

Anderson Valley VFD, CA

One (1)
BG-10-1400

GMC CONVENTIONAL CHASSIS

A GMC two-door chassis per the following specifications shall be furnished:

2005 GMC TC8C042 Regular Cab

Mechanical:

Caterpillar Diesel C7, 300 HP @ 2200 RPM and 860 LB-FT Torque Maximum engine speed 2,400 rpm with exhaust brake

Dry Type Air Cleaner

240 AMP Alternator (installed by body builder)
Dual 750CCA Delphi HD Freedom BS 31-750 Batteries

Single Horizontal LH exhaust system, aluminized steel

Electronic Activation Switch to adjust engine rpms

5-Speed 3000 EVS Allison Automatic Transmission with overdrive. Includes: oil level sensor, engine driven power take off and instrument panel mounted push button control

12,000 lb. Front Axle
12,000 lb. Tapered Leaf Front Suspension

22.5" x 8.25" Accuride 10-Hole Hub Piloted Steel Front Wheels

11R22.5G Radial Tubless Front Tires
Premium Highway Front Tread

23,000 lb. Dana 23090S Single Speed Rear Axle
23,500 lb. Multi Leaf Rear Suspension

22.5" x 8.25" Accuride 10-Hole Hub Piloted Steel Rear Wheels

11R22.5G Radial Tubless Rear Tires
Highway Traction Rear Tire Tread

10MM 120,000 PSI Yield Strength Frame Rail

50 Gallon & 25 Gallon Single Fuel Tanks

Racor Fuel Filter & Water Separator. Includes: Paper element spin on type w/sight bowl & drain, water-in-fuel telltale

Brake System, Air, ABS-4-Channel Bendix Brake System S Cam Type Meritor, includes dual air pressure gauge, low air pressure warning light and alarm, and front dust shields, outboard-mounted brake drums standard, includes Meritor front and rear automatic slack adjusters, includes air-activated spring-loaded parking brake, includes Bendix air dryer ADIS with automatic air moisture ejector

13.2 CFM Air Compressor

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Exterior:

Solid Paint

Two (2) Front Tow Hooks
Chromed Steel Front Bumper

Integral grille & fenders w/mud flaps

Roof drip moldings

Rear tail lamps

Roof marker lamps

Solar-Ray deep tint on all windows

Mirrors, manual, 102" Wide Load, Integral arm, integral convex mirror, black plastic molding

Intermittent Windshield Wipers w/Pulse Washers

Positive Door Stops

Interior:

Air Conditioning

High Back Bucket Driver Seat, fixed height, manual adjuster-storage in the seat riser with a small lip at the front to stop contents from sliding

Dual Occupant Passenger Seat, storage under fold-up seat and in center seat back

Very Dark Pewter Interior Trim

Vinyl Seat Trim

Molded vinyl floor covering

Gauges. Includes: Tachometer, oil/coolant temperature gauge, engine telltale light/buzzer

Headlamp warning buzzer

Air cleaner restriction gauge

Two (2) power outlets

Stereo Radio Delco AM/FM/CD with coaxial speakers in all door panels

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CHASSIS ADDITIONS AND MODIFICATIONS

One (1)
CC-39-3100

CENTER HOSE WELL

A recessed style hose well for storage is to be provided in the center of the front bumper extension. Hose well shall be constructed of .125 aluminum material and have a smooth interior surface.

Hose well shall have a drain hole in each corner.

The hose well shall be capable of holding 50 ft. of 1-1/2" DJ fire hose.

One (1)
CC-50-0100

STEP SURFACE

The commercial chassis step area on the driver's side shall have slip resistant overlay material installed on each step surface.

One (1)
CC-50-0108

STEP SURFACE

The commercial chassis step area on the passenger side shall have slip resistant overlay material installed on each step surface.

One (1)
CC-50-0510

STEP TYPE FUEL TANK

There shall be a step type fuel tank furnished with the chassis.

The chassis shall be ordered with two fuel tanks. One tank shall hold 50 gallons and the 2nd tank shall hold 25 gallons.

One (1)
CC-50-5500

FRONT MUD FLAPS

Heavy-duty, black colored, rubber mud flaps shall be furnished and installed behind the front wheels of the vehicle. Mud flaps shall extend the full width of the front tires and are to be attached with stainless steel fasteners.

One (1)
CC-51-1100

HORIZONTAL CHASSIS EXHAUST

The chassis exhaust system shall be extended to the front of the right rear wheel.

One (1)
CC-65-0400

ALTERNATOR

The alternator shall be of adequate size to meet the NFPA requirements and to accommodate the specific apparatus electrical load.

1250 GPM Pumper

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One (1)
CC-65-0600

There shall be a 240 AMP Les-Tec alternator furnished and installed in place of the existing alternator on the chassis engine. The 240 Les-Tec alternator shall be installed and wired into the chassis electrical system.

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PUMP AND PLUMBING

One (1)
DD-00-0640

WATEROUS CM-1250 GPM TWO STAGE FIRE PUMP

The centrifugal type fire pump shall be a Waterous model CM two stage midship mounted with a rated capacity of 1250 GPM. The pump shall meet NFPA 1901 requirements.

One (1)
DD-02-1000

TWO STAGE FIRE PUMP

A Waterous Model CMY fire pump shall be midship mounted, two-stage centrifugal type. In addition to meeting NFPA 1901 requirements, it shall be constructed and mounted in accordance with the following specifications.

Suction intake arms shall be provided with removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.

Fire pump shall incorporate high strength involute toothform Morse HV chain drive transmission. Benefits of the chain drive include quiet, noiseless operation at high shaft speeds, and improved power-transmitting capabilities due to the fact that the chain wraps itself halfway around the gear distributing a very uniform pattern of tooth engagement. Pump transmissions utilizing spur or helical drive gears that create high noise levels at elevated speeds and only permit minimal tooth to tooth engagement are not acceptable. The shift engagement shall be accomplished by a free sliding collar and shall incorporate an internal locking mechanism to insure that collar will be maintained in ROAD or PUMP operation.

At time of delivery pump shall be tested and rated as follows:

- 100% of rated capacity at 150 pounds net pressure
- 70% of rated capacity at 200 pounds net pressure
- 50% of rated capacity at 250 pounds net pressure
- 100% of rated capacity at 165 pounds net pressure

Impellers and impeller seal rings are to be of high grade bronze replaceable type and mounted on a stainless steel shaft supported by heavy duty, oil lubricated "ball" bearings. Bearings shall be protected from water and sediment by suitable stuffing boxes, flinger rings and oil seals. Pumps using "sleeve" type bearings are not acceptable.

The main pump body shall be horizontally split and shall be in two sections for easy removal of the entire impeller assembly including wear rings, without disturbing setting of the pump on the chassis. Pump case halves shall be bolted together on a single horizontal plane using a single gasket.

The pump body is to be of close grain grey iron with all moving parts which come into contact with water to be of bronze or stainless steel.

The pump must be tested by the pump manufacturer for 10 minutes hydrostatically at a pressure of 500 psig. Certification by the pump manufacturer must be provided.

The pump shall be provided with a plate giving the rated flow at "capacity" and "pressure" test pressures, together with the R.P.M. of the engine at those pressures and deliveries and mounted

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in clear view of the pump operator's panel. Data plate shall include model and serial numbers of the pump body and chain transmission, hydro and discharge test pressures, and the date of pump and transmission manufacture.

All pump components including transfer valve, relief valve, pump shift, and priming system shall be manufactured by the Waterous Company to insure sole source responsibility and engineered compatibility.

TRANSFER VALVE

The two stage pump shall be equipped with a maintenance-free, ball type bronze transfer valve. The transfer valve shall have a spring-loaded floating seal assembly in removable bronze housing with large waterway for smooth operation under pressure.

Operation of the transfer valve shall provide smooth changing of the transfer valve to either pressure or volume without shutting down at any discharge pressure up to 250 psig.

PRIMING SYSTEM

The pump shall be capable of taking suction and discharging water with a lift of 10 feet in not more than 30 seconds with the pump dry, through 20 feet of suction hose of appropriate size. It shall be capable of developing a vacuum of 22" at an altitude of up to 1000 feet.

A vacuum test with a capped suction of at least 20' long shall develop 22" of vacuum and hold a vacuum with a drop not in excess of 10" in 5 minutes.

One (1)
DD-04-0080

VPO/VPOS OILLESS PRIMING SYSTEM

A Waterous VPO/VPOS oil less priming system shall be supplied with the pump.

One (1)
DD-04-0100

MANUAL CONTROL PRIMING PUMP

Priming pump shall be activated by a mechanical/electric valve with a single pull control located at the pump operator's panel area. Valve actuation may be accomplished while the main pump is operational, if necessary to assure a complete prime.

One (1)
DD-04-0500

PNEUMATIC PUMP SHIFT

The pump shift shall be air operated and shall incorporate an air cylinder with an electric actuating switch to shift from road to pump and back.

The pump shift switch shall be mounted in the cab and identified as "Pump Shift" and include instructions permanently inscribed on the pump shift switch plate. The In-Cab operating switch uses a spring loaded lock to prevent it from accidentally being moved.

*A "Pump Engaged" indicator shall be provided in the driving compartment to indicate that the pump shift has been successfully completed.

*An "Ok to Pump" indicator shall be provided in the driving compartment to indicate that the pump is engaged, the chassis transmission is in pump gear, and the parking brake is engaged.

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*A "Throttle Ready" indicator shall be provided at the pump operator's panel that indicates that the apparatus is in "OK to Pump" mode or that the chassis transmission is in neutral and the parking brake is engaged.

*An interlock system shall be provided to prevent advancement of the engine speed at the pump operators panel unless the chassis transmission is in neutral and the parking brake is engaged, or the apparatus is in "OK to Pump" mode.

*Controls for the pump shift are to be in the cab, and easily accessible.

One (1)
DD-04-2000

IMPELLER HUBS

Impellers and impeller seal rings are to be of high grade bronze replaceable type and mounted on a stainless steel shaft supported by heavy-duty, oil lubricated "ball" bearings. Bearings shall be protected from water and sediment by suitable stuffing boxes, flinger rings, and oil seals. Pumps using "sleeve" type bearings are not acceptable.

The impellers shall be accurately balanced and of the mixed flow design with reverse-flow, labyrinth-type wear rings that resist water bypass and loss of efficiency due to wear. The bronze wear rings shall be easily replaceable so as to eliminate need for the replacing of the entire pump casing due to wear.

One (1)
DD-04-4500

PUMP PACKING

Stuffing boxes shall be integral with the pump body and be equipped with two piece glands to permit adjustment or replacement of packing without disturbing the pump. Lantern rings shall be located at the inner ends of stuffing boxes so that all rings of packing can be removed without removal of the lantern rings. Water shall be fed into the stuffing box lantern rings for proper lubrication and cooling when the pump is operating.

One (1)
DD-04-7250

PRO-S PRESSURE GOVERNOR

A Fire Research Pro-S governor shall be installed on the apparatus. Designed especially for firefighters, the PRO Pressure Governor has gained a reputation for being very **USER FRIENDLY**. When operating in pressure mode (the default setting), the PRO will maintain a selected pressure setting regardless of the number of discharges that are opened as long as the system is capable of supplying the amount of water required. As more lines are opened, the PRO will raise the engine RPM automatically to maintain the required pressure. The PRO will reduce the engine RPM to maintain the required pressure when one or more of the discharges are closed down.

FEATURES

- SIMPLE to operate! (The PRO's interface was designed to be easy to use.) The large, color coded, clearly marked buttons are easy to identify even in dim light.
- Maintains constant pressure during pump operations even as more lines are added or taken away.
- Corrects for pressure changes faster than humanly possible.
- Automatic **PRESET** for swift pressure and RPM settings (field changeable)

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- Settings are displayed in large, bright digits
- Proven reliability. The PRO has been in everyday use by departments across the nation since 1993. You can depend on the PRO.
- Engine idle when out of water. This feature requires a bit of explanation: The current program initiates "prime RPM" ramping at an out of water condition. In other words, if you run out of water, the PRO will go to a safe "prime" speed to try to get the pressure back. Failing this, after 7 seconds, the PRO will bring the engine to IDLE.
- Remote High Idle option
- Easy to install
- Compatible with all common engines used in the fire service. This standardization allows you to create a simpler pumper training program because the same interface can be used regardless of engine type.

OPERATION

The unit defaults to 'Pressure Mode' on power up. The operator simply sets the required pressure (either manually with the 'Increase' and 'Decrease' buttons, or by pressing the green 'Preset' to bring the pressure to the required level) and the PRO will quickly and accurately adjust the engine RPM to maintain that desired pressure. The engine can be brought down to idle quickly during any operation with the touch of the red 'Idle' button. When operating in RPM mode, the PRO can maintain a set RPM regardless of the load on the engine. It is important to note that this is not the same thing as maintaining a set pressure (a function of PRESSURE mode).

One (1)
DD-04-7500

MANIFOLD DRAIN

A manifold drain valve shall be furnished with all pump drains connected to it so that the entire pump system may be drained by one control.

Drain valve assembly shall consist of a stainless steel plunger and a bronze body rigidly attached to the fire pump transmission.

A push-pull control with chrome plated "T" handle is to be provided and located at the driver's side of the pump house, properly identified as MASTER DRAIN.

One (1)
DD-16-1100

MANUAL TRANSFER VALVE

A pressure and volume control shall be provided of the latest "ball" type all bronze construction and incorporating a hydraulically balanced seal assembly to minimize leakage around the ball and assure maximum water flow and pump efficiency. Exceptions to the ball type transfer valve will not be acceptable due to its non-sticking capability.

The transfer valve shall be manually operated and have control handle on pump operators panel with identification label to indicate position of transfer valve.

Operation of the transfer valve shall provide smooth changing of the transfer valve to either pressure or volume without shutting down at any discharge pressure up to 250 psig.

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One (1)
DD-99-0500

FIRE PUMP WARRANTY

The Waterous fire pump shall carry the pump manufacturer's five (5) year warranty covering defective parts and workmanship. A copy of the pump manufacturer's warranty policy shall be provided with the completed apparatus.

One (1)
DH-20-1000

UL TEST

The pump shall undergo an Underwriters Laboratories Incorporated test per Class A requirements of NFPA #1901 prior to delivery of the completed apparatus. The UL acceptance certificate shall be furnished with the apparatus on delivery.

One (1)
DH-20-2000

PUMP COOLING LINE

A 3/8" cooling line shall be installed to recirculate water from the pump back to the water tank, to cool the pump during pro-longed pumping operations. The cooling line shall be controlled at the operator's position with a quarter turn valve.

One (1)
DH-20-5000

HEAT EXCHANGER

A heat exchanger shall be provided on the pump driving engine cooling system. The heat exchanger shall not allow mixing of the pump driving engine coolant and water from the fire pump.

A gated line shall be installed to provide water from the fire pump to the pump driving engine heat exchanger to assist in engine cooling during pumping operations. The heat exchanger line shall be controlled at the pump operator's panel.

One (1)
EE-01-2000

WATEROUS PUMP INSTALLATION

The Waterous fire pump shall be installed in conjunction with the body manufacturing process. Fire pump installation shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets. All drivelines shall be spin balanced prior to final installation.

One (1)
EE-01-3010

AUXILIARY PUMP

The power to drive the system shall be provided by a Lombardini PLD-560-2, 2 cylinder, four cycle, air-cooled diesel engine, oil filter, dry type air cleaner, muffler, manual compression releases, 12 volt starter, alternator and fuel pump.

The water pump shall be a Darley model 1-1/2 AGE 21LD single-stage, centrifugal pump with a vertically split aluminum case and bronze impeller on a stainless steel shaft. Performance shall be as follows:

180 GPM (681 l/m) @ 120 PSI (8.3 bar)
120 GPM (454 l/m) @ 195 PSI (14.6 bar)

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60 GPM (227 l/m) @ 235 PSI (16.2 bar)

Helical cut gears and injection packing shall be utilized in the pump transmission.

Pump plumbing shall have check valves to prevent the backflow of water between the two water pumps. The auxiliary pump shall be located above the main fire pump in the dunnage area on the passenger's side.

An additional priming control valve shall be provided for priming the auxiliary pump with the specified priming pump.

Dual controls including ignition, engine start/stop, and throttle for the auxiliary pump shall be provided both on the pump panel and in the cab. Cab controls are in addition to the 2-1/2" pressure gauge and tank level gauge located in the cab and which are specified separately within these specifications.

The auxiliary pump shall be plumbed in common with the midship water pump to both crosslays and the passenger's side 1-1/2" discharge.

One (1)
EE-01-4070

FUEL SYSTEM

The fuel system for the auxiliary pump shall be plumbed to the chassis fuel system. There shall be a separate fuel pickup tube mounted in the chassis fuel tank specifically for a separate engine driven pump assembly. There shall be an electric fuel pump with regulator and fuel hose furnished between the chassis fuel tank and the carburetor assembly for the auxiliary pump.

One (1)
EE-01-4200

ENGINE THROTTLE

A vernier engine control throttle for manually operated engines shall be furnished on the pump operator's control panel. There shall be an engraved identification label provided to read **THROTTLE**.

One (1)
EE-02-1000

INTAKE RELIEF VALVE

A 2-1/2" intake relief valve preset at 125 psi shall be permanently installed on the suction side of the fire pump. The valve shall have an adjustment range of 75 psi to 250 psi, and shall be designed to automatically self-restore to a non-relieving position when excessive pressure is no longer present.

Discharge side of the intake relief valve shall be plumbed to the right side below the running boards, away from the pump operator, and shall terminate with a 2-1/2" NST male chrome threaded adapter, marked with an engraved tag "Intake pressure relief outlet - Do Not Cap".

One (1)
EE-02-5600

DRIVER SIDE STEAMER INLET

There shall be one (1) steamer inlet furnished on the driver side of pump panel. The suction inlet shall have 6" NST thread. The suction inlet shall have a removable strainer provided inside the external inlet.

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Steamer inlet to be as short as possible to allow suction fittings to be attached without extending past the side running boards.

One (1)
EE-02-5700

PASSENGER SIDE STEAMER INLET

There shall be one (1) steamer inlet furnished on the passenger side of pump panel. The suction inlet shall have 6" NST thread. The suction inlet shall have a removable strainer provided inside the external inlet.

Steamer inlet to be as short as possible to allow suction fittings to be attached without extending past the side running boards.

One (1)
EE-20-0500

SUCTION CAP DRIVER'S SIDE

The driver's side suction inlet shall be equipped with a chrome-plated, long handled, cap capable of withstanding 500 PSI.

One (1)
EE-20-1000

SUCTION CAP PASSENGER SIDE

The passenger's side suction inlet shall be equipped with a chrome-plated, long handled, cap capable of withstanding 500 PSI.

One (1)
ES-03-1500

3" GATED SUCTION INTAKE DRIVER SIDE

A 3" independent gated suction intake shall be provided on the driver's side pump panel. Intake shall be provided with a three-inch quarter-turn valve and slow close operating control. The intake shall have a 3/4" drain valve with handle. Each intake shall have chrome-plated female swivel adapter with removable internal screen and a chrome-plated plug type cap with end chain.

The intakes swivel adapter shall be 2-1/2" NSTF with a 2-1/2" chrome plated plug.

One (1)
ES-03-1510

SUCTION VALVE CONTROL

Suction valve shall have swing type control handle located adjacent to valve.

One (1)
ES-04-0000

TRIM PANEL

A bolt on stainless steel trim panel shall be provided for easy access to the valve for repair or removal without removing the side panel on all intakes and discharges.

One (1)
FA-01-0000

PUMP DISCHARGES

Each gated discharge outlet shall include an Akron heavy-duty brass, quarter-turn, swing-out ball valve. All lines to have victaulic couplings or hose with stainless steel fittings installed where flex may occur to prevent cracking of the plumbing system. Each discharge shall have 3/4" cast bronze 1/4 turn drain valve complete with reinforced teflon seals, and blowout proof stem rated to 600 psi. A chrome-plated zinc handle shall be provided on each drain valve, complete with a 1"

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X 1 1/2" recessed identification label. Drains shall be aligned in a straight horizontal row at the lower edge of the corresponding pump panel so as to allow for ease of identification and operation. Each drain shall be labeled and numbered to correspond to the respective discharge outlet and coloring.

Individual discharge controls are to be aligned in a straight horizontal row across the pump operator's control panel, directly in-line with the corresponding discharge outlet line pressure gauges.

One (1)
FA-01-0010

GALVANIZED PLUMBING

All rigid piping five-inch diameter or less shall be galvanized type with tapered thread or victaulic type couplings.

Two (2)
FA-01-0500

DRIVER SIDE DISCHARGE OUTLET

Each 2-1/2" discharge outlet on the driver's side pump panel shall have a 2-1/2" quarter turn valve with control on pump operator's panel. There shall be a chrome plated 2-1/2" NST adapter that extends through the pump panel. Each discharge shall be provided with chrome-plated 30-degree discharge elbow.

Two (2) 2-1/2" discharges shall be provided on the driver's side pump panel.

Two (2)
FA-01-0501

MANUAL VALVE

Discharge valve shall be swing-out type with manual control handle located on pump operator's panel.

Two (2)
FA-01-0510

MANUAL DRAIN VALVE

The driver's side 2-1/2" discharge outlet shall have a 3/4" drain with individual control on side pump panel. There shall be additional automatic drains furnished as required to drain the plumbing system between the pump and the front discharge connection.

One (1)
FA-01-1000

PASSENGER SIDE DISCHARGE OUTLET

Each 2-1/2" discharge outlet on the passenger's side pump panel shall have a 2-1/2" quarter turn, swing-out valve with control on pump operator's panel. There shall be a chrome-plated 2-1/2" NST adapter that extends through the pump panel. Each discharge shall be provided with chrome-plated 30-degree discharge elbow.

One (1) 2-1/2" discharge shall be provided on the passenger's side pump panel.

One (1)
FA-01-1001

MANUAL VALVE

Discharge valve shall be swing-out type with manual control handle located on pump operator's panel.

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One (1)
FA-01-1010

MANUAL DRAIN VALVE

The passenger's side 2-1/2" discharge outlet shall have a 3/4" drain with individual control on side pump panel. There shall be additional automatic drains furnished as required to drain the plumbing system between the pump and the front discharge connection.

One (1)
FA-01-1500

DRIVER SIDE REAR DISCHARGE OUTLET

There shall be one (1) 2-1/2" discharge outlet located on the driver's side rear of the body below the hose bed. The discharge outlet shall have a 2-1/2" quarter turn, swing-out valve with control on pump operator's panel. There shall be a chrome-plated 2-1/2" NST adapter that extends through the rear of the body. The discharge shall be provided with a chrome-plated 30-degree discharge elbow.

One (1)
FA-01-1501

MANUAL VALVE

Discharge valve shall be swing-out type with manual control handle located on pump operator's panel.

One (1)
FA-01-1510

MANUAL DRAIN VALVE

The driver's side rear 2-1/2" discharge outlet shall have a 3/4" drain with individual control on side pump panel. There shall be additional automatic drains furnished as required to drain the plumbing system between the pump and the front discharge connection.

Four (4)
FA-01-3220

2-1/2" CAPS AND CHAINS

The following discharge outlets shall be equipped with a 2-1/2" chrome-plated cap and chain.

All 2-1/2" discharges shall have chrome plated caps and chains.

One (1)
FB-02-2500

MONITOR PROVISION

There shall be a three-inch (3") deluge discharge above fire pump. Deluge outlet shall be plumbed with 3" quarter turn, swing out valve and 3" I.D. pipe with 3" NPT male thread. The three-inch valve shall have a slow close device. Deluge outlet shall have control on pump operator's panel.

One (1)
FB-02-2502

MANUAL VALVE WITH SLOW CLOSE

Discharge valve shall be swing out type, with slow close and manual control handle located on pump operator's panel.

One (1)
FB-02-2505

MANUAL DRAIN VALVE

Monitor shall have a 3/4" drain with individual control on side pump panel.

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One (1)
FB-02-2599

MONITOR

A Fire Pro, fixed base, 1000 GPM monitor shall be provided and installed on the apparatus.

Two (2)
FC-31-0100

1-3/4" CROSSLAY(S) ASSEMBLY ABOVE PUMP

Crosslay hose bed(s) shall be designed to carry 200 feet of 1-3/4" double jacket fire hose. Crosslay hose bed(s) shall be located above the fire pump. The floor of the crosslay hose bed(s) shall be perforated to allow for drainage. Polished stainless steel hose roller assemblies shall be provided at the sides and lower edges of the crosslay opening on each side of the apparatus body.

Crosslay discharge(s) shall be plumbed using rigid pipe or flexible high-pressure hose coupled with stainless steel fittings. The crosslay shall be provided with 2" brass valve, and a 2" 90 degree swivel adapter with 1-1/2" NST male outlet thread.

Two (2) 1-3/4" crosslays shall be provided.

Two (2)
FC-31-0101

MANUAL VALVE

Each discharge valve shall be swing out type with manual control handle located on pump operator's panel.

Two (2)
FC-31-0108

MANUAL DRAIN VALVE

Each crosslay/speedlay shall have a 3/4" drain with individual control on side pump panel.

One (1)
FC-31-4200

CROSSLAY HOSEBED COVER

A .125 polished aluminum treadplate hinged cover shall be provided over the crosslay hose bed(s) complete with full length stainless steel piano hinge and with chrome plated lift handles provided on each side of the cover. Stops shall be provided to hold the cover in the open position or to protect cab or other adjacent body components. The hinge shall be located on the forward section of the cover, closest to the chassis cab.

One (1)
FC-31-5200

PASSENGER SIDE DISCHARGE

One (1) 1-1/2" discharge outlet shall be provided on the passenger's side pump panel. Discharge shall have a 2" quarter turn, swing-out valve with control on the pump operator's panel. There shall be a chrome plated 1-1/2" NST adapter that extends through the pump panel with a chrome plated cap.

One (1)
FF-26-8300

FOAM SYSTEM

A Foam Pro Model #1600 built in foam injection system shall be provided with the controls at the operator's panel.

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The foam system shall be a fully automatic, electronic, direct injection foam proportioning system. The system shall be capable of Class A foam concentrate. The foam proportioning operation shall be based on an accurate direct measurement of water flows with no water flow restriction. The foam system shall be installed in accordance with the manufacturer's recommendations.

The system shall be equipped with a control module. It shall be installed on the pump operator's panel and enable the pump operator to perform the following functions;

1. Activate the foam system
2. Change foam concentrate proportioning rates of .1% to 1%.
3. Flash a "low concentrate" warning light when the foam concentrate tank runs low of concentrate and in two minutes if foam concentrate is not added to tank, shut the foam concentrate pump down.

The foam system shall have a 12-volt, 1/3-hp electric motor driven positive displacement piston type foam concentrate pump with a rated capacity of .01 to 1.6 gpm with operating pressures up to 400 psi.

The FoamPro system shall be plumbed to the following discharge outlet.

Front bumper discharge
Both 1-3/4" crosslays

One (1)
FF-27-0100

SINGLE FOAM TANK PLUMBING SYSTEM

The foam tank shall be plumbed with three-quarter inch (3/4") valve and corrosion resistant hose from the foam tank to the foam inlet. There shall be a three-quarter inch (3/4") drain line furnished on the foam tank. Drain valve to be located on foam tank with corrosion resistant hose piped to below the frame level of the chassis.

One (1)
FF-27-2000

FOAM TANK

A 20-gallon foam concentrate tank shall be furnished as an integral component of the booster tank. The foam tank shall have a separate fill tower provided in a location to allow easy access for filling. Fill tower shall be equipped with a pressure/vacuum vent and have a sealed airtight cover. Tank shall be plumbed to the on board "Class A" foam system. A valved drain shall be provided at the lowest point of the foam tank. The drain shall be plumbed to drain directly to the surface below the apparatus without contacting other body or chassis components.

The following labels shall be attached to the foam tank:

"CLASS A FOAM TANK FILL"
"WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM"

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One (1)
FH-03-0500

TANK PUMP VALVE

A Waterous 3-1/2" full flow ball valve shall be furnished from the tank to the pump, complete with a flexible connection and enclosed in the pump compartment.

The valve shall be manufactured by the Waterous Company and shall include a spring loaded, self-adjusting seal to preclude the need for periodic adjustment, and a chrome-plated brass ball providing durability against sand and other debris.

A built-in check valve shall be furnished in the pump to avoid the possibility of backfilling the booster tank, through the tank to pump suction line.

Tank suction is to be located in a sump assembly located below the bottom of the tank and properly baffled to prevent surging of water. A 3" cleanout plug shall be provided in the bottom of the tank sump.

One (1)
FH-03-2000

BALL VALVE TANK TO PUMP

A 2-1/2" gated suction shall be provided between the booster tank and the portable pump.

One (1)
FH-03-6000

TANK FILL/COOLING LINE

A gated discharge line from the pressure side of the pump to the tank shall be furnished so the tank can be filled from draft or hydrant. Valve shall have control on the operator's panel. The valve is to be one and one-half inch, (1-1/2") swing out type ball valve and be plumbed to tank with flexible type hose.

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One (1)
FJ-00-0202

POLY BOOSTER TANK

The booster tank shall be of a specific configuration and is so designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity.

The transverse swash partitions shall be manufactured of polypropylene and extend from approximately 4" off the floor to just under the cover. The longitudinal swash partitions shall be constructed of polypropylene and extend from the floor of the tank through the cover to allow for positive welding and maximum integrity. 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 welded to each other as well as to the walls of the tank.

A forward mounted sump shall be provided in the tank. The sump shall be constructed of polypropylene and be located in the left front quarter of the tank. A polypropylene pipe shall be installed that will sweep from the front of the tank to the sump location. The sump shall have a 3" N.P.T. threaded coupling on the bottom for a plug. This shall be used as a combination clean out and tank drain. An anti-swirl plate shall be located above the sump.

There shall be two standard tank outlets; one for tank-to-pump suction lines, and one for a tank fill line. All tank couplings shall be backed with flow deflectors to break up the stream of water entering the tank.

The tank shall carry a lifetime warranty from its manufacturer.

One (1)
FJ-01-0208

FILL TOWER

The tank shall have a combination vent and manual fill tower. The fill tower shall be constructed of polypropylene and with a minimum dimension of 8" x 14" outer perimeter. The fill tower shall be located in the left front corner of the tank. The fill tower shall have a polypropylene screen and a polypropylene hinged cover. Inside the fill tower, shall be fastened a combination vent overflow pipe. The vent overflow shall be polypropylene pipe that is designed to run through the tank and shall be piped behind the rear wheels.

One (1)
FJ-01-3000

BOOSTER TANK

A 1000-gallon capacity polypropylene booster tank shall be provided.

One (1)
FJ-02-7710

STAINLESS STEEL BOOSTER TANK SUBFRAME

The booster tank shall be mounted on a stainless steel sub frame. The stainless steel sub frame shall consist of two (2) longitudinal tubes and two (2) transverse tubes welded together to form a tank retention cradle. The tank retention cradle shall prevent fore and aft, and side to side movement of the tank. Additional tubular stainless steel transverse cross member channels shall be installed to support the floor of the booster tank. The cross members shall have a maximum spacing of 20" for the polypropylene tanks. There shall be an additional full-length longitudinal member installed in the center of the tank support area. The booster tank shall rest on heavy rubber channels that isolate the polypropylene tank from the sub frame.

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One (1)
FK-01-1000

DRIVER SIDE MOUNTED OPERATOR'S CONTROL PANEL

All pump suction and discharge controls are to be mounted on the driver side pump operator's panel so as to permit operation of the pump from a central location.

All of the pump controls shall be clearly identified with permanently engraved plate type labels.

A full panel width polished light hood with a minimum of three Weldon model 2025 light assemblies shall be provided to illuminate the entire pump operator's control panel.

An additional polished light hood with a minimum of two Weldon model 2025 light assemblies shall be provided to illuminate the right side pump panel. Lights shall be controlled by the operator's panel light switch.

GAUGE PANEL

All gauges shall be suitably enclosed and mounted on a full pump compartment width "hinged" gauge panel constructed of the same material as the pump operators control panel, allowing access to the backside of all gauges and gauge lines. Panel is to include a stainless steel piano hinge, Hartwell HTL81 flush mounted chrome plated trigger latch, and stainless steel cable end stops. Electrical wiring and all gauge lines shall be properly tie wrapped to prevent kinking or cutting of the lines when the panel is opened.

One (1)
FK-01-1600

EXTRUDED ALUMINUM PUMP HOUSE STRUCTURE

The pump house structure shall be fabricated of extruded aluminum. The structure shall be welded together and have gusset plates on each corner. The pump house shall be mounted separate from the body and chassis and be bolted to the chassis frame rails.

The exposed areas of the pump house structure shall be overlaid with polished aluminum treadplate.

One (1)
FK-01-2100

PUMP PANEL PUMP ENGAGEMENT LIGHT

One (1) light in the control panel light hood shall come on with a successful pump engagement. This shall be in addition to the "OK to Pump" light on the control panel.

One (1)
FK-01-2200

PUMP PANELS

The right and left side pump panels shall be constructed entirely of 14-gauge type 304 brushed stainless steel material. The panels are to be completely "bolted" in place for ease of removal.

One (1)
FK-01-3000

PUMP COMPARTMENT ACCESS DOOR

The passenger's side pump panel shall be provided with a full panel width vertically hinged access door located in the upper portion of the side panel. This door shall be approximately 18" high and as wide as possible, and shall be constructed of polished aluminum treadplate. Two (2)

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flush mounted, push type latches shall be furnished to hold the door closed. The inspection door shall be attached with a stainless steel hinged and have a retainer cable attached to prevent the door from opening too far.

One (1)
FK-02-7000

STORAGE OVER PUMP

There shall be a dunnage compartment furnished above the pump and behind the top mount operator's control panel. The dunnage compartment shall be as wide as possible from side to side, and be a minimum of 12" deep. The floor shall be bolted in place and removable for access to the pump components.

One (1)
FK-05-2000

RECESSED HOSEWELL IN DRIVER SIDE RUNNINGBOARD

A recessed hose well storage area shall be installed in the driver's side running board, below the main pump for storage of preconnected soft suction hose.

Hose well shall be capable of holding 25' of 3" DJ fire hose.

One (1)
FK-05-2500

RECESSED HOSEWELL IN PASSENGER SIDE RUNNINGBOARD

A recessed hose well storage area shall be installed in the passenger's side running board, below the main pump for storage of preconnected 1-1/2" DJ fire hose.

Hose well shall be capable of holding 50' of 1-1/2" DJ fire hose.

One (1)
FK-10-0000

PUMP OPERATORS PANEL

The following equipment shall be installed on the pump operator's panel.

One (1)
FK-10-1100

MASTER GAUGES

Class One #LFP410, 4-1/2" diameter liquid filled pressure gauge registering up to 600-lbs per square inch with 1/4" pipe thread connection. The gauge shall be of the type that will not be injured when subjected to a vacuum. The gauge is to have a white face with black lettering. The gauge is to be located at the right of the gauge panel and labeled "DISCHARGE" with an engraved label.

Class One #LFP410, 4-1/2" diameter liquid filled compound gauge shall be provided on the suction side of the pump registering at least 600-lbs pressure and 30-inches of vacuum. The gauge shall have a white face with black lettering. The gauge is to be located to the left of the master discharge gauge and labeled "INTAKE" with an engraved label.

One (1)
FK-10-2700

PRESSURE GAUGES

Class One #LFP220, 2-1/2" diameter liquid filled pressure gauges shall be provided. The gauges are to have white faces with black lettering. The gauges shall read -30 to 600 lbs. Line pressure gauges shall be individually identified with engraved labels.

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Individual line pressure gauges are to be mounted adjacent to the corresponding discharge valve control.

Three (3)
FK-10-2900

There shall be one (1) pressure gauge for each 1-1/2" discharge outlet.

Four (4)
FK-10-3000

There shall be one (1) pressure gauge for each 2-1/2" discharge outlet.

One (1)
FK-10-3100

There shall be one (1) pressure gauge for each deck gun outlet.

One (1)
FK-11-2550

Fire Research ProS Governor Provided with Body

One (1)
FK-12-1100

INFORMATION CENTER

A Class 1 Enfo III master engine gauge and warning device shall be furnished and installed on the pump operator's panel. The device will monitor the following engine systems;

- Engine RPM display
- System voltage display and alarm
- Engine oil pressure display and alarm
- Engine water temperature display and alarm.

One (1)
FK-12-5200

PUMP PANEL IDENTIFICATION LABELS

All discharges shall be provided with color-coded labels. Identification labels shall be provided at the discharge control, the discharge outlet, and at the discharge drain valve control, color-coded according to NFPA recommended standards.

One (1)
FK-12-7100

PUMP PANEL WATER TANK LEVEL GAUGE

A Class One ITF Intelli-tank water tank level gauge shall be provided on the pump operator's panel. The Intelli-tank display features wide angle viewing and four (4) ultra-bright LED's for high visibility, even in direct sunlight. The Intelli-tank utilizes a pressure transducer, ILO of probes, to provide nine (9) accurate levels of indication.

The water tank level gauge shall be mounted on the front wall of the compartments so that it can be seen in the mirror by the driver.

One (1)
FK-12-9600

PUMP LUBRICATION FITTING

A grease zerk shall be installed on the pump left side panel, plumbed to the front impeller shaft-bearing cap with relief valve. Grease zerk shall be provided with a dust cap, and identified with an engraved label.

1250 GPM Pumper

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One (1)
FK-13-1500

UL TEST CONNECTIONS

A pump pressure and vacuum test block assembly shall be provided and mounted at the pump operator's control panel. The test block assembly shall include plug type caps.

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APPARATUS BODY SPECIFICATIONS

One (1)
HA-00-0200

HOSEBODY

The apparatus hose body is to be properly reinforced without the use of angles or structural shapes, and free from all projections that might injure the fire hose.

The main apparatus hose body shall run the full length of the apparatus body from behind the pump panel area to the rear face of the body.

The upper rear interior of the beavertail extrusions on the right and left side shall be overlaid with brushed stainless steel to protect the painted surface from damage by hose couplings

One (1)
HA-00-0320

HOSE BED CAPACITY

The hose bed shall hold the following hose:

Preconnect area on the left side to hold 150' of 3" DJ fire hose,
Middle/left area to hold unspecified amount of rolled fire hose,
Right side of center hose bed divider to hold 1200' of 3" DJ fire hose.

One (1)
HA-00-0400

HOSEBED FLOORING

Floors of the hose beds are to be provided with removable slat style extruded aluminum hose bed gratings, spaced 1/2" apart for proper hose ventilation. Hose bed gratings are easily lifted out of the main hose bed for access to the top of the specified booster water tank.

Two (2)
HA-00-1600

MAIN HOSEBED DIVIDER

Adjustable hose bed dividers shall be provided in the main hose bed.

The hose bed divider(s) shall be fabricated of 1/4" smooth aluminum sheet stock, pressed into a "T" shaped aluminum extrusion for added strength along the bottom edge of the divider.

The divider shall be fully adjustable, mounted using aluminum "C" channel tracks at the front and rear of the divider for full side to side adjustment.

Two (2) hose bed dividers shall be provided.

One (1)
HA-01-0800

HINGED ALUMINUM HOSEBED COVERS

Polished aluminum treadplate hose bed covers shall be furnished, extending the full-length and width of the main hose bed.

Covers shall be fabricated of 3/16" polished aluminum treadplate with cross bracing for maximum strength, and to support the weight of a firefighter standing on the covers when closed. The covers shall be of the sloped design for proper water runoff. Each cover to be equipped with a

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full length stainless steel piano hinge with chrome plated grab handles at front and rear of each cover. Hose bed covers shall include heavy-duty stops to support them when in the opened position.

One (1)
HD-00-1300

LADDER MOUNTINGS

The ladders shall be mounted in a compartment, beside the water tank and below the hose bed, on individual poly scratch resistant slides. There shall be an aluminum treadplate door on the rear with push button latch for access to the interior of the compartment.

One (1)
HD-00-2520

GROUND LADDERS FURNISHED BY PURCHASER

The purchaser shall furnish the ground ladders.

One (1)
HD-00-5100

HARD SUCTION HOSE TRAYS

Hard suction hoses shall be mounted in extruded aluminum, self-draining carrier trays with hold down device. The carrier trays shall be mounted one on each side of body.

One (1)
HD-00-7020

HARD SUCTION HOSE FURNISHED BY PURCHASER

The hard suction hose shall be furnished by the purchaser.

One (1)
KB-02-0200

APPARATUS BODY

All apparatus body compartments shall be constructed of minimum 14-gauge type stainless steel.

All polished 4-way aluminum treadplate material shall be #3003 H-22, C-102 pattern bright treadplate.

NOTE; No exceptions will be allowed to the gauge or type of materials, due to the fact that all apparatus manufacturers have the ability to purchase materials as stated. Any bids for apparatus bodies using lighter gauge materials, or materials other than stated will be considered non-responsive and will be automatically rejected.

Each compartment shall be a formed independent module, and be separate from the stainless steel tubular body frame. The compartment modules shall be bolted to the stainless steel tubular body frame to form the apparatus body.

All compartments shall be equipped with 14-gauge stainless steel "sweep-out" style floor for proper drainage and ventilation. All compartment floors shall be bolted to the modular compartment assembly.

Due to the fact that the body is to be designed to be in service for a minimum of 20 years, the walls and floors of the body shall be assembled in such a manner to minimize the possibility of corrosion, body fatigue and distortion.

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FASTENERS

All aluminum and stainless steel components shall be attached using stainless steel fasteners. Zinc or cadmium plated fasteners are not acceptable for use with any aluminum or stainless steel components used on the vehicle.

Compartment door hinges, handrails, and running boards shall be attached using minimum 1/4" diameter machine screw fasteners. 3/16" diameter fasteners shall only be used in nonstructural areas such as; door locks, trim moldings, gauge mountings etc.

One (1)
KB-10-0300

BODY DIMENSIONS

Apparatus body shall be up to 144" long and 102" wide, reference drawing for actual body length. Body compartments shall be divided into upper and lower areas with the upper area approximately thirteen-inches in depth, and the lower area approximately twenty-six inches in depth. The hose bed shall be 74" wide.

One (1)
KK-01-2000

APPARATUS BODY SUB-FRAME

The apparatus body sub frame shall be constructed entirely of type 304 tubular stainless steel. No exceptions allowed to this requirement.

Full frame length stainless steel tube type frame liners shall be attached to the chassis frame rails using a heavy "U" bolt fasteners evenly spaced, to allow removal of the sub frame and body assembly. There shall be a barrier provided between the sub frame and body to prevent electrolysis.

Tubular stainless steel cross channels shall be welded to the longitudinal frame liners and spaced no more than 25" apart the entire length of the longitudinal frame liners.

A minimum of three rear platform cross supports shall be provided and constructed of tubular stainless steel material. Each cross support is to be one continuous piece, "gusseted" where the support meets the rear sub frame rails. Cross supports shall extend the full width of the apparatus body, providing additional support to the tailboard, rear compartment and rear side compartment floors.

The rear sub frame and body supports shall be positioned so as to provide a running board height of approximately 22" to 24" with the vehicle fully loaded.

Entire sub frame is to be welded together prior to installation of the body sides, compartmentation, and water tank.

One (1)
KK-02-0400

COMPARTMENT VENTS

All body compartments shall have a minimum of one (1) louvered panel bolted into a wall to provide the proper airflow inside the compartment. There shall be a filter installed behind the louvered panel. The filter shall be accessible for cleaning by removing the louvered panel on the interior of the compartment.

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One (1)
KK-02-0500

BODY AND PUMP HOUSE FLEX JOINT

When equipped with a fire pump, the body and pump house shall be a separate freestanding component forming a true flex joint between the body and pump house. The intent is to allow either to be easily removed as a single unit without disturbing the other and to provide a flex joint between the two modules. Designs where the pump house and body are interjoined as a common unit do not meet the technical requirement of providing a flex joint or the repairability requirement of these specifications.

One (1)
KK-02-0652

WHEEL WELL LINER AND FENDERETTES

For ease of accessibility and maintenance, wheel well panels shall be double break formed painted smooth plate that is welded in place.

To fully protect the wheel well area from road debris and to aid in cleaning, a full depth (minimum of 25") radius wheel well liner shall be provided. Wheel well liner shall be smooth aluminum to prevent corrosion.

The rear wheel wells shall be radius cut for a streamlined appearance. A polished aluminum fenderette shall be furnished at each rear wheel well opening, held in place with concealed stainless steel fasteners.

One (1)
KK-02-3700

REAR TOW EYES

There shall be two tow eyes furnished under the rear of the body and attached directly to each chassis frame rail. There shall be a reinforcement spreader bar connecting the two tow eyes. Tow eyes are to be constructed of 3/8" plate steel with a 4" I.D. hole, large enough for passing through a tow chain end hook.

One (1)
KK-03-0050

APPARATUS COMPARTMENTATION

There shall be large enclosed compartments on both sides of the body, starting at the front of the hose body and continuing to the rear of the apparatus. These compartments shall be as large as possible, using all available space.

The aluminum treadplate compartmentation tops on each side of the body shall be extended out and downwards a minimum of .50" over the compartment doors forming a drip rail. Corners shall be TIG welded.

Lower or rear face compartments, if specified shall be provided with polished aluminum drip rails.

One (1)
KK-03-0070

SIDE BODY COMPARTMENT ROLL-UP DOOR CONSTRUCTION

Exterior side equipment compartments so specified shall be equipped with roll-up shutter doors to be installed as specified herein.

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The drum assembly shall be fully enclosed and protected from the elements. Pendent plates supporting the door roll assembly shall be bolted in place, adjustable and capable of being removed with common hand tools. Pendent plates and supports that are welded in place do not meet the maintenance and service criteria of these specifications.

One (1)
KK-03-0071

NATURAL FINISH ROLL UP DOORS

The roll-up doors on each side of the apparatus body shall be natural finish aluminum.

One (1)
KK-03-0080

ROLL UP DOORS

R.O.M. Robinson brand extruded aluminum shutter style doors with lift bar latch mechanisms and associated hardware shall be provided and installed as specified.

One (1)
KK-03-0099

DRIVER SIDE

The driver side of the apparatus body shall consist of the following configuration.

One (1)
KK-03-6200

DRIVER SIDE COMPARTMENTS

Three body compartments shall be furnished as follows:

- One compartment ahead of the rear wheels with full height roll-up door.
- One compartment above rear wheels with roll-up door.
- One compartment behind the rear wheels with full height roll-up door.

One (1)
KK-04-0100

PASSENGER SIDE COMPARTMENTS

The passenger side of the apparatus body shall consist of the following compartment configuration.

One (1)
KK-04-6200

PASSENGER SIDE COMPARTMENTS

Three body compartments shall be furnished as follows:

- One compartment ahead of the rear wheels with full height roll-up door.
- One compartment above rear wheels with roll-up door.
- One compartment behind the rear wheels with full height roll-up door.

One (1)
KK-50-0570

REAR BODY CONFIGURATION

Rear apparatus body compartments shall be as follows:

- There shall be one lower compartment with double hinged doors.

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The rear compartment shall have a minimum clear door opening height of 31" between the floor of the slide-out tray and the top of the compartment.

One (1)
KK-50-4200

FLAT BACK BODY

The rear vertical surface of the body shall be flat from side to side.

One (1)
KM-49-1602

ALUMINUM UNISTRUT CHANNEL

Extruded aluminum unistrut channel shall be installed in the following compartments:

Two (2) horizontally mounted Unistrut channels shall be mounted in the compartment over the rear wheels on the driver's side for the mounting of the three (3) SCBA brackets, as later specified.

Six (6)
KM-49-1604

ADJUSTABLE SHELVES

Compartment shelves shall be constructed of .125" smooth Aluminum. Shelves shall have formed edges on three sides for added strength. Shelves shall be fully adjustable, with extruded aluminum unistrut channels provided on the front and rear compartment walls.

Six (6) Shelves shall be provided and located as follows:

One (1) Upper portion of the compartment in front of the rear wheels on the driver's side (L1),

One (1) Upper portion of the compartment behind the rear wheels on the driver's side (L3),

One (1) Lower portion of the compartment behind the rear wheels on the driver's side (L3),

One (1) Upper portion of the compartment in front of the rear wheels on the passenger's side (R1),

One (1) In the compartment over the rear wheels on the passenger's side (R2),

One (1) Upper portion of the compartment behind the rear wheels on the passenger's side (R3).

Four (4)
KM-49-1615

SLIDE-OUT TRAY

Slide-out trays shall be constructed of 3/16" aluminum material. Trays shall have with heavy-duty roller bearing slides with a latch to hold the tray in the "open" and "closed" positions. Tray shall have capacity of 500 pounds.

Four (4) Slide-out trays shall be provided and located on the floor of the following compartments:

One (1) in the compartment in front of the rear wheels on the driver's side (L1),

One (1) in the compartment behind the rear wheels on the passenger's side (R3),

One (1) in the compartment in front of the rear wheels on the passenger's side (R1),

One (1) in the rear compartment.

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Two (2)
KM-50-0100

DRIVER SIDE AIR BOTTLE COMPARTMENTS IN WHEELWELL

SCBA storage compartment shall be provided and located in the driver side rear wheel well of the apparatus body. Compartment door and frame shall be constructed entirely of cast aluminum and have hinged style door. The compartment bottom and rear wall shall be lined with rubber material to protect paint finish of the air cylinder.

Two (2) SCBA storage tubes shall be located in the space available at the rear portion of the rear fender area on the driver's side of the body.

Two (2)
KM-50-0250

PASSENGER SIDE AIR BOTTLE COMPARTMENTS IN WHEELWELL

SCBA storage compartment shall be provided and located in the passenger side rear wheel well of the apparatus body. Compartment door and frame shall be constructed entirely of cast aluminum and have hinged style door. The compartment bottom and rear wall shall be lined with rubber material to protect paint finish of the air cylinder.

Two (2) SCBA storage tubes shall be located in the space available at the rear portion of the rear fender area on the passenger's side of the body.

Four (4)
KM-50-1300

SCBA BRACKETS

SCBA mounting bracket(s) shall be provided and mounted in the enclosed storage compartments as per instructions of Fire Department.

Four (4) SCBA brackets shall be provided in the compartment over the rear wheels on the driver's side (L2).

One (1)
KR-01-0100

EXTRUDED ALUMINUM RUB RAILS

Full body length polished aluminum rub rails shall be bolted in place on the right and left body sides and in the pump panel area. The rub rails shall extend outward beyond the body sides for protection of the compartments and doors. There shall be a bolt on aluminum corner casting on each rear corner to blend the rear tailboard assembly with the side rub rails.

The side rub rails shall be a heavy extruded aluminum "C" channel.

One (1)
KR-04-0002

SIDE AND REAR OVERLAYS

Overlay panels shall be constructed of 3003 polished aluminum treadplate. Polished aluminum overlay shall be provided and installed in the following areas:

- The front face of each side compartment.
- The rear body face and vertical area above tailboard and below hose bed.
- Driver's side and passenger compartment top extending down over side to the compartment doors then forming a drip rail above doors.

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- Front face of hose bed above booster tank.

Overlay shall be installed with "Aluminized" stainless steel bolts to prevent corrosion.

One (1)
KR-04-3000

SLIP-RESISTANT WALKWAY SURFACE

All exterior surfaces designated as stepping, standing, and walking areas shall have an aluminum slip-resistant overlay material installed. The slip-resistant overlay material shall have a raised serrated surface that will allow moisture to drain out either side. The recessed surface shall be one piece solid material to prevent road spray and debris from entering the top surface from below. The slip-resistant overlay material shall meet the requirements of NFPA 13-7.3. The slip-resistant surface shall be installed in the following areas of the apparatus body:

- Step areas of the side running boards.
- Rear step running board step.
- Walkway and standing platforms

One (1)
KR-04-4902

REAR STEP/RUNNING BOARDS

The apparatus body running boards and rear step shall be constructed with slip-resistant surface and shall have bright aluminum treadplate trim around the outside edges. Side running boards and rear step shall be removable for ease of service in case of damage.

One (1)
KR-04-4904

REAR STEP/TAILBOARD

A single piece .188 rear step/tailboard shall be furnished that is a minimum of 8.00" deep and full width of the apparatus body, from rub rail to rub rail. The tailboard shall be provided with a removable casting on each corner for a pleasing appearance.

One (1)
KR-10-0000

HANDRAILS

Access handrails shall be 1 1/4" in diameter extruded aluminum with rubber insert. Access rail escutcheons and brackets shall be chrome plated and attached with stainless steel bolts. Anchoring of posts and framing members for railings of all types shall be of such construction that the completed railing structure shall be capable of withstanding a load of at least 225 pounds applied in any direction at any point along the rail.

One (1)
KR-10-0100

REAR HANDRAILS

Two (2) vertical access handrails shall be provided and mounted on the rear of the apparatus body, one on each side. Each rear handrail to be approximately 48" long.

One (1)
KS-01-0500

REAR FOLDING STEPS

Three (3) NFPA approved folding steps shall be provided and mounted on the rear of the apparatus. All access steps shall have a minimum surface area of 35-square inches, and have a slip-resistant standing surface. The step shall be capable of supporting a 500-lb. load.

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One (1)
NA-00-0010

ELECTRICAL

Electrical wiring, hydraulic lines, air system tubing, and control cables shall be fastened to the frame or body structure of the apparatus and shall be furnished with protective looms, grommets, or other devices, so that any such connector and/or wiring will be protected from shear or tear.

The body 12-Volt electrical system shall be designed specifically for the apparatus body. Automatic reset circuit breakers shall be provided and installed in all circuits.

Wiring data shall be provided with the completed apparatus.

The following electrical equipment and lights shall be provided and installed:

One (1)
NA-00-0080

WIRING SYSTEM

All electrical wiring shall be 14-gauge heavy strand copper with type GXL crosslink high temperature insulation, being circuit function printed every three-inches along its entire length.

Wiring data shall be provided with the completed apparatus.

The following electrical equipment and lights shall be provided and installed:

One (1)
NA-00-1000

TAIL & STOP LIGHTS

Two (2) Weldon #2010 rectangular red stop/tail lights shall be provided and mounted at the rear of the body, one on each side.

One (1)
NA-00-2500

DIRECTIONAL LIGHTS WELDON 2010

Two (2) Weldon #2010, rectangular amber directional signal lights with black arrows shall be provided and mounted at the rear of the body, one on each side below the stop/tail lights.

One (1)
NA-00-4000

BACKUP LIGHTS WELDON 2010 (RECT)

Two (2) Weldon #2010, rectangular clear backup lights shall be provided and mounted, one on each side at the rear of the body. The backup lights shall be mounted below the rear stop/tail and directional lights.

One (1)
NA-00-5300

CLEARANCE LIGHTS

There shall be clearance marker lights installed meeting all DOT requirements. The vehicle clearance lights shall be recess mounted within the rear center tailboard step.

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One (1)
NA-00-5400

LICENSE PLATE BRACKET

A license plate mounting bracket shall be provided complete with a chrome-plated shielded indirect type light. Bracket shall be mounted at the rear of the apparatus body.

One (1)
NA-00-5600

BACKUP ALARM

An automatic, electronic reverse alarm shall be provided and installed. An alarm shall activate whenever the reverse gear is selected in the transmission.

One (1)
NA-00-6300

LOAD MANAGER

The apparatus shall be equipped with a Kussmaul model 091-79 Automatic Load Shedding System for performing continuous electrical load management. The Load Manager shall have the following features:

- Monitor 12-volt system and detect low voltage.
- Capability to control two (2) loads.
- Automatic reset when voltage rises.
- Adjustable voltage setpoint.

The load manager shall be protected against reverse polarity and shorted outputs, and be enclosed in a metal enclosure to enhance EMI/RFI protection. CSFA shall provide for all electrical loads in excess of the NFPA minimum electrical requirements that exceed the alternator output.

Seven (7)
NA-01-1010

COMPARTMENT LIGHTING

All side and rear exterior equipment compartments shall be provided with one (1) clear compartment light mounted to the side walls of the compartment. Compartment lights shall switch on automatically when the compartment door is opened and switch off when the door is closed.

Five (5)
NA-01-1100

ADDITIONAL COMPARTMENT LIGHTS

Additional sealed lights shall be provided and installed for compartments with shelves, as directed by the Fire Department. Additional lights shall be mounted to a bracket attached to the unistrut shelf standard. Lights mounted to the shelf brackets shall have additional wire to allow the light to be adjusted with the shelf. Lights shall be wired to switch on and off with the automatic door jamb switch.

The lights shall be located below the permanent shelves located in the full height compartments on both sides of the body and under the adjustable shelf in the compartment over the rear wheels on the passenger's side.

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One (1)
NA-01-3000

OPEN COMPARTMENT/HAZARD WARNING LIGHT

A red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The hazard light shall also be attached to folding equipment racks and light towers as specified. Light shall be properly marked and identified.

One (1)
NB-02-5200

BATTERY DISCONNECT SWITCH

A master battery on/off switch shall be provided and mounted in a convenient location to the driver. The master battery switch shall disconnect the batteries from all chassis and body accessories.

A "Battery-On" pilot light shall be provided, visible to the driver.

One (1)
NB-02-9100

DASH MOUNTED EMERGENCY ELECTRICAL SWITCH PANEL

An electrical switch panel shall be designed and mounted in the cab dash area. All switches shall be provided with back lighted snap-in legend inserts.

SWITCHES

All emergency light switches shall be lighted, rocker style. Switches shall be internally lit when the switch circuit is in the on position. A plug-in identification label is to be provided and installed adjacent to each rocker switch with backlighting provided behind the label.

An internally lighted "master" switch shall be provided and wired through a heavy-duty relay to activate power to the emergency lights.

One (1)
NB-10-5000

REAR STEP LIGHTS

Two (2) chrome plated lights shall be furnished and installed on the rear face of the body to illuminate the rear step area. Lights shall be wired to the panel light switch at the pump operator's panel.

One (1)
NB-10-5400

ENGINE COMPARTMENT WORK LIGHT

An engine compartment work light shall be provided complete with a switch mounted on the light head.

One (1)
NB-10-5600

PUMP COMPARTMENT WORK LIGHT

A pump compartment work light shall be provided and installed within the pump compartment area complete with a switch mounted on the light head.

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One (1)
NB-10-6000

UNDER CAB LIGHTING

There shall be two (2) lights furnished below the chassis cab, one on each side below each door. The lights shall be wired to switch on and off automatically when the cab doors are opened.

One (1)
NB-10-6800

UNDER BODY LIGHTING

There shall be two (2) lights furnished below the pump house running board, one on each side. The lights shall be wired to turn on and off with a switch located on the pump operator's panel.

One (1)
NB-10-6900

UNDER BODY LIGHTING REAR STEP

There shall be two (2) lights furnished below the rear step, one on each side. The lights shall be wired to turn on and off with a switch located on the pump operator's panel.

Two (2)
NB-30-0830

TELESCOPING 12 VOLT SPOT/FLOODLIGHTS

Fire Research 12-volt spot/flood light Model LTA530-TC shall be provided and mounted on a side mount/bottom raise type telescopic pole. The light shall be mounted on the rear of the apparatus body. The lights shall be wired to the chassis 12-volt system with a switch provided on the light.

Two (2) lights shall be provided, one on each side of the body.

Two (2)
NB-30-1100

REAR SCENE LIGHT

There shall be a Weldon Model 2010, 12-volt 50-watt Scenelight provided and mounted at the rear of the body. Light shall be mounted on an 18-degree downward angled, polished aluminum casting. The light shall be wired through a switch in the chassis cab and be labeled "Rear Scene Light".

Two (2) rear scene lights shall be provided at the rear of the apparatus body, one each side.

One (1)
NB-30-1200

DRIVER SIDE SCENE LIGHT

There shall be a Weldon Model 2010, 12-volt 50-watt Scenelight provided and mounted on the driver side of the body. Light shall be mounted on an 18-degree downward angled, polished aluminum casting. The light shall be wired through a switch in the chassis cab and be labeled "Driver's Side Scene Light".

The light shall be mounted above the pump panel.

One (1)
NB-30-1300

PASSENGER SIDE SCENE LIGHT

There shall be a Weldon Model 2010, 12-volt 50-watt Scenelight provided and mounted on the passenger side of the body. Light shall be mounted on an 18-degree downward angled, polished

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aluminum casting. The light shall be wired through a switch in the chassis cab and be labeled "Passenger's Side Scene Light".

The light shall be mounted above the pump panel.

One (1)
NC-02-9020

AIR HORNS

Two (2) chrome-plated Grover "Stuttertone" air horns shall be provided and mounted on the sides of the engine hood. A pressure protection valve to prevent the use of air horns or other air operated accessories when the system air pressure drops below 80 psi shall be provided.

Air horns shall be controlled from the following switch positions.

One (1)
NC-02-9028

DASH MOUNTED SWITCH

One (1) switch shall be provided on the passenger's side dash for activation of the air horn.

One (1)
NC-02-9040

HORN SELECTOR SWITCH

An air horn/horn selector switch shall be provided and mounted on the switch console to select activation of the chassis horn, or the air horns.

One (1)
NC-03-2000

ELECTRONIC SIREN

A Code 3 Model 3692 V-CON, 200-watt electronic siren with Hi-Lo and hardwired microphone shall be provided and mounted in the cab.

One (1)
NC-03-5000

SPEAKER

Cast Products Model GS1004, 100-watt speaker shall be provided and recess mounted in the front bumper of the chassis. The speaker shall be connected to the electronic siren control unit.

One (1)
NC-04-2900

RED LIGHT

There shall be a steady burning red light furnished on the chassis cab.

The red light shall be provided for California DOT requirements.

One (1)
NE-04-0950

EMERGENCY LIGHTING

The upper and lower zones "A", "B", "C", "D" of the apparatus shall have the following emergency lighting equipment:

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One (1)
NE-04-5900

LIGHT BAR

One (1) Code 3 model 574NFPA1 74" mounted on chassis cab roof to meet the NFPA upper zone A lighting requirement. Light bar to have the following equipment.

- (4) 50-watt standard rotators
- (4) 2 step cascade mirrors
- (2) 3 step cascade mirrors
- Alley lights on each side of the light bar

One (1)
NE-05-0100

REAR LIGHTS

Two (2) Code 3 model 550F rotating lights mounted on the rear of the apparatus body to meet the NFPA Zone B, C, D upper level lighting requirement. The lights shall be activated through the master emergency light switch located on the electrical console. Each light to have the following equipment.

- (1) 50-watt fast rotator
- 1 Red lens / 1 Amber lens

One (1)
NE-05-1210

UPPER ZONE "B, C, D" LIGHT MOUNTING

The upper rear lights designated for Upper Zone "B" shall be mounted on the upper outside corners of the apparatus body, one on each side.

One (1)
NE-05-3400

ZONE A FRONT LIGHTS

There shall be two (2) Code 3 model 4135 halogen flashing lights furnished on the front grill to meet the NFPA Zone A lower level lighting requirement. The lights shall be connected to a relay be activated through the master emergency light switch located on the electrical console.

One (1)
NE-05-4400

ZONE B & D SIDE LIGHTS

There shall be three (3) Code 3 model 4135 halogen flashing lights furnished on each side of the apparatus to meet the NFPA Zone B & D lower level lighting requirement. One light mounted as far forward as possible, one light mounted as far to the rear as possible, and one light mounted between the front and rear lights. The halogen lights shall be connected to a flasher and be activated through the master emergency light switch located on the electrical console.

One (1)
NE-05-8400

ZONE C REAR LIGHTS

There shall be two (2) Code 3 model 4135 halogen flashing lights furnished on the rear of the apparatus body to meet the NFPA Zone C lower level lighting requirement. The halogen lights shall be activated through the master emergency light switch located on the electrical console.

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One (1)
NS-00-0100

12 VOLT ELECTRICAL CERTIFICATION

The low voltage electrical system shall be tested and certified per NFPA 1901 requirements.

A certificate of compliance shall be provided with the completed vehicle upon delivery.

Minimum electrical load consists of the total amperage required to simultaneously operate the following in a stationary mode at the incident scene.

- The propulsion engine and transmission.
- All Clearance and marker lights.
- The communication radio. (Default of 5.0 amps used for testing).
- Illumination of all walking surfaces, the ground at all egress points, controls and instrument panels and 50% of the total compartment lighting load.
- Minimum warning lights required for "Blocking Right of Way" mode.
- The current to simultaneously operate any fire pump, aerial device & hydraulic pumps.
- Anything defined by the purchaser to be critical to the mission of the apparatus.

The first test for the electrical system is the **Reserve Capacity Test**. All the above listed components operate with the engine shut off. After 10 minutes all electrical loads are shut off and the battery system must have adequate reserve power to start the engine.

The second test is the **Alternator Performance Test at Idle**. All the above listed components operate with the engine at an idle. There can be no current draw from the batteries of the apparatus.

The third test is the **Alternator Performance Test at Full Load**. All electrical components shall be activated with the engine operating at governed RPM for two hours. During the test the system voltage can not drop below 11.7-volts or have excessive battery discharge for more than 120 seconds. Any loads not listed in the minimum electrical load may be load managed in order to pass the test.

All of the above tests must be conducted with the engine compartment at approximately 200 degrees.

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One (1)
PA-01-0002

PAINTING

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 an automotive sealant to prevent moisture from entering between any body panels.

The body and all parts shall be thoroughly washed with grease cutting solvents prior to any sanding. After the body has been sanded and the minor imperfections filled and sanded, the body shall be washed again with a solution to remove any contaminants on the surface. The first coating to be applied is a self-etching primer for maximum adhesion to the body metal. The next three coats shall be an acrylic, urethane, primer surfacer. The primer surfacer coat is to be hand sanded with 600-grit sandpaper to insure maximum gloss of the paint. The last step is the application of at least three coats of Concept Acrylic Urethane two component color.

The fire pump and all rigid discharge and suction plumbing shall be painted silver in color.

While constructing the truck body, all aluminum parts shall be properly fitted on the body. The backside of all aluminum parts shall be sanded smooth of any burrs and sharp edges.

All aluminum parts shall be bolted to the body using stainless steel fasteners. Cadmium plated fasteners are not acceptable.

During reassembly of the apparatus, care shall be exercised in fitting and fastening the parts back in their respective position on the vehicle.

Seven (7)
PA-01-0010

NATURAL FINISH ROLL UP DOORS

The roll-up doors on each side of the apparatus body shall be a natural finish aluminum.

One (1)
PA-01-0200

UNDERCOATING

The body sub frame shall be undercoated with a heavy-duty automotive type undercoating before the rubber backing and the compartments are attached. After the body has been attached to the sub frame and all final items have been installed the entire body assembly shall be undercoated

One (1)
PA-01-1505

INTERIOR COMPARTMENT FINISH

The interior vertical walls of the apparatus compartments shall have a smooth swirl finish.

One (1)
PA-01-3500

WHEEL PAINTING

The exterior faces of the front and rear wheels, shall be finished painted to match the apparatus body. Wheels shall be properly prepared and finished with primer coats and topcoats as specified.

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The outer two-inches of each outside wheel rim shall be painted Silver in color, unless otherwise specified.

One (1)
PA-01-4500

PAINT BODY TO MATCH CHASSIS

The apparatus body to be painted to match the chassis.

One (1)
PA-02-1910

LETTERING

Lettering shall be done in gold leaf mylar letters, shaded in black, and encapsulated in clear mylar. Lettering to be placed on each cab door as directed by fire department. Maximum of fifty (50) letters.

One (1)
PA-02-2600

Exact lettering requirements shall be determined prior to construction.

One (1)
PA-02-5300

REFLECTIVE SAFETY STRIPE

A 6" wide 3M brand Scotchlite #680-10 reflective stripe shall be affixed to the perimeter of the vehicle. Striping shall be placed up to 60" above ground level and shall conform to NFPA reflectivity requirements. At least 60% of the perimeter length of each side and width of the rear, and at least 40% of the perimeter width of the front of the vehicle shall have reflective stripe.

The side stripe shall be applied in a Large "Z" design.

The stripe shall be white in color.

One (1)
PC-00-0100

IDENTIFICATION & SAFETY LABELS

A permanent plate shall be installed in the driver's compartment to specify the quantity and type of the following fluids in the vehicle:

1. Engine oil.
2. Engine coolant.
3. Transmission fluid.
4. Pump Transmission Lubrication Fluid.
5. Pump Primer Fluid (If applicable).
6. Drive Axle Lubrication Fluid.
7. Air-conditioning refrigerant.
8. Air-conditioning lubrication oil.
9. Power steering fluid.
10. Transfer case fluid.
11. Equipment rack fluid.
12. Air compressor system lubricant.
13. Generator system lubricant.

When trucks have been UL certified, a permanent plate with pump performance data and serial numbers shall be installed on the pump panel.

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A permanent plate shall be installed in the driver's compartment specifying the maximum number of personnel the vehicle is designed to carry per NFPA standards. It shall be located in an area visible to the driver.

An accident prevention sign stating "DANGER PERSONNEL MUST BE SEATED AND SEAT BELTS MUST BE FASTENED WHILE VEHICLE IS IN MOTION OR DEATH OR SERIOUS INJURY MAY RESULT". The warning sign shall be placed so it is visible from all seating positions.

An accident prevention sign stating "DANGER DO NOT RIDE ON REAR STEP WHILE VEHICLE IS IN MOTION, DEATH OR SERIOUS INJURY MAY RESULT". The warning sign shall be placed so it is visible from the rear step of the vehicle.

If an inlet located at the pump operator's position is valved, it shall be provided with a permanent label that states "WARNING SERIOUS INJURY Or DEATH COULD OCCUR IF INLET IS SUPPLIED BY A PRESSURIZED SOURCE WHEN THE VALVE IS CLOSED".

One (1)
TA-01-0100

OPERATION / SERVICE MANUALS

The manufacturer shall provide with the vehicle upon delivery, one (1) complete delivery manual. These manuals shall be in a notebook type binder, with reference tabs for each section of the vehicle. Within each section shall be:

1. Individual component manufacturer instruction and parts manuals.
2. Warranty forms for body.
3. Warranty forms for all major components.
4. Warranty instructions and format to be used in compliance to warranty obligations.
5. Wiring diagrams.
6. Installation instructions and drawings for major parts.
7. Visual graphics, electronic photos of installations of major parts.
8. Necessary normal routine service forms, publications and components of body portion of the apparatus.
9. Technical publications on training and instructions for major body components.
10. Warning and safety related notices for personnel protection.
11. Cab and chassis manuals on parts, service and maintenance shall be provided.
12. UL Pump Certification sheets, including the Manufacturer's Record of Apparatus construction details.
13. Certificate of Compliance to Electrical Warning System Low Voltage test.
14. Line Voltage Electrical System test certificate.
15. Water tank capacity certificate.

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One (1)
VA-00-0000

ADDITIONAL EQUIPMENT

The following equipment shall be furnished by the apparatus body builder.

Two (2)
VA-03-6000

HARD SUCTION HOSE

A 10-foot length of 6" lightweight PVC, flexible fire department suction hose, first quality non-collapsible type, of a design having a low friction loss and which will not collapse under a vacuum of 23".

Hard suction hose to be equipped with lightweight couplings. Long handles on female and rocker lugs on male couplings.

One (1)
VA-04-3100

SUCTION STRAINER

A 6" NST chrome-plated barrel type suction hose strainer shall be provided.

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One (1)
1B-00-0500

WARRANTY

We warrant each new motorized fire apparatus manufactured by CENTRAL STATES FIRE APPARATUS for a period of ONE YEAR from the date of delivery, except for chassis and other components noted herein.

Under this warranty we agree to furnish any parts to replace those that have failed due to defective material or workmanship where there is no indication of abuse, neglect, unusual or other than normal service providing that such parts are, at the option of CENTRAL STATES FIRE APPARATUS, made available for our inspection at our request, returned to our factory or other location designated by us with transportation prepaid within thirty days after the date of failure or within one year from the date of delivery of the apparatus to the original purchaser, whichever occurs first, and inspection indicates the failure was attributed to defective material or workmanship.

The warranty on the chassis and chassis supplied components, storage batteries, generators, electrical lamps and other devices subject to deterioration is limited to the warranty of the manufacturer thereof and adjustments for the same are to be made directly with the manufacturer by the customer.

This warranty will not apply to any fire apparatus that has been repaired or altered outside our factory in any way, which in our opinion might affect its stability or reliability.

This warranty shall not apply to those items that are usually considered normal maintenance and upkeep services: including, but not limited to, normal lubrication or proper adjustment of minor auxiliary pumps or reels.

This warranty is in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on our part. We neither assume nor authorize any person to assume for us any liability in connection with the sales of our apparatus unless made in writing by CENTRAL STATES FIRE APPARATUS.

One (1)
1B-00-2900

10 YEAR STAINLESS STEEL BODY WARRANTY

Central States Fire Apparatus LLC warrants to the original purchaser only, that the all stainless steel body, fabricated by Central States Fire Apparatus, under normal use and with reasonable maintenance, be structurally sound and will remain free from corrosion perforation for a period of TEN (10) years.

This warranty does not apply to the following items that are covered by a separate warranty: paint finish, hardware, moldings, and other accessories attached to this body. In addition, this warranty does not apply to any part or accessory manufactured by others and attached to this body.

CENTRAL STATES FIRE APPARATUS MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE STAINLESS STEEL BODY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND HEREBY DISCLAIMED.

Central States Fire Apparatus will replace without charge, repair or make a fair allowance for any defect in material or workmanship demonstrated to its satisfaction to have existed at the time of

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delivery or not due to misuse, negligence, or accident. If Central States Fire Apparatus elects to repair this body, the extent of such repair shall be determined solely by Central States Fire Apparatus, and shall be performed solely at the Central States Fire Apparatus factory, or at an approved facility. The expense of any transportation to or from such repair facility shall be borne by the purchaser and is not an item covered under this warranty.

Central States Fire Apparatus will not be liable for consequential damages and under no circumstances will its liability exceed the price for a defective body. The remedies set forth herein are exclusive and in substitution for all other remedies to which the purchaser would otherwise be entitled.

Central States Fire Apparatus will be given a reasonable opportunity to investigate all claims. The purchaser must commence any action arising out of, based upon or relating to agreement or the breach hereof, within twelve months from the date the cause of the action occurred.

One (1)
1B-00-3500

PAINT WARRANTY

The PPG paint performance guarantee will cover the areas of the vehicle finished with the specified product for a period of FIVE (5) years beginning the day the vehicle is delivered to the purchaser.

The areas as outlined on the Guarantee Certificate, will be covered for the following paint failures:

GUARANTEE INCLUSIONS:

FULL APPARATUS BODY MANUFACTURED AND PAINTED BY CENTRAL STATES FIRE APPARATUS:

- * Peeling or delamination of the topcoat and/or other layers of paint.
- * Cracking or checking.
- * Loss of gloss caused by cracking, checking, or hazing.
- * Any paint failure caused by defective PPG Fleet Finishes which are covered by this guarantee.

All guarantee exclusions, limitations, and methods of claims are covered in the full certificate provided to the original purchaser.

One (1)
1B-01-1000

SUBFRAME WARRANTY

Subject to the provisions, limitations and conditions set forth in this warranty, Central States Fire Apparatus, LLC (hereby referred to as "seller"), hereby warrants to each original purchaser only that each new hot dip galvanized or stainless steel body sub frame (exclusive of paint finish and hardware) is structurally sound and free of all structural defects of both material and workmanship and further warrants that it will maintain such structural integrity. This warranty terminates upon transfer of possession or ownership by original purchaser.

This warranty is conditioned upon normal use and reasonable maintenance of such sub frame; prompt written notice of all defects to seller or one of the seller's then authorized dealers in the area; no repair or additions there to except by seller or authorized by it; said defect not resulting

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from misuse, negligence, accident, remount, overloading beyond applicable weight rating by customer or third parties. If any such conditions are not complied with, this warranty shall become void and unenforceable.

Should repairs become necessary under the terms or the warranty, the extent of that repair shall be determined solely by the seller and shall be performed solely at Central States Fire Apparatus, LLC or a repair facility designated by the seller. The expense of any transportation to or from such repair facility shall be that of the purchaser and is not an item covered by this warranty.

Seller reserves the unrestricted right at any time from time to time to make changes in the design of and/or improvements on its products without thereby imposing any obligation on itself to make corresponding changes or improvements in or on its products theretofore manufactured.

EXCLUSIONS AND LIMITATIONS: THIS MANUFACTURER'S WARRANTY IS PROVIDED IN PLACE OF ANY AND ALL OTHER REPRESENTATIONS OR IMPLIED WARRANTIES. NO PERSON IS AUTHORIZED TO MAKE ANY REPRESENTATIONS OR WARRANTY ON BEHALF OF CENTRAL STATES FIRE APPARATUS, LLC OR ANY OF ITS DISTRIBUTORS OTHER THAN SET FORTH IN THIS MANUFACTURER'S WARRANTY. YOUR RIGHT TO SERVICE AND REPLACEMENT OF PARTS ON THE TERMS EXPRESSLY SET FORTH HERIN ARE YOUR EXCLUSIVE REMEDIES AND NEITHER THE MANUFACTURER NOR ANY OF ITS DISTRIBUTORS SHALL BE LIABLE FOR DAMAGES, WHETHER ORDINARY, INCIDENTAL OR CONSEQUENTIAL.