equipment on the apparatus. The distance between the rollers shall not exceed the width of the hose reel.

BOOSTER REEL HOSE

The booster reel shall be supplied with 150’ of 1.00” NST red lightweight booster hose.

BOOSTER TANK

The tank shall have a capacity of 300 US gallons / 249 Imperial gallons / 1136 liters.

The tank shall be a UPF model Defender 3E

TANK CONSTRUCTION

The tank shall be constructed of PT3™ polypropylene material. This material shall be a non-corrosive stress relieved thermoplastic and UV stabilized for maximum protection. Tank shell thickness may vary depending on the application and may range from 0.50" to 1.00” as required. Internal baffles are generally 0.375” in thickness.

ISO CERTIFICATION

The tank must be designed and fabricated by a tank manufacturer that is ISO 9001:2008 certified in each of its locations. The ISO certification must be to the current standard in effect at the time of the design and fabrication of the tank.

BOOSTER TANK CONSTRUCTION

The booster tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. Joints and seams shall be fused using nitrogen gas as required and tested for maximum strength and integrity. The tank construction shall include PolyProSeal™ technology wherein a sealant shall be installed between the plastic components prior to being fusion welded. This sealing method will provide a liquid barrier offering leak protection in the event of a weld compromise. The top of the booster tank is fitted with removable lifting assembly designed to facilitate tank removal. The transverse and longitudinal swash partitions shall be manufactured of a minimum of 0.375" PT3™ polypropylene.

All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions interlock with one another and are completely fused to each other as well as to the walls of the tank. All partitions and spacing shall comply with NFPA 1906. The walls shall be welded to the floor of the tank providing maximum strength as part of the tank’s unique Full Floor Design™. Tolerances in design allow for a maximum variation of 0.125” on all dimensions.

WATER FILL TOWER AND COVER

The tank shall have a combination vent and manual fill tower. The fill tower shall be 8.00" round by 6.00" high with a molded shoe box type cover. The cover shall be fastened to the tower with a tether to prevent loss. The tower shall be located in the left front corner of the tank. The tower shall have a 0.25" thick removable polypropylene screen. The capacity of the tank shall be

engraved on the top of the fill tower lid. Inside the fill tower there shall be a combination vent/overflow pipe.

The vent overflow shall be a minimum of schedule 40 polypropylene pipe with a minimum I.D. of 3.00" that is designed to run through the tank, and shall be piped to discharge water at the left hand side of the tank.

The tank cover shall be constructed of 0.50" thick PT3™ polypropylene and UV stabilized, to incorporate a multi-piece locking design, which allows for individual removal and inspection if necessary. The tank cover(s) shall be flush or recessed 0.375" from the top of the tank and shall be fused to the tank walls and longitudinal partitions for maximum integrity. Each one of the covers shall have hold downs consisting of 2.00" minimum polypropylene dowels spaced a maximum of 40.00" apart. These dowels shall extend through the covers and will assist in keeping the covers rigid under fast filling conditions. A minimum of two (2) lifting dowels shall accommodate the necessary lifting hardware.

TANK MOUNTING BLOCKS

The cover shall incorporate two (2) mounting blocks that shall be slotted to accommodate two (2) each 0.375" - 16 threading sliding fasteners. These mounting blocks shall be welded to the covers running from the rear edge of the tank forward.

TANK OUTLETS

There shall be two standard tank outlets located in the same vertical plane on the driver side rear wall of the tank. One (1) 3.00" female NPT tank to pump suction fitting and one (1) 1.50" female NPT tank fill fitting with flow deflector.

TANK LEVEL GAUGE

An external sight gauge with guard shall be installed on the front of the tank. The level indicator shall be located to provide maximum visibility to the operator.

PUMP PLATFORM

The pump platform shall be constructed of UPF polypropylene and shall be attached to the booster tank.

TANK DRAIN

There shall be a 0.75" tank drain to the front left side of the tank with a nylon plug.

WATER TANK WARRANTY

The water tank manufacturer shall warrant the water tank to be free from manufacturing defects in material and workmanship for the service life of the vehicle. The tank must be installed in accordance with the tank manufacturer's installation instructions.

SKID BASE

There shall be a full-width skid base manufactured of 0.75” Polyprene™ . This base shall be 48.00”W x 96.00”L and shall extend past the tank in the rear to provide for pump mounting.

The base shall have “C” channel runners 3.00” tall running length of the skid unit. The pump mounting area shall be supported by 0.50” polypropylene gussets 15.00”H x 32.00”L where runners are not used. The gussets shall be equipped with 2.00” lifting holes to assist in lifting the unit.

FIRE BODY & RELATED COMPONENTS

OVERALL DIMENSIONS

The body shall be 132.00" Long x 93.00" wide x 70.00" high with fender well positioned for a 84.00" cab-to-axle dual rear wheel chassis. The cargo bed floor width shall be 50.00” wide.

FLOOR AND UNDERSTRUCTURE

he floor shall be supported by front and rear extruded 6061 aluminum alloy 2.00" x 4.00" x .250" wall structural tube cross members and incorporating flange style direct body mounting plates. The center section of the floor shall be supported by two (2) additional cross members 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 cross members. The front of the body shall be closed in with a .125" aluminum bulkhead panels the same height as the body, creating a 47.0" high cargo bed between the side compartments.

COMPARTMENT CONFIGURATION

There shall be a total of eight (8) flush floor body side compartments; four (4) on each side comprised of two (2) front vertical and one (1) rear vertical compartment, separated by a horizontal center compartment, over the wheel well. A rear access open top cargo compartment shall run between the side compartments.

The compartments shall be completely formed of .125" 5052-H32 aluminum alloy and shall have a tested floor area load of 300 pounds combined with a shelf load of 250 pounds.

The interior height of the compartments will be measured from the compartment floor to the ceiling. The spool of the rollup door at the top of the compartment takes up some usable space. The depth of the compartments will be measured from the back wall to the inside of the door frame.

ALUMINUM TREADPLATE CARGO FLOOR

The center cargo floor shall be 3003 alloy .1875"embossed aluminum treadplate.

TREADPLATE AND TRIM

All tread brite overlays shall be 3003-H14 bright aluminum.

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.

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.

Where these louvers are provided, they will be formed into the metal and not added to the compartment as a separate plate.

ADJUSTABLE SHELVING TRACKS

All side body compartments shall 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.

ADJUSTABLE TRAYS

Adjustable trays shall be installed as directed. The trays shall be made of .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.

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.

REAR WHEELWELL LINERS

The rear wheelwells 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 BODY FENDERETTES

An extruded rubber 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. Holes shall be drilled into the fenderettes, transfer drilled into the wheel well panels.

BODY SIDE RUB RAILS

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.

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 ingression 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.

DOOR FINISH

The doors shall have a satin finish.

LEFT SIDE COMPARTMENT IN FRONT OF REAR WHEELS, L1

There shall be one (1) full height compartment ahead of the rear wheels, approximately 32.375" wide x 57.00" high x 19.875" deep. The clear door opening shall be approximately 26.875" wide x 54.375" high.

COMPARTMENT LIGHT(S)

One (1) TecNiq model E18 surface mount LED light(s) shall be installed in the compartment. The light(s) shall have a clear lens and shall a minimum effective output of 800 lumens.

AUTOMATIC COMPARTMENT DOOR LIGHT SWITCH

The light(s) shall function independently of other compartments by an automatic "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 IN FRONT OF REAR WHEELS, L2

There shall be one (1) full height compartment ahead of the rear wheels, approximately 23.75" wide x 57.00" high x 19.875" deep. The clear door opening shall be approximately 16.188" wide x 54.375" high.

COMPARTMENT LIGHT(S)

One (1) TecNiq model E18 surface mount LED light(s) shall be installed in the compartment. The light(s) shall have a clear lens and shall a minimum effective output of 800 lumens.

AUTOMATIC COMPARTMENT DOOR LIGHT SWITCH

The light(s) shall function independently of other compartments by an automatic "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 ABOVE WHEEL COMPARTMENT, L3

There shall be one (1) standard height compartment above of the rear wheels, approximately 49.00" wide x 36.00" high x 19.875" deep. The clear door opening shall be approximately 46.375" wide x 33.375" high.

COMPARTMENT LIGHT(S)

One (1) TecNiq model E18 surface mount LED light(s) shall be installed in the compartment. The light(s) shall have a clear lens and shall a minimum effective output of 800 lumens.

AUTOMATIC COMPARTMENT DOOR LIGHT SWITCH

The light(s) shall function independently of other compartments by an automatic "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, L4

There shall be one (1) full height compartment behind of the rear wheels, approximately 24.00" wide x 51.30" high x 19.875" deep. The clear door opening shall be approximately 18.688" wide x 54.375" high.

COMPARTMENT LIGHT(S)

One (1) TecNiq model E18 surface mount LED light(s) shall be installed in the compartment. The light(s) shall have a clear lens and shall a minimum effective output of 800 lumens.

AUTOMATIC COMPARTMENT DOOR LIGHT SWITCH

The light(s) shall function independently of other compartments by an automatic "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

There shall be one (1) full height compartment ahead of the rear wheels, approximately 32.375" wide x 57.00" high x 19.875" deep. The clear door opening shall be approximately 26.875" wide x 54.375" high.

COMPARTMENT LIGHT(S)

One (1) TecNiq model E18 surface mount LED light(s) shall be installed in the compartment. The light(s) shall have a clear lens and shall a minimum effective output of 800 lumens.

AUTOMATIC COMPARTMENT DOOR LIGHT SWITCH

The light(s) shall function independently of other compartments by an automatic "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, R2

There shall be one (1) full height compartment ahead of the rear wheels, approximately 23.75" wide x 57.00" high x 19.875" deep. The clear door opening shall be approximately 16.188" wide x 54.375" high.

COMPARTMENT LIGHT(S)

One (1) TecNiq model E18 surface mount LED light(s) shall be installed in the compartment. The light(s) shall have a clear lens and shall a minimum effective output of 800 lumens.

AUTOMATIC COMPARTMENT DOOR LIGHT SWITCH

The light(s) shall function independently of other compartments by an automatic "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, R3

There shall be one (1) standard height compartment above of the rear wheels, approximately 49.00" wide x 36.00" high x 19.875" deep. The clear door opening shall be approximately 46.375" wide x 33.375" high.

COMPARTMENT LIGHT(S)

One (1) TecNiq model E18 surface mount LED light(s) shall be installed in the compartment. The light(s) shall have a clear lens and shall a minimum effective output of 800 lumens.

AUTOMATIC COMPARTMENT DOOR LIGHT SWITCH

The light(s) shall function independently of other compartments by an automatic "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, R4

There shall be one (1) full height compartment behind of the rear wheels, approximately 24.00" wide x 51.30" high x 19.875" deep. The clear door opening shall be approximately 18.688" wide x 54.375" high.

COMPARTMENT LIGHT(S)

One (1) TecNiq model E18 surface mount LED light(s) shall be installed in the compartment. The light(s) shall have a clear lens and shall a minimum effective output of 800 lumens.

AUTOMATIC COMPARTMENT DOOR LIGHT SWITCH

The light(s) shall function independently of other compartments by an automatic "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.

TRANSVERSE COMPARTMENT

There shall be a transverse area located in between compartments L1 and R1. It shall be approx 30.00" wide x 50.00" deep x 45.00" tall, and start approx. 12.50" above the side compartment floors.

REAR BODY CONFIGURATION, OPEN

The cargo area of the apparatus body shall be left uncovered for the installation of a skid unit.

LEFT SIDE ROOF PRE-CONNECT COMPARTMENT

A single roof pre-connect hose lay compartment shall be provided above the left side body compartments with useable dimensions 17.50" wide by 131.00" long by 8.00" deep. Two (2) lift-up access doors shall be provided with clear door openings measuring 17.50" wide by 62.00" long.

Each lift-up access door shall be constructed of aluminum tread plate flanged downward to overlap the door opening. The door shall have a stainless steel hinge and dual gas openers. The gas openers shall be installed in a dual purpose over-center arrangement to hold the door in either the open or closed position. One (1) D-Ring latch shall be installed to secure the door. A heavy duty chrome grab handle shall be provided to lift the door.

The compartment shall be open towards the rear of the body and contain the pre-connect listed in the plumbing section if selected.

RIGHT SIDE ROOF COMPARTMENT

A single roof compartment shall be provided above the right side body compartments with useable dimensions 17.50" wide by 131.00" long by 8.00" deep. Two (2) lift-up access doors shall be provided with clear door openings measuring 17.50" wide by 62.00" long.

Each lift-up access door shall be constructed of aluminum tread plate flanged downward to overlap the door opening. The door shall have a stainless steel hinge and dual gas openers. The gas openers shall be installed in a dual purpose over-center arrangement to hold the door in either the open or closed position. One (1) D-Ring latch shall be installed to secure the door. A heavy duty chrome grab handle shall be provided to lift the door.

The compartment shall be open towards the rear of the body and contain a hinged tread plate door with push button latch.

FUEL FILL W/ ACCESS DOOR

One (1) Cast Products aluminum fuel fill with a hinged access door shall be installed in the left hand side wheel well rear of the axle. It shall be labeled “Ultra Low Sulfur Diesel Fuel Only”.

DEISEL EXHAUST FLUID FILL

The deisel exhaust fluid fill shall be located in between the body and the chassis on the left hand side. It shall be labeled “Diesel Exhaust Fluid Only”.

FOLDING STEP(S) - LH REAR OF BODY

Two (2) Innovative Controls model 3004234 folding step(s) shall be provided on the left hand side rear of the body. The step(s) 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.

STEP LIGHT

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

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 compartment shall allow the storage of an SCBA cylinder up to 7.50" in diameter x 22.00" deep.

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 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.

REAR STEP RISER

A full width, one-piece aluminum treadplate step riser shall overlay the area at the rear of the body, between the lower edge of the cargo area floor and the top of the rear step.

EXTERIOR GRAB RAILS

Each grab rail shall be non-slip, 1.25” diameter extruded aluminum grab rails with designed to provide maximum gripping ability, strength, and durability. The rails shall comply with NFPA 1900.

GRAB RAILS, REAR STEP, VERTICAL

Two (2) extruded aluminum non-slip grab rails 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. The wiring shall be color-coded, numbered, and function imprinted for permanent identification. All wiring devices shall be rated to carry 125% of the maximum ampere load for which the circuit is protected. All added electrical equipment shall be served by circuits separate and distinct from the chassis circuits. All solenoids, relays, and terminal blocks will be located in an easily accessible area. All circuits provided shall have properly rated low voltage over current protective devices. All electrical will be accordance with modern automotive wiring standards. All under side terminal junctions shall be fully enclosed in sealed plastic weather proof boxes.

ELECTRICAL SYSTEM (CHASSIS OEM)

The commercial chassis electrical system shall be furnished and installed by the chassis manufacturer and shall not be altered in any way so as to void or diminish the manufacturer's warranty responsibilities. Body builder wiring interface harnesses shall be specific to the chassis being utilized and the apparatus specifications with all such harnesses, circuits and connections being documented by the body builder and made part of the electrical schematics provided with the completed apparatus.

ELECTROMAGNETIC INTERFERENCE PROTECTION

The apparatus shall incorporate modern electrical system design, installation procedures, grounding techniques and wave generating components to provide the highest level of protection against electromagnetic (EMI) and radio wave frequency (RFI) interferences.

The apparatus shall be designed to operate and correctly function in congested municipal environments as well as industrial or concentrated commercial scenes without adverse effects from either EMI or RFI. Communications equipment installed after the apparatus is delivered shall be immediately tested by the installer for reception and transmission signal quality.

NFPA 1900 CERTIFIED 12 VOLT ELECTRICAL SYSTEM

The 12 volt apparatus body electrical system shall be provided and be in compliance with NFPA 1900 testing and certification procedures as follows:

Tests shall be performed when the air temperature is between 0°F and 110°F. The three tests defined in NFPA shall be performed in the order in which they appear. Before each test, the batteries shall be fully charged until the voltage stabilizes at the voltage regulator set point and the lowest charge current is maintained for 10 minutes. Failure of any of these tests shall require a repeat of the sequence.

RESERVE CAPACITY TEST

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged.

The engine shall be shut off, and the minimum continuous electrical load shall be activated for 10 minutes.

All electrical loads shall be turned off prior to attempting to restart the engine. Failure to restart the engine shall be considered a test failure of the battery system.

ALTERNATOR PERFORMANCE TEST AT IDLE

The minimum continuous electrical load shall be activated with the engine running at idle speed.

The engine temperature shall be stabilized at normal operating temperature.

The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

ALTERNATOR PERFORMANCE TEST AT FULL LOAD

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed.

The test duration shall be a minimum of 2 hours.

Activation of the load management system shall be permitted during this test.

An alarm sounded by excessive battery discharge, as detected by the warning system or a system voltage of less than 11.8 V for more than 120 seconds shall be considered a test failure.

LOW VOLTAGE ALARM TEST

The following test shall be started with the engine off and the battery voltage at or above 12 V for a 12 V nominal system.

With the engine shut off, the total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals.

The test shall be considered a failure if the alarm does not sound in less than 140 seconds after the voltage drops to 11.70 V for a 12 V nominal system.

The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

CERTIFICATION DOCUMENTATION

At the time of delivery, the OEM shall provide the following documentation:

1. Documentation of the electrical system performance tests.

2. A written electrical load analysis, including the following:

- The nameplate rating of the alternator.
- The alternator rating under the conditions specified above.
- Each of the component loads specified that make up the minimum continuous electrical load.
- Additional electrical loads that, when added to the minimum continuous electrical load, determine the total continuous electrical load.
- Each individual intermittent electrical load.

LOW VOLTAGE BATTERY CHARGER/ CONDITIONER TEST

If the apparatus is equipped with a low voltage battery charger/conditioner, it shall be tested as follows:

1. Low voltage batteries are fully charged to at least 12.66 V for a 12 V nominal system with the engine off and the shoreline disconnected.

2. Connect a DC ammeter to each output of the low voltage battery charger/conditioner.

3. Connect the shoreline to power the low voltage battery charger/conditioner.

4. Perform the test with the engine off and the shoreline power cord connected.

5. Add or apply loads to each charger output so that the output current is between 80 percent and 100 percent of the rated output current for that output.

6. Record the low voltage battery voltage and output current for each charger output at the beginning of the test and every 20 minutes.

7. Maintain the load for 60 minutes.

8. Record the low voltage battery voltage and output current for each charger output at the end of the test with the load still applied and the charger/conditioner powered.

9. Remove any added load.

The test shall be considered a failure if the charger/conditioner does not maintain an output voltage of at least 12.54 V for a 12 V nominal system, or if it cannot maintain at least 80 percent of the rated output current for the duration of the test.

INNOVATIVE CONTROLS MULITPLEXING SYSTEM

The electrical system shall utilize an Innovative Controls multiplexing system where applicable.

ROCKER SWITCH PANEL - EIGHT (8) POSITION

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.

LOW VOLTAGE MONITOR

A voltage monitor shall be built into the IC electrical system. It shall activate a warning when the alternator output voltage falls below any desired voltage.

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 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.

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 an amber 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

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.

MARKER LIGHTS

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements. The side and rear of the body will be provided with reflectors. All marker lights shall be incorporated into the headlight circuit of the cab/chassis

Two (2) amber reflectors shall be provided on the apparatus body lower side, as far forward and low as practical, one (1) each side if the apparatus is 30 feet long or longer.

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

WORK LIGHT, PUMP AREA, 12V

One (1) 12V adjustable 4.00" round LED work light shall be mounted at the rear of the skid unit to provide light during night time operations. The light(s) shall have a black housing with a black rear cover.

WORK LIGHT SWITCH

The pump area work light shall be wired to the electric start on the pump.

SIDE FACING UPPER FRONT BODY SCENE LIGHTS

One (1) pair of Whelen M62SLC EZ Series LED scene lights shall be installed. The lights shall be located on the left and right sides of the upper front portion of the apparatus body. Each light shall be supplied and installed with a chrome bezel.

SIDE FACING UPPER REAR BODY SCENE LIGHTS

One (1) pair of Whelen M92SLC EZ Series LED scene lights shall be installed. The lights shall be located on the left and right sides of the upper rear portion of the apparatus body. Each light shall be supplied and installed with a chrome bezel.

REAR FACING UPPER BODY SCENE LIGHTS

One (1) pair of Whelen M62SLC EZ Series LED scene lights shall be installed. The lights shall be located on the rear of the apparatus body, one (1) each side. Each light shall be supplied and installed with a chrome bezel.

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 1900. 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.

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.

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 M6R red Super-LED with red lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED with red 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 M6R red Super-LED with red lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED with red 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 M6R red Super-LED with red lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED with red lens.

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

UPPER WARNING LIGHT SWITCHING

One (1) momentary 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 M4R red LED with red lens.

The officer side warning light shall be a Whelen Model M4R red LED with red 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 M4R red LED with red lens.

The officer side warning light shall be a Whelen Model M4R red LED with red 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 M7R red Super-LED with red lens.

The officer side warning light shall be a Whelen Model M7R red Super-LED with red 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 M6R red Super-LED with red lens.

The officer side warning light shall be a Whelen Model M6R red Super-LED with red lens.

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

LOWER WARNING LIGHT SWITCHING

One (1) 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 1900.

The speaker shall be mounted behind the chassis grille on the right hand side.

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.

BODY PAINT PROCESS

All bright metal fittings, if unavailable in stainless steel shall be heavily chrome plated. Iron fittings shall be copper plated prior to chrome plating.

All seams shall be caulked both inside and along the exterior edges with a urethane automotive sealant to prevent moisture from entering between any body panel.

The body and all parts shall be thoroughly washed with a grease cutting solvent (PPG DX330) prior to any sanding. After the body has been sanded and the weld marks and minor imperfections are filled and sanded, the body shall be washed again with (PPG DX330) to remove any contaminants on the surface.

The first coating to be applied is a pre-treat self etching primer (PPG DX1787) (.5 to 1.0 dry film build) for maximum adhesion to the body material. The next two to four coats (depending on need) shall be an acrylic urethane primer surfacer (PPG K36). The film build shall be 4-6 mils when dry. The primer surfacer coat, after appropriate dry time, shall be sanded with 320-600 grit sandpaper to ensure maximum gloss of the paint. The last step is the application of at least three coats of PPG Delfeet polyurethane two-component color (single stage). The film build being 2-3 mils dry. The single stage poluurethane, when mixed F3270 catalyst (PPG F3260) shall provide a UV barrier to prevent fading and chalking.

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

CHASSIS PAINT

The chassis shall be painted by the OEM Chassis Manufacturer.

PRIMING

All surfaces to be painted shall be primed with three (3) parts PPG F3993 Primer mixed with one (1) PPG F3996 Primer Harnder , and a half (.5) part PPG Thinner F3320.

Two (2) applications of primer shall be applied. The first application shall be four (4) coats and the second application shall be three (3) coats.

A final application of sealer shall be applied using Primer Filler.

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.

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

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.

REFLECTIVE LETTERING - PURCHASER SUPPLIED

Reflective lettering shall be installed by the purchaser.

REAR CHEVRON STRIPING

At least 50% of the rear facing vertical surface shall be covered with alternating strips of reflective striping. Each stripe shall be a minimum of 6.00" in width and shall be applied to the apparatus at 45° angle.

The chevron striping colors shall consist of 3M diamond grade 983-72NL Red and 983-23ES Fluorescent Yellow-Green.

LOOSE EQUIPMENT

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

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

APPARATUS BODY WARRANTY, TEN YEAR

The apparatus body as detailed herein shall have a structural warranty against defects in materials and workmanship 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 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.