

# Shoshone City & Rural Fire District

One (1)

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## COMMERCIAL CHASSIS SPECIFICATIONS

**MAKE:** Sterling LT8500

**YEAR:** 2006

**ENGINE:** Cummins ISC 330, 330 HP @ 2000 RPM  
2200 RPM Governed Speed  
950 lb./ft. @ 1400 RPM torque

**ENGINE EQUIPMENT:** Engine mounted oil check & fill  
Dual air intake through LH and RH sides w/Donaldson air cleaner  
Leece Neville 12 volt, 270 amp alternator  
Three (3) Alliance 931, group 31 batteries, 1950 CCA  
18.7 CFM air compressor  
Pac-Brake exhaust brake for secondary braking requirements  
Single horizontal muffler, right side mounted  
Horton Drivemaster On/Off fan drive  
Cummins supplied engine mounted fuel filter and fuel water separator w/o heater  
Fleetguard LF-3000 combination full flow/bypass oil filter  
Fleetguard coolant filter  
900 sq.-in. copper/brass radiator  
Antifreeze to 34 degrees F, ethylene glycol  
Gates Blue Stripe coolant hoses  
Constant tension hose clamps for coolant hoses  
Radiator draincock  
Air intake warmer  
Delco 12 volt, 37MT starter

**TRANSMISSION:** Allison 3500EVS automatic transmission with PTO Provision for Fire/Emergency  
Magnetic plugs, engine drain  
Air to oil transmission cooler

**FRONT AXLE & SUSPENSION:** Meritor MFS-16-143A front axle rated at 16,000 lbs.  
Meritor 16.5 x 6 Q+ cast spider cam front brakes  
Non-asbestos front brake lining  
Cast iron front brake drums  
Chicago Rawhide Scotseal Plus XL front oil seals  
Meritor automatic front slack adjusters  
TRW TAS-85 power steering  
Power steering pump  
2 Quart power steering reservoir  
Oil/Air power steering cooler  
16,000 lb. flat leaf front suspension  
Bronze bushings front suspension

**REAR AXLE & SUSPENSION:** Meritor tandem rear axle rated at 44,000 lbs.  
Rear axle to be 2-speed type  
Iron rear axle carrier with optional heavy-duty axle housing  
17T Meritor driveline

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	17T Meritor interaxle driveline Meritor 16.5 x 7 Q+ cast spider cam rear brakes Non-asbestos rear brake lining Cast iron front brake drums Chicago Rawhide Scotseal rear oil seals Haldex Longstroke 2-Drive axle spring parking chambers Meritor automatic rear slack adjusters Hendrickson RT463 rear suspension rated at 46,000 lbs.
<b>BRAKE SYSTEM EQUIPMENT:</b>	Wabco ABS w/o traction control enhancement Reinforced nylon, fabric braid & wirebraid chassis air lines Standard brake system valves Combo-ABS/Service brake valve with 4 psi crack pressure BW AD-9 brake line air dryer w/heater Steel air brake reservoirs Petcock drain valves on all air tanks
<b>FRAME &amp; WHEELBASE:</b>	226" Wheelbase, 162" C/A 3/8" x 3-3/16" x 10-1/4" steel frame 5/16" x 3-1/2" x 10-5/16" C channel outer frame reinforcement 12" chrome steel bumper Front tow hooks, frame mounted
<b>FUEL TANK:</b>	55 gallon rectangular steel fuel tank, right side Steel fuel tank brackets Reinforced nylon fuel hose Fuel cooler In tank fuel level sender
<b>FRONT TIRES, HUBS &amp; WHEELS:</b>	Michelin XZY2, 315/80R 22.5 20 ply tires Iron front hubs 22.5 x 9.00 10-Hub pilot, 5.25 inset 5-hand steel disc front wheels
<b>REAR TIRES, HUBS &amp; WHEELS:</b>	Michelin XDE M/S, 275/80R 22.5 12 ply tires Iron rear hubs 22.5 x 8.25 10-Hub pilot, 5-hand steel disc rear wheels
<b>CAB EXTERIOR:</b>	113" BBC Conventional steel cab Rubber cab mounts Grab handles LH/RH Hood mounted chromed plastic grille Fiberglass hood Single electric horn Single rectangular halogen headlights with bright bezels Aerodynamic marker lights Front turn signal lamps Dual West Coast Mirrors w/8" convex mirrors mounted under main mirrors Tinted front and rear windows, door glass Manual door window regulators 8 liter windshield washer reservoir w/o fluid level indicator

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<b>CAB INTERIOR:</b>	Opal Gray vinyl interior Molded plastic door panels Vinyl floor mats with single insulation Dash mounted ash trays & lighter Heater, defroster, air conditioner Main fresh air inlet & main recirculation filters Automatic self-reset circuit breakers 12 volt negative ground electrical system Center mounted dome light and LH/RH courtesy light in kick panels Cab door latches with manual door locks EZYRider Mid back air suspension drivers seat w/adjustable lumbar support 2-man mid back passenger seat Vinyl w/vinyl insert drivers seat 3 point driver & outboard passenger seat belts with retractors 2 point center passenger seat belt Fixed steering column 2 spoke, 18" black steering wheel Driver and passenger interior sun visors
<b>INSTRUMENTS &amp; CONTROLS:</b>	Sterling electronic gauge cluster Black gauge bezels Multiplex instrument panel Low air pressure light and buzzer Primary and secondary air pressure gauges Dash mounted air restriction gauge Cruise control-electronic, controls on steering wheel spokes Odometer/trip/hour/diagnostic/voltage display Electric fuel gauge Electric engine coolant temperature gauge Transmission oil temperature gauge Engine and trip hour meters Electric engine oil pressure gauge Electronic speedometer Electronic tachometer Digital voltage display Single electric windshield wiper motor w/delay Three position rotary headlamp switch One valve parking brake system with warning indicator Self canceling turn signal switch Heavy duty mechanical flasher
<b>PAINT:</b>	Single color paint – approved by Fire Department.

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One (1)  
BS-10-3600

### **CHASSIS**

A chassis shall be furnished per the enclosed specifications located in the Chassis section of this proposal.

One (1)  
CC-50-0510

### **STEP TYPE FUEL TANK**

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

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-50-6000

### **REAR MUD FLAPS**

Heavy-duty, black colored, rubber mud flaps shall be furnished and installed behind the rear wheels of the vehicle. Mud flaps shall extend the full width of the rear duals 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.

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### PUMP AND PLUMBING

One (1)  
DD-00-0480

#### **WATEROUS CX-1000 GPM SINGLE STAGE FIRE PUMP**

The centrifugal type fire pump shall be a Waterous model CX midship mounted with a rated capacity of 1000 GPM. The pump shall meet NFPA 1901 requirements.

One (1)  
DD-01-4000

#### **SINGLE STAGE MIDSHIP MOUNTED FIRE PUMP**

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

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 the 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

The pump casing shall be a three-piece, vertically split design, high strength gray iron.

The impeller shaft shall be stainless steel, heat treated, and precisely machined and ground to size. All bearings are to be oil or grease lubricated, ball-type, located outside the pump casing in the pump transmission, to accurately align and support the impeller shaft assembly and input shaft. Ball bearings are to be deep groove type, designed to carry both radial and axial loads. A face-type, self-adjusting, corrosion and wear resistant mechanical seal is to be provided.

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

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### 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.

\*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-04-4500

### 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

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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-04-7300

### APPARATUS MONITORING SYSTEM

The Fire Research **INControl** pressure governor and all-in-one instrument panel uses state of the art programmable microprocessor technology. It will maintain a steady pump discharge pressure by controlling engine speed or hold a selected engine RPM. It offers complete engine control and remote display in a single compact unit. The **INControl** operates in one of two modes, pressure or RPM. In pressure mode the **INControl** maintains a constant pump discharge pressure. The discharge pressure is monitored and compared to the selected pressure setting, the engine RPM is varied to keep the discharge pressure at the selected setting. In RPM mode the **INControl** maintains a constant engine RPM. The pump discharge pressure is monitored and can vary but, as a safety feature it will be limited to an increase of 30 PSI. If the discharge pressure increases 30 PSI the governor will automatically lower the engine RPM to prevent a high pressure surge. The panel has three 4-digit LED displays for pump discharge, pump intake, and engine RPM. The LEDs are more than 1/2 high. There is an LED bar graph to show PSI or RPM setting depending on the mode, and three LED bar graphs that provide a constant display of the battery voltage, engine coolant temperature, and engine oil pressure.

All controls and indicators are located on the front of the control module.

#### Features:

- Power Up in Pressure Mode
- Automatic Regulation of Pump Discharge Pressure
- Manual Control of Pressure or Engine RPM Settings
- Field Programmable Presets
- Diagnostic Capabilities
- No Pressure or RPM Variation When Changing Modes
- Limits Increase of Pressure When in RPM Mode
- Recognition of No Water Condition With Automatic Response
- Interlock Signal Recognition and OK To Pump LED
- Return to Engine Idle With the Push of a Button

The monitoring system shall be furnished, installed and tested by the apparatus body builder.

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 control handle is to be provided and located below the driver's side running board of the pump house, properly identified as MASTER DRAIN.

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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-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".

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One (1)  
EE-02-5100

### **HOT DIP GALVANIZED INTAKE MANIFOLD**

The suction manifold shall be fabricated from heavy-duty tubular steel. The suction manifold shall have radiused sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded and pressure tested prior to the galvanizing process. After testing the entire suction manifold shall be hot dip galvanized to minimize corrosion. The hot dip galvanized suction manifold shall be attached to the pump intake volute with a heavy-duty, flexible victaulic coupling.

The hot dip galvanized manifold assembly shall have a ten (10) year warranty.

One (1)  
EE-02-5400

### **DRIVER SIDE STEAMER INLET**

There shall be one (1) steamer inlet furnished on the driver side of pump panel. The suction inlet shall have 5" 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-02-5500

### **PASSENGER SIDE STEAMER INLET**

There shall be one (1) steamer inlet furnished on the passenger side of pump panel. The suction inlet shall have 5" 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-02-1500

### **2-1/2" GATED SUCTION INTAKE DRIVER SIDE**

A 2-1/2" independent gated suction intake shall be provided on the driver's side pump panel. Intake shall be provided with a quarter-turn valve and 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.

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One (1)  
ES-02-1510

### **SUCTION VALVE CONTROL**

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

One (1)  
FA-00-1000

### **HOT DIP GALVANIZED DISCHARGE MANIFOLD**

The discharge manifold shall be fabricated from heavy-duty tubular steel. The discharge manifold shall be fabricated, welded, all fittings attached and pressure tested prior to the galvanizing process. After testing the entire suction manifold shall be hot dip galvanized to minimize corrosion. The hot dip galvanized discharge manifold assembly shall be bolted to the pump and have stabilizer arms attached to reinforce the discharge manifold.

The hot dip galvanized manifold assembly shall have a ten (10) year warranty.

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" 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.

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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.

Two (2)  
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.

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

Two (2)  
FA-01-1001

### MANUAL VALVE

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

Two (2)  
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.

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.

One (1)  
FH-03-0100

### TANK TO PUMP PLUMBING

A 3" *Akron* ball type gated suction valve shall be furnished from the tank to the pump, complete with a flexible connection and enclosed in the pump compartment.

A check valve shall be provided and installed in the line between the tank and the pump to prevent the possibility of backfilling the booster tank through the tank to pump suction line.

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

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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.

One (1)  
FJ-00-0406

### HOT DIP GALVANIZED BOOSTER TANK

The booster tank shall be constructed of hot dip galvanized 10-gauge steel with 7-gauge steel end heads and bottom. Booster tank shall be of a "T" shape and design to allow for maximum compartmentation. Tank manufacturer shall provide a twenty (20) year warranty against defects in materials or workmanship to the original owner.

Tank shall have a bolted on, removable top for inspection and clean out of all tank compartments. Removable top shall be bolted on with corrosion resistant external bolts. Bolts are not to be in contact with the contents of the tank. There shall be a reusable gasket between the tank and cover. Booster tank shall be provided with proper splash baffles according to the latest edition of NFPA pamphlet 1901. All baffles are installed with the top flange of the baffles flush to the inner side of the fully removable lid to insure support for any hose bed weight load.

The tank shall be removable from the body without disturbing the body side panels. The booster tank shall be mounted on a steel sub frame. The steel sub frame shall consist of longitudinal 3" x 4.1# channels, and 3" x 4.1# transverse channels to provide bottom support. The cradle shall be installed to prevent fore/aft and side to side movement of the tank. The booster tank shall rest on rubber pads to isolate the tank frame from the body sub frame.

There shall be a minimum of a 4" overflow to discharge under the tank and behind the rear axle. Sump to be 10" x 6 x 6" and have a 3" clean out plug. The sump shall have an anti-whirlpool baffle plate attached on the topside. Fill opening shall have a hinged lid and an open release if the tank is filled at an excess rate. Fill opening shall have a hinged stainless steel screen to prevent any objects from dropping into the tank.

One (1)  
FJ-02-6600

### BOOSTER TANK

A 3000-gallon hot dip galvanized booster tank shall be provided.

The sides of the water tank shall extend over the tops of the side compartments.

One (1)  
FJ-02-7610

### BOOSTER TANK SUBFRAME

The booster tank shall be mounted on a steel sub frame. Steel sub frame shall consist of two (2) longitudinal 3" x 4 pound channels and two (2) 3" x 4 pound channels 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 3" x 4 pound 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)  
FJ-04-1000

### REAR QUICK DUMP

A 10" Newton quick dump shall be installed on the rear center of the water tank.

One (1)  
FJ-04-1100

The dump valve shall be externally mounted with the dump valve assembly extending through the rear of the apparatus body panel.

One (1)  
FJ-04-1200

The control for the rear quick dump shall be manually operated at the rear of the body.

One (1)  
FJ-04-1300

The rear Newton dump valve, furnished on the apparatus, shall be painted steel.

One (1)  
FJ-04-1400

There shall be a telescoping extension chute furnished on the dump valve. The telescoping extension chute shall be manually operated and have retention device to hold in the chute in the closed position for travel. The telescoping chute shall be attached to the dump valve with stainless steel bolts.

One (1)  
FJ-04-7000

### EXTERNAL TANK FILL

An external tank fill shall be provided and installed at the rear of the body. The tank fill shall include a quarter turn 2-1/2" Akron ball valve with a chrome-plated female swivel, plug and chain.

One (1)  
FK-01-0500

### 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, flush mounted chrome plated trigger latch, and stainless steel cable end stops. Electrical

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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-01-2300

### **PUMP PANELS**

The right and left side pump panels shall be constructed entirely of aluminum, and be coated with black thermo-plastic 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) 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-10-0010

### **PUMP OPERATORS PANEL**

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

One (1)  
FK-10-0300

### **APPARATUS MONITORING SYSTEM**

The Fire Research **INControl** pressure governor and all-in-one instrument panel uses state of the art programmable microprocessor technology. It will maintain a steady pump discharge pressure by controlling engine speed or hold a selected engine RPM. It offers complete engine control and remote display in a single compact unit. The **INControl** operates in one of two modes, pressure or RPM. In pressure mode the **INControl** maintains a constant pump discharge pressure. The discharge pressure is monitored and compared to the selected pressure setting, the engine RPM is varied to keep the discharge pressure at the selected setting. In RPM mode the **INControl** maintains a constant engine RPM. The pump discharge pressure is monitored and can vary but, as a safety feature it will be limited to an increase of 30 PSI. If the discharge pressure increases 30 PSI the governor will automatically lower the engine RPM to prevent a high pressure surge.

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The panel has three 4-digit LED displays for pump discharge, pump intake, and engine RPM. The LEDs are more than 1/2 high. There is an LED bar graph to show PSI or RPM setting depending on the mode, and three LED bar graphs that provide a constant display of the battery voltage, engine coolant temperature, and engine oil pressure.

All controls and indicators are located on the front of the control module.

### Features:

- Power Up in Pressure Mode
- Automatic Regulation of Pump Discharge Pressure
- Manual Control of Pressure or Engine RPM Settings
- Field Programmable Presets
- Diagnostic Capabilities
- No Pressure or RPM Variation When Changing Modes
- Limits Increase of Pressure When in RPM Mode
- Recognition of No Water Condition With Automatic Response
- Interlock Signal Recognition and OK To Pump LED
- Return to Engine Idle With the Push of a Button

The monitoring system shall be furnished, installed and tested by the apparatus body builder.

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.

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

Four (4)  
FK-10-3000

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

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.

## Shoshone City & Rural Fire District

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.

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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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

### **HOSEBED CAPACITY**

The hose bed will be configured to be 55 cubic feet, unless the desired hose load requires more area.

The hose bed capacity shall be determined prior to construction.

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.

One (1)  
HD-00-5800

### **HARD SUCTION HOSE STORAGE COMPARTMENTS**

Two (2) large storage compartments shall be provided below the upper "T" of the booster tank, one on each side. The design shall allow the hose to be individually removed from the rear of the apparatus. Each hard suction hose compartment shall have aluminum treadplate door with stainless steel hinge and push to latch door catches.

One (1)  
HD-00-7015

### **HARD SUCTION HOSE FURNISHED BY BODY BUILDER**

The hard suction hose shall be furnished by the body builder. See equipment section of this document for make and model of hard suction hose.

One (1)  
KB-02-1000

### **APPARATUS BODY**

The apparatus body compartments shall be fabricated of twelve gauge A-60 Galvanneal steel.

The side compartments shall be an integral assembly with the rear fenders.

Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.

Compartment floors shall be of the sweep out design with the floor higher than the compartment door lip.

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Drip protection shall be provided above the doors by means of bright aluminum extrusion or formed bright aluminum treadplate.

The top of the compartment shall be covered with bright aluminum treadplate formed over the edges on the front, rear and outward side. The corners of the aluminum covers shall be "TIG" welded.

All screws and bolts that protrude into a compartment shall have acorn nuts installed to prevent injury and snagging.

### **FASTENERS**

All aluminum and stainless steel components shall be attached using stainless steel fasteners.

Compartment door hinges, handrails and running boards shall be attached using minimum 1/4" diameter machine bolt fasteners.

3/16" diameter fasteners shall only be used in nonstructural areas such as; door handles, trim moldings, gauge mounting, etc.

One (1)  
KB-10-4400

### **BODY DIMENSIONS**

The tandem axle body shall be 102" wide, reference sales drawing for actual length and height dimensions.

The water tank shall extend over the side compartments.

One (1)  
KK-01-1100

### **APPARATUS BODY SUB-FRAME**

The apparatus body sub frame shall be constructed entirely of heavy steel structural channel material.

Two full frame lengths, three-inch (3") 4 pound per foot longitudinal steel channels shall form the sides of the body sub frame and sides of the water tank cradle. Sub frame cross members shall be fabricated with three inch (3") 4 pound per foot heavy steel channel cross members welded to the longitudinal body sub frame sides and the full length frame pads.

Two full frame length 1/2" x 3" flat steel frame pads shall be attached to the body sub frame and rest on top of the chassis frame rails for proper frame weight distribution.

The steel frame pads, longitudinal steel channels and sub frame cross members shall be attached to the chassis frame rails using heavy "U" bolt fasteners to allow removal of the sub frame and body assembly from the chassis. There shall be a barrier provided between the sub frame and body to prevent electrolysis.

A minimum of two rear platform support channels shall be provided and constructed of 4.3 lb. per foot heavy steel material. Each support channel shall have welded in gusset where the support meets the rear sub frame rails.

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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.

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-02-0654

### 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 galvanneal steel 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.

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One (1)  
KK-03-0065

### **HINGED COMPARTMENT DOOR CONSTRUCTION**

All hinged compartment doors shall be of the flush style so that the entire door fits flush against the apparatus body sides. Doors shall be designed, in the closed position, to have the painted edges protected from damage on the tops by forming the treadplate compartment tops into a extended drip edge, on the bottoms by the rub rail.

Doors shall be a minimum 2" thick, fabricated of a minimum of .125 smooth aluminum. Full panel inner compartment door liners shall be provided and constructed of smooth aluminum. The compartment doors shall have a foam panel glued in place between the exterior and interior door skin. Exterior door panels shall be smooth with no welds visible on the exterior skin. Double door compartments shall be equipped with a secondary latch to hold the secondary door in position.

All compartment door hinges shall be full-length piano type constructed of a minimum 14-gauge type 304 polished stainless steel with 3/16" stainless steel hinge pin with dual directional bolt holes for ease of adjustment.

When horizontally hinged lift-up doors are specified, they shall be equipped with heavy-duty gas filled props to hold the doors in the open position. All other hinged doors shall be equipped with spring loaded hold open device specifically designed for use on vertically hinged doors. Door holders shall be bolted in position. The door ajar switches shall be fully enclosed within structural members and shall not extend into the clear door opening.

All compartment doors shall be provided with hollow core weather stripping to provide a weather tight seal at the door opening and to prevent road spray and debris from entering the compartment.

One (1)  
KK-03-0076

### **EXTERIOR DOOR LATCHES**

Side exterior compartment doors shall be furnished with a large stainless steel spring loaded D-handle with slam type latches. D-handles shall have the large "bent" D-ring for ease of grabbing the handle even when wearing mitts or gloves.

A non-moisture absorbing gasket shall be installed between the door latch and the door skin panel.

One (1)  
KK-03-6700

### **DRIVER SIDE COMPARTMENT**

One body compartment shall be furnished as follows:

- One compartment ahead of the rear wheels with double hinged doors.
- Full depth fender and wheel well liner over tandem rear axle.

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One (1)  
KK-04-6700

### **PASSENGER SIDE COMPARTMENT**

One body compartment shall be furnished as follows:

- One compartment ahead of the rear wheels with double hinged doors.
- Full depth fender and wheel well liner over tandem rear axle.

One (1)  
KK-50-0670

### **REAR BODY CONFIGURATION**

Rear apparatus body shall be flat with no compartment doors.

One (1)  
KK-50-4200

### **FLAT BACK BODY**

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

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.
- 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 15-7.3. The slip-resistant surface shall be installed in the following areas of the apparatus body:

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- 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-04-4908

### REAR STEP/TAILBOARD

A single piece .188 rear step/tailboard shall be furnished that is a minimum of 12.00" 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.

Three (3)  
KS-01-1800

### CAST ALUMINUM STEPS

NFPA approved cast aluminum steps shall be provided and mounted on 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.

Three (3) steps shall be provided and mounted at the rear of the apparatus body for access to the top of the vehicle.

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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-00-7000

### **HIGH IDLE SYSTEM**

There shall be a high idle system furnished and installed on the apparatus. The high idle system shall have an on/off switch located in the chassis on the switch console. The system shall have an interlock that will disable the solenoid if the parking brake is not completely set.

Four (4)  
NA-01-1000

### **COMPARTMENT LIGHTING**

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

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.

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### 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.

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.

One (1)  
NB-30-0200

### REAR DECK LIGHTS

Two (2) Unity #AG series, chrome-plated, six-inch rear mounted lights with swivel type mounting bracket and individual switches shall be provided.

One light shall be a **35-watt 75,000 candlepower spot** lamp, and one light shall be a **35-watt 1,100 candlepower flood** lamp.

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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)  
NE-04-0950

### **EMERGENCY LIGHTING**

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

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-05-4200

### **ZONE B & D SIDE LIGHTS**

There shall be three (3) Code 3 model 40 strobe 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 lights shall be connected to a power supply 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.

One (1)  
NJ-01-0200

### **LIGHT BAR**

One (1) Weldon model 9188-5403 halogen 54" light bar mounted on chassis cab roof to meet the NFPA upper zone A lighting requirement. The lights shall be activated through the master emergency light switch located on the electrical console. Light bar to have the following equipment:

- (3) Rotators
- (4) Mirrors

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One (1)  
NJ-01-1100

### REAR WARNING LIGHTS

Two (2) Weldon model 9188-5840 rear rotators 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) 55-Watt Halogen Rotator
- (1) Red lens on drivers side
- (1) Amber lens on passenger side

One (1)  
NJ-01-1120

### UPPER ZONE "B, C, D" LIGHT MOUNTING

The upper rear lights designated for Upper Zone "B" shall be mounted on cast aluminum stanchions attached to the apparatus body, one on each side.

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.

1000 GPM Pumper/Tender

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

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One (1)  
PA-01-0003

### 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.

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-01-1515

### INTERIOR COMPARTMENT PAINT

The interior vertical compartment walls are to be painted white with a black colored spatter finish material.

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.

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

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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

### **LETTERING SHALL BE AS FOLLOWS:**

Lettering requirements shall be determined prior to construction.

One (1)  
PA-02-4010

### **REFLECTIVE SAFETY STRIPE**

A 4" 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 straight across the body.

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 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.

## Shoshone City & Rural Fire District

One (1)  
VA-00-0000

### **ADDITIONAL EQUIPMENT**

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

Two (2)  
VA-03-5000

### **HARD SUCTION HOSE**

A 10-foot length of 5" 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.

Two (2) 5" x 10' lengths of hard suction hose shall be provided.

One (1)  
VA-04-2500

### **SUCTION STRAINER**

A 5" 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-00-2000

### **5 YEAR GALVANNEAL BODY WARRANTY**

CENTRAL STATES FIRE APPARATUS (CSFA) warrants to the original purchaser only, that the all Galvanneal body, fabricated by CENTRAL STATES FIRE APPARATUS, under normal use and with reasonable maintenance, will be structurally sound and will remain free from corrosion perforation for a period of FIVE (5) 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 GALVANNEAL BODY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE 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

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existed at the time of 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 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.