

Lemhi Co. F.P.D., ID

One (1) **INTERNATIONAL CHASSIS** Y__N__

A International 2-door chassis per the attached specifications shall be furnished:

CHASSIS ADDITIONS AND MODIFICATIONS

One (1) **FLUID DATA PLAQUE** Y__N__

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

1. Engine oil
2. Engine coolant
3. Chassis transmission fluid
4. Drive axle lubricant
5. Power steering fluid
6. Pump transmission lubrication fluid
7. Paint manufacturer and color numbers
8. Other NFPA applicable fluid levels or data as required

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

One (1) **APPARATUS DIMENSION DATA** Y__N__

One (1) highly visible label indicating the overall height, length, width and weight of the vehicle shall be installed in the cab dash area.

One (1) **NO RIDE LABEL** Y__N__

One (1) "NO RIDERS" label shall be applied on the vehicle at the rear step area or other applicable areas. The label shall warn personnel that riding in or on these areas, while the vehicle is in motion is prohibited.

One (1) **CAB SEATING POSITION LIMITS** Y__N__

One (1) label shall be installed in the cab to indicate seating positions for firefighters. A weight allowance of 250 pounds for each shall be factored into the gross vehicle weight rating of the chassis.

One (1) **REAR TOWING PROVISIONS** Y__N__

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) **TOW PLATE PAINTING** Y__N__

The tow plates shall be painted black.

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One (1) **EXHAUST SYSTEM** Y__N__

The chassis exhaust shall be modified and redirected to the right side of the apparatus and will exit ahead of the rear wheel.

One (1) **FRONT MUD FLAPS** Y__N__

One (1) pair of black mud flaps shall be installed behind the front wheels.

One (1) **REAR MUD FLAPS** Y__N__

One (1) pair of black mud flaps shall be installed behind the rear wheels.

One (1) **CAB STEPS** Y__N__

The driver's side cab step area on the 2 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.

One (1) **RIGHT SIDE CAB STEP** Y__N__

The right side chassis fuel tank and step area of the commercial chassis shall be covered with aluminum tread plate with a slip resistant step surface in compliance to applicable NFPA standards.

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PUMP AND PLUMBING SPECIFICATIONS

One (1)

Y__N__

WATEROUS CSC10 SINGLE STAGE PUMP

A Waterous model CSC10, single stage centrifugal pump shall be designed to mount on the chassis frame rails and shall be split-drive shaft driven. The pump casing shall be of high-tensile, close-grained gray iron. Pump body shall be horizontally split in two (2) sections, for easy removal of impeller assembly including wear rings and bearings from beneath the pump without disturbing the mounting or piping.

Impeller

A matched bronze impeller specifically designed for the fire service will be provided. It will be accurately balanced both mechanically and hydraulically, for vibration-free operation.

Stainless steel heat-treated and precisely ground to size. It shall be supported on both ends by oil or grease lubricated ball bearings. Replaceable wear rings, bronze, reverse-flow, labyrinth-type shall be provided.

Deep groove ball bearings shall be located outside the pump to give rugged support and proper alignment to the impeller shaft. The bearings shall be oil or grease lubricated. All bearings shall be completely separated from the water being pumped.

Pump Transmission

The housing shall be constructed of high strength aluminum and be of three (3) piece, horizontally split design. The transmission driveline shafts shall be made from alloy steel forging, hardened and ground to size. The drive and driven sprockets shall be made of steel and shall be carbonized and hardened. The drive chain shall be Morse HV involute form chain. The lubrication system shall be an impeller shaft driven oil pump to deliver oil to an integral spray header, to completely pressure lubricate the drive chain.

Pump Mounting

The pump shall be bolted to steel angles in pump module, using grade 8 bolts.

Drive Line

Hollow-tube drivelines and universals shall be properly matched to the engine and transmission output torque ratings.

One (1)

Y__N__

1250 GPM FIRE PUMP SPECIFICATIONS

The centrifugal type fire pump shall be a Waterous model CSC10 midship mounted with a rated capacity of 1250 GPM. The pump shall meet NFPA 1901 requirements.

The pump shall be certified to meet the following deliveries:

- 1250 GPM @ 150 PSI
- 1250 GPM @ 165 PSI
- 875 GPM @ 200 PSI
- 625 GPM @ 250 PSI

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- One (1) **LEFT SIDE -- 6" UNGATED INTAKE** Y__N__
- One (1) 6" ungated suction intake shall be installed on the left side pump panel to supply the fire pump from an external water supply. The threads shall be 6" NST. The intake shall be provided with a removable screen.
- One (1) 6" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles. Y__N__
- One (1) **RIGHT SIDE -- 6" UNGATED INTAKE** Y__N__
- One (1) 6" ungated suction intake shall be installed on the right side pump panel to supply the fire pump from an external water supply. The intake shall be provided with a removable screen.
- One (1) 6" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles. Y__N__
- One (1) **FIRE PUMP MECHANICAL SHAFT SEAL** Y__N__
- The Waterous fire pump shall be equipped with self-adjusting, maintenance free, 'mechanical shaft seal' which is designed to be functional in the unlikely event of a seal failure.
- One (1) **IMPELLER HUBS** Y__N__
- The Waterous fire pump impeller hubs shall be standard bronze type.
- One (1) **FIRE PUMP SHIFT** Y__N__
- The pump shift shall be an air operated and shall incorporate an air cylinder with an electric actuating switch to shift from road to pump and back. The air shift control valve shall be mounted in the cab.
- The fire pump-shift system shall be equipped with a means to prevent unintentional movement of the control device from its set position. The system shall include a nameplate indicating the chassis transmission shift selector position to be used for pumping and located so that it can be easily read from the driver's position.
- The system shall include the applicable NFPA standard interlocks, pump shift and OK TO PUMP indicator lights in the cab and pump panel. The fire pump system shall be equipped with an interlock system shall be provided to ensure that the pump drive system components are properly engaged in the pumping mode of operation so that the pumping system can be safely operated from the pump operator's position.
- If applicable, the secondary braking device shall be automatically disengaged for pumping operations.
- One (1) **FIRE PUMP PRIMING SYSTEM** Y__N__
- A Waterous model number VPO electrically driven, positive displacement, rotary vane type 'oil less' priming pump shall be installed. The system shall be activated with a manual pull type control.

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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. The priming system shall comply to applicable sections of the NFPA standards.

One (1)

Y__N__

RELIEF VALVE

The fire pump system shall be equipped with a Waterous adjustable relief valve. The relief valve shall be positive and quick acting and have instantaneous "ON/OFF" control. The unit shall meet applicable sections of the NFPA standards for pressure control devices.

The control for adjusting the pressure shall be elliptical shaped for positive grip. An easily removable pilot valve strainer shall be provided and shall be accessible from the pump operator's panel. Two (2) indicator lights shall be furnished to show position of the relief valve - "OPEN" or "CLOSED".

One (1)

Y__N__

ENGINE THROTTLE

The apparatus shall be equipped with one (1) vernier remote throttle control. The operation of the remote throttle shall consist of seven full turns from idle to full RPM engine speed. The throttle shall have an emergency idle red center button to quickly return the engine to idle when depressed.

One (1)

Y__N__

ENGINE MONITOR

The apparatus shall be equipped with one (1) Class1 ENFO IV Engine Information Display and be installed on the pump panel. The ENFO IV shall provide engine RPM, system voltage display and alarm, engine oil pressure display and alarm, and engine temperature display and alarm. The ENFO IV is available in either English or Metric and uses the SAE J-1939 data bus for its information and does not require any additional sensors to be mounted.

One (1)

Y__N__

PUMP ANODES

One (1) pair of replaceable corrosion-protection anodes shall be provided, one (1) on the discharge and one (1) on the intake side of the pump.

One (1)

Y__N__

PUMP PLUMBING SYSTEM

The fire pump plumbing system shall be of rigid or flexible piping with stainless steel fittings. Victaulic couplings shall be installed to permit flexing of the plumbing system and allow for quick removal of piping or valves for service. Flexible hose couplings shall be threaded stainless steel or Victaulic connections.

The fire pump and plumbing shall be hydrostatically tested in compliance to applicable sections of NFPA standards, with test results submit with the delivery documentation.

One (1)

Y__N__

FIRE PUMP MASTER DRAIN

The fire pump plumbing system and fire pump shall be piped to a single pump panel mounted push-pull type master pump drain assembly.

ADDITIONAL LOW POINT DRAINS

The plumbing system shall be equipped with additional low point manually operated drain valves to allow total draining of the fire pump plumbing system. These valves shall be accessible from the side of the vehicle and labeled.

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One (1) **FIRE PUMP & PLUMBING SYSTEM PAINTING** Y__N__

The fire pump and plumbing system shall be painted by the fire apparatus manufacturer. The fire pump and the plumbing shall be painted metallic silver.

One (1) **HOSE THREADS** Y__N__

The hose threads shall be National Standard Thread (NST) on all base threads on the apparatus intakes and discharges.

One (1) **WATER TANK TO PUMP LINE** Y__N__

One (1) 3-1/2" water tank to fire pump line shall be provided with a full flow quarter turn ball Waterous valve, 3" piping, and with flex hose and stainless steel hose clamps. The tank to pump line shall be equipped with a check valve to prevent pressurization of the water tank.

The line shall be flow tested during the fire pump testing and shall meet applicable requirements of NFPA standards.

One (1) Y__N__

The specified intake valve shall be equipped with one (1) manually operated pull rod, with quarter turn locking feature. The handle shall be equipped with color coded engraved type name plate.

One (1) **FIRE PUMP TO WATER TANK FILL LINE** Y__N__

One (1) 1-1/2" fire pump to water tank refill and pump bypass cooler line shall be provided. The valve shall be a full flow quarter turn ball valve with 1-1/2" piping and flex hose to tank. The valve control handle shall have a nameplate located near the valve control.

One (1) Y__N__

The specified valve shall be an Akron 8800 Series one and one half-inch (1-1/2") valve with a stainless ball.

One (1) Y__N__

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1) Y__N__

FIRE PUMP SPLIT SHAFT DRIVESHAFTS AND INSTALLATION

The mid-ship split shaft fire pump shall be installed and shall include installation of the fire pump, modification and/or fabrication of new drivelines and all pump-mounting brackets. The drive shaft(s) shall be spin balanced prior to final installation.

One (1) Y__N__

UNDERWRITERS LABORATORIES FIRE PUMP TEST

The pump shall undergo an Underwriters Laboratories Incorporated test per applicable sections of NFPA standards, prior to delivery of the completed apparatus.

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One (1) The UL acceptance certificate shall be furnished with the apparatus on delivery. Y__N__

FIRE PUMP TEST LABEL

A fire pump performance and rating label shall be installed on the fire apparatus pump panel. The label shall denote levels of pump performance and testing completed at factory. These shall include GPM at net pump pressure, RPM at such level, and other pertinent data as required by applicable NFPA standards. In addition, the pressure control device, tank to pump flow tests, and other required testing shall be completed.

In addition, the entire pump, suction and discharge passages shall be hydrostatically tested to a pressure as required by applicable NFPA standards. The pump shall be fully tested at the pump manufacturer's factory to the performance specifications as outlined by applicable NFPA standards. Pump shall be free from objectionable pulsation and vibration.

If applicable, the fire 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% or rated capacity at 165 pounds net pressure.

One (1) Y__N__

INTAKE RELIEF/DUMP VALVE

One (1) Elkhart Model 40, 2-1/2" intake relief/dump 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 side the apparatus, away from the pump operator, and shall terminate with a 2-1/2" NST male thread. The outlet shall be marked with an engraved tag "Intake pressure relief outlet - Do Not Cap".

One (1) Y__N__

FIRE PUMP COOLING

The fire pump shall be equipped with 3/8" cooling line from the pump to the water tank. This re-circulation line shall be controlled by a pump panel control valve with nameplate label noting it as the "fire pump bypass cooler". There shall be a check valve installed in the pump cooler line to prevent tank water from back flowing into the pump when it is not in use.

One (1) Y__N__

CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM

The apparatus shall be equipped with a heat exchanger for supplementary chassis engine cooling during fire pump operations. A manually opened valve, mounted at the operator's panel, shall direct water from the fire pump to the heat exchanger that is mounted in the engine radiator cooling hose. The system shall provide cooling water from the fire pump to circulate around the engine radiator coolant without mixing or coming in direct contact with the engine coolant. The unit shall be installed by the chassis manufacturer and connected to the plumbing system by the fire apparatus manufacturer.

A nameplate label shall be installed on the pump panel noting "engine cooling system" with "on-off" opening directions noted.

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One (1)

LEFT SIDE -- 2-1/2" GATED INTAKE

Y__N__

One (1) 2-1/2" gated suction intake shall be installed on left side pump panel to supply the fire pump from an external water supply. The control valve shall be a quarter turn ball valve and shall have 2-1/2" NST female thread of chrome plated brass.

The intake shall be equipped with a 3/4" drain and bleeder valve. A nameplate label and removable screen shall be installed.

One (1)

Y__N__

One (1) 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

One (1)

Y__N__

The specified valve shall be an Akron 8800 Series two and one half-inch (2-1/2") valve with a stainless ball.

One (1)

Y__N__

The specified intake valve shall be equipped with one (1) manually operated swing type manual control located adjacent the intake. The valve shall be equipped with a color coded engraved type name plate.

One (1)

Y__N__

RIGHT SIDE -- 2-1/2" GATED INTAKE

One (1) 2-1/2" gated suction intake shall be installed on right side pump panel to supply the fire pump from an external water supply. The control valve shall be a quarter turn ball valve and shall have 2-1/2" NST female thread of chrome plated brass.

The intake shall be equipped with a 3/4" drain and bleeder valve. A nameplate and removable screen shall be installed.

One (1)

Y__N__

One (1) 2-1/2" chrome plated plug shall be provided. The threads shall be NST and the plug shall be equipped rocker lugs and chain or cable securement.

One (1)

Y__N__

The specified valve shall be an Akron 8800 Series two and one half-inch (2-1/2") valve with a stainless ball.

One (1)

Y__N__

The specified intake valve shall be equipped with one (1) manually operated swing type manual control located adjacent the intake. The valve shall be equipped with a color coded engraved type name plate.

One (1)

Y__N__

Crosslay hose bed(s) shall be mounted over the upper pump panel or gauge panel in the upper portion of the pump enclosure. The crosslay hose bed shall be approximately 12" from the top of the pump enclosure.

One (1)

Y__N__

TWO (2) 1-1/2" CROSSLAY DISCHARGES

Two (2) pre-connect 1-3/4" hose crosslays shall be installed over pump enclosure, with quarter turn 2" diameter ball valves. The outlets shall be a 2" NPT female swivel x 1-1/2" male NST hose threads.

The crosslay hose beds shall have smooth aluminum sides. The hose bed decking shall be constructed with slots integrated into the hose bed floor.

Each hose bed shall provide for a minimum capacity of 200 feet of 1-3/4" diameter double jacket hose with nozzle, for hose provided by the fire department.

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- Two (2) A 3/4" quarter turn bleeder valves shall be installed on gated intakes and discharges larger than 1-1/2" in size. Y__N__
- Two (2) The specified valve shall be an Akron 8800 Series two-inch (2") valve with a stainless ball. Y__N__
- Two (2) For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation. Y__N__
- Two (2) The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label. Y__N__
- Two (2) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters. Y__N__
- One (1) **CROSSLAY HINGED COVER WITH END FLAPS** Y__N__
- The crosslay hose bed shall be equipped with a single aluminum diamond plate hinged cover with hypalon end flaps with VELCRO fasteners. The cover shall have rubber bumpers, latching devices, and lift up handle on each end of the cover.
- One (1) The color of the end flaps shall be red. Y__N__
- One (1) **ROLLERS FOR CROSSLAY HOSE BED** Y__N__
- The crosslay hose bed shall be equipped stainless steel "U" shaped roller system, one on each end of the hose bed.
- Two (2) **LEFT SIDE PUMP PANEL -- 2-1/2" DISCHARGE** Y__N__
- Two (2) 2-1/2" discharges shall be installed on the left side pump panel area and shall be controlled by a quarter turn ball valve. The discharges shall have 2-1/2" NST male hose threads and a chrome plated elbow with rocker lugs with 2-1/2" NST swivel female x 2-1/2" NST male hose threads. A color coded nameplate label shall be provided adjacent the control handle. Y__N__
- Two (2) A 3/4" quarter turn bleeder valve shall be installed on gated intakes and discharges larger than 1-1/2" in size. Y__N__
- Two (2) Two (2) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads. Y__N__
- Two (2) Two (2) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided. Y__N__
- Two (2) The specified valve shall be an Akron 8800 Series two and one half-inch (2-1/2") valve with a stainless ball. Y__N__
- Two (2) For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc Y__N__

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with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

Two (2)

Y__N__

Two (2) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters.

Two (2)

Y__N__

RIGHT SIDE PUMP PANEL -- 2-1/2" DISCHARGE

Two (2) 2-1/2" discharges shall be installed on the right side pump panel area and shall be controlled by a quarter turn ball valve. The discharge shall have 2-1/2" NST male hose threads and a chrome plated elbow with rocker lugs with 2-1/2" NST swivel female x 2-1/2" NST male hose threads. A color coded nameplate label shall be provided adjacent the control handle.

Two (2)

Y__N__

A 3/4" quarter turn bleeder valves shall be installed on gated intakes and discharges larger than 1-1/2" in size.

Two (2)

Y__N__

Two (2) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads.

Two (2)

Y__N__

Two (2) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided.

Two (2)

Y__N__

The specified valve shall be an Akron 8800 Series two and one half-inch (2-1/2") valve with a stainless ball.

Two (2)

Y__N__

For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

Two (2)

Y__N__

Two (2) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters.

One (1)

Y__N__

REAR LEFT SIDE -- 2-1/2" DISCHARGE

One (1) 2-1/2" discharge shall be installed on the left side rear panel of the apparatus body and shall be controlled by a quarter turn ball valve on the pump panel. The discharge shall have 2-1/2" NPT x 2-1/2" NST male hose threads adapter with 30 degree slant. The outlet shall be equipped with an engraved nameplate label shall be installed adjacent the valve control handle.

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- One (1) A 3/4" quarter turn bleeder valves shall be installed on gated intakes and discharges larger than 1-1/2" in size. Y__N__
- One (1) One (1) chrome plated elbow with rocker lugs shall be provided with 2-1/2" NST swivel female x 2-1/2" NST male hose threads. Y__N__
- One (1) One (1) 2-1/2" NST rocker lug chrome plated vented cap and cable or chain securement shall be provided. Y__N__
- One (1) The specified valve shall be an Akron 8800 Series two and one half-inch (2-1/2") valve with a stainless ball. Y__N__
- One (1) For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation. Y__N__
- One (1) The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label. Y__N__
- One (1) One (1) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters. Y__N__
- One (1) **ELECTRIC REWIND HOSE REEL** Y__N__
- One (1) One (1) Hannay painted steel hose reel with leak proof ball bearing swing joint, adjustable friction brake, electric and crank rewind shall be installed.. The reel shall be plumbed with wire reinforced, high-pressure hose coupled. The reel shall be designed to hold 125% of the specified hose capacity. The reel shall be bolted to a mounting system for easy service or removal. Y__N__
- One (1) The hose reel is to be mounted in the left side area above the pump. Y__N__
- One (1) **HOSE REEL REWIND SWITCH** Y__N__
- One (1) A push button hose reel rewind switch shall be installed to control the electric rewind hose reel. The exact location shall be determined at construction. Y__N__
- One (1) **1" HOSE REEL DISCHARGE** Y__N__
- One (1) One (1) 1" discharge shall be provided and piped from the fire pump to the hose reel with flexible high pressure hose. The quarter turn ball valve shall be controlled on pump panel. A color coded engraved nameplate label shall be provided near the valve control handle. Y__N__
- One (1) A 3/4" quarter turn bleeder valves shall be installed on gated intakes and discharges larger than 1-1/2" in size. Y__N__
- One (1) **HOSE REEL DISCHARGE** Y__N__
- One (1) The specified hose reel shall be piped to the normal pressure side of the fire pump.

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- One (1) One (1) Akron 8800 Series one-inch (1") valve with a stainless ball shall be supplied. Y__N__
- One (1) For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation. Y__N__
- One (1) The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label. Y__N__
- One (1) One (1) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters. Y__N__
- One (1) **HOSE FOR REEL** Y__N__
- One (1) Two (2) 100' foot lengths of 1" water hose (200') with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel. Y__N__
- One (1) **HOSE ROLLER**
- One (1) One (1) stainless steel roller assembly shall be provided on the left side hose reel. Y__N__
- One (1) **ELECTRIC REWIND HOSE REEL**
- One (1) One (1) Hannay painted steel hose reel with leak proof ball bearing swing joint, adjustable friction brake, electric and crank rewind shall be installed.. The reel shall be plumbed with wire reinforced, high-pressure hose coupled. The reel shall be designed to hold 125% of the specified hose capacity. The reel shall be bolted to a mounting system for easy service or removal.
- One (1) The hose reel is to be mounted in the right side area above the pump. Y__N__
- One (1) **HOSE REEL REWIND SWITCH**
- One (1) A push button hose reel rewind switch shall be installed to control the electric rewind hose reel. The exact location shall be determined at construction. Y__N__
- One (1) **1" HOSE REEL DISCHARGE**
- One (1) One (1) 1" discharge shall be provided and piped from the fire pump to the hose reel with flexible high pressure hose. The quarter turn ball valve shall be controlled on pump panel. A color coded engraved nameplate label shall be provided near the valve control handle. Y__N__
- One (1) A 3/4" quarter turn bleeder valves shall be installed on gated intakes and discharges larger than 1-1/2" in size. Y__N__
- One (1) **HOSE REEL DISCHARGE**
- One (1) The specified hose reel shall be piped to the normal pressure side of the fire pump. Y__N__
- One (1) One (1) Akron 8800 Series one-inch (1") valve with a stainless ball shall be supplied. Y__N__

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One (1) Y__N__
For valve actuation, the specified discharge shall be equipped with a side mount valve control. The ergonomically designed 1/4 turn push-pull T-handle shall be chrome plated zinc with recessed labels for color coding and signage. The gear-control rod, double laminated locking clips, and rod housing shall be stainless steel and provide true positive lock that will eliminate valve drift. Bronze and Teflon impregnated stainless steel bushings in both ends of rod housing shall eliminate rod deflection, never need lubrication and ensure consistent long-term operation.

One (1) Y__N__
The control assembly shall include a decorative chrome-plated zinc panel mounted bezel with recessed color-coded label.

One (1) Y__N__
One (1) 2-1/2" pressure gauge rated at 0-400 PSI shall be provided. The gauge shall include a color coded label and be installed on the pump instrument panel. The face of the gauge shall have a white dial with black letters.

One (1) Y__N__
HOSE FOR REEL

One (1) Y__N__
Two (2) 100' foot lengths of 1" water hose (200') with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel.

One (1) Y__N__
HOSE ROLLER

One (1) Y__N__
One (1) stainless steel roller assembly shall be provided on the right side hose reel.

One (1) Y__N__
CENTER HOSE ROLLER

Two (2) Y__N__
One (1) stainless steel roller assembly shall be provided between the hose reels.

Two (2) Y__N__
HOSE REEL PAINTING

One (1) Y__N__
The hose reel(s) shall be painted silver grey.

One (1) Y__N__
FOAM PRO FOAM SYSTEM

One (1) FoamPro part number S106-1600--02 electronic foam system shall be provided. The system shall be designed for use with Class A foam concentrate. The foam proportioning operation shall be designed for direct measurement of water flows and shall remain consistent within the specified flows and pressures. The system shall be capable of accurately delivering foam solution as required by applicable sections of the NFPA standards.

The system shall be equipped with a control module suitable for installation on the pump panel. There shall be a microprocessor incorporated within the motor driver that shall receive input from the system's flow meter, while also monitoring the foam concentrate pump output. The microprocessor shall compare the values to ensure that the desired amount of foam concentrate is injected onto the discharge side of the fire pump. A "foam capable" paddlewheel-type flow meter shall be installed in the discharge side of the piping system.

The control module shall enable the pump operator to:

1. Activate the foam proportioning system
2. Select the proportioning rates from 0.1% to 1.0%
3. See a "low concentrate" warning light flash when the foam tank level becomes low and in two (2) minutes, if the foam concentrate has not been added to the tank, the foam concentrate pump shall be capable of shutting down.

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

A full flow check valve shall be provided in the discharge piping to prevent foam contamination of the fire pump and water tank. A 5 PSI (.35 BAR) opening pressure check valve shall be provided in concentrate line.

Components of the complete proportioning system as described above shall include:

1. Operator control module
2. Paddlewheel flow meter
3. Pump and electric motor/motor driver
4. Wiring harnesses
5. Low level tank switch
6. Foam tank
7. Foam injection check valve
8. Main waterway check valve
9. Flow meter and tee with 2" male NPT threads.

The foam system shall be installed and calibrated to manufacturer's requirements. In addition the system shall be tested and certified by the apparatus manufacturer to meet applicable NFPA standards.

The foam system design shall be tested and pass environmental testing in accordance to SAE standards. The system shall be third party tested to certify compliance with RFI/EMI emissions per MIL-STD-416E.

An installation and operation manual shall be provided for the unit. The system shall have a one (1) year limited warranty by the foam system manufacturer.

CONTROL CONNECTION CABLE -- FOAM SYSTEM

The FoamPro 1600 Series foam system shall be provided with a twelve (12) foot control cable from the controller to the foam pump assembly.

PUMP PANEL CONTROL -- FOAM SYSTEM

The FoamPro 1600 Series foam system shall be provided with a standard pump panel mounted FoamPro control head.

FLOWMETER AND TEE -- FOAM SYSTEM

A FoamPro brass flow meter shall be provided. The flow meter shall be installed in the "foam capable" discharge line. The flow meter shall have maximum accuracy between the flow range of 10 GPM and 320 GPM and be capable of operation between 3 GPM to 380 GPM. The tee shall have 1-1/2" NPT and 2" Victaulic inlet and outlets connections.

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LOW-LEVEL TANK SENSOR/FOAM TANK

A FoamPro low-level foam tank sensor shall be provided. The sensor shall be capable of mounting side of foam tank that shall interface with the microprocessor. The unit shall have a 1/8" NPT thread size.

MAIN WATERWAY CHECK VALVE -- FOAM SYSTEM

A FoamPro full-flow check valve shall be provided. The valve shall prevent foam contamination of the fire pump and water tank or water contamination of the foam tank. The unit shall have a nickel-electro plated body with stainless steel components. The valve shall have 2" NPT threads with an injection and drain port size of 1/2" NPT.

FOAM SYSTEM -- INJECTOR FITTING

A Foam Pro injector fitting shall be provided with the foam system.

INSTRUCTION AND RATING LABEL -- FOAM SYSTEM

A FoamPro part number 6032-0018 instruction and system rating label shall be provided. The label shall display information for a FoamPro 1600 Series foam system and shall meet applicable sections of the NFPA standards.

SCHEMATIC LABEL -- FOAM SYSTEM

A FoamPro part number 6032-0015 foam system schematic label shall be provided shall be installed on the pump panel near foam controls. The label shall be a diagram of a single tank foam system layout and shall meet applicable sections of the NFPA standards.

One (1)

Y__N__

1" FOAM TANK CONTROL -- CLASS A

One (1) Class A foam tank shall be plumbed with 1" valve and corrosion resistant hose from the foam tank to the foam inlet of the foam system. The manually opened valve shall be provided behind the pump panel with a label.

One (1)

Y__N__

INTEGRAL CLASS A FOAM TANK -- 30 GALLON

One (1) thirty (30) gallon Class A foam tank shall be installed within the water tank. The non-corrosive foam tank shall meet applicable sections of NFPA standards. The foam concentrate tank shall be provided with sufficient wash partitions so that the maximum dimension perpendicular to the plane of any partition shall not exceed 36 inches. The swash partition(s) shall extend from wall to wall and cover at least 75 percent of the area of the plane of the partition.

The foam concentrate tank shall be provided with a fill tower or expansion compartment having a minimum area of 12 square inches and having a volume of not less than 2 percent of the total tank volume. The fill tower opening shall be protected by a completely sealed air-tight cover. The cover shall be attached to the fill tower by mechanical means. The fill opening shall be designed to incorporate a 1/4 inch removable screen and shall be located so that foam concentrate from a five (5) gallon container can be dumped directly to the bottom of the tank to minimize aeration without the use of funnels or other special devices.

The foam tank fill tower shall be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam

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concentrate from the tank. The pressure/vacuum vent shall not allow atmospheric air to enter the foam tank except during operation or to compensate for thermal fluctuations. The vent shall be protected to prevent foam concentrate from escaping or directly contacting the vent at any time. The vent shall be of sufficient size to prevent tank damage during filling or foam withdrawal.

A color coded label or visible permanent marking that reads "FOAM TANK FILL" shall be placed at or near any foam concentrate tank fills opening. A label shall be placed at or near any foam concentrate tank fill opening that specifies the type of foam concentrate the system is designed to use. Any restrictions on the types of foam concentrate that can be used with the system shall also be stated, and a warning message that reads "WARNING: DO NOT MIX BRANDS AND TYPES OF FOAM."

The foam concentrate tank outlet connection shall be designed and located to prevent aeration of the foam concentrate and shall allow withdrawal of 80 percent of the foam concentrate tank storage capacity under all operating conditions with the vehicle level.

One (1)

Y__N__

The foam tank(s) shall be fabricated by United Plastic Fabricating.

One (1)

Y__N__

FOAM TANK DRAIN -- UNDER TANK

The foam tank shall have one (1) 1" gate valve drain provision installed.

One (1)

Y__N__

FOAM TANK GAUGE

The apparatus shall be equipped with one (1) Class1 "Intelli-Tank" foam tank level gauge and shall be installed on the pump panel. The tank level gauge shall indicate the liquid level on an easy to read LED display and show increments of 1/8 of a tank.

Each tank level gauge system shall include:

- 1) A pressure transducer mounted on the outside of the tank in an easily accessible area. Sealed foam tanks will require zero pressure vacuum vents.
- 2) Super bright LED 4-light display with a visual indication at nine accurate levels.
- 3) Weather resistant connectors to connect to the digital display, to the pressure transducer and to the apparatus power.

One (1)

Y__N__

FOAM SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

The proportioning system shall be capable of proportioning foam concentrate in accordance with the foam concentrate manufacturer's recommendations for the type of foam concentrate used in the system over the system's design range of flow and pressures. The foam proportioning system water flow characteristics and the range of proportioning ratio shall be specified as noted herein. The latest foam system shall be in compliance with applicable NFPA standards as it relates to this specified system

Plumbing and Strainer

The foam concentrate supply line shall be non-collapsible. A means shall be provided to prevent water back flow into the foam proportioning system and the foam concentrate storage tank.

A strainer or filter shall be provided on the foam concentrate supply side of the foam proportioner to prevent any debris that might affect the operation of the foam proportioning system from entering the system. The strainer assembly shall consist of a removable straining element, housing, and retainer. The strainer assembly shall allow full flow capacity of the foam supply line.

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Flushing

A foam concentrate system flush line shall be provided as required by the foam system manufacturer. A means shall be provided in the flush line to prevent water backflow into the foam concentrate tank or water tank during the flushing operation.

Foam System Controls

The foam proportioning system operating controls shall be located at or near the pump operator's position and shall be clearly identified. Foam proportioning system shall be provided with accessible controls to completely flush the system with water according to the manufacturer's instructions.

Labels and Instructions

An instruction plate shall be provided for the foam proportioning system that include, at a minimum, piping schematic of the system and basic operating instructions. Labels that are marked clearly with the identification and function shall be provided for each control, gauge, and indicator related to the foam proportioning system.

A label shall be provided on the pump operator's panel that identifies the type of foam concentrate that the foam proportioning system is designed to use. It shall also state the minimum/maximum foam proportioning rate at the minimum/maximum foam proportioning rated system flow and pressure.

Two (2) copies of an operations and maintenance manual shall be provided. They shall include a complete diagram of the system together with operating instructions and details outlining all recommended maintenance procedures.

Foam System Testing

The accuracy of the foam proportioning system shall be certified by the foam equipment manufacturer and also tested by the installer prior to delivery of the apparatus in compliance to NFPA standards. The test results shall be submitted as part of delivery manual.

FOAM DISCHARGE LOCATIONS

The foam system shall be plumbed to both crosslays and booster reels.

One (1)

Y___N___

SIDE MOUNT PUMP ENCLOSURE

The side mount pump enclosure shall be removable and supported from the chassis frame rails. This enclosure will allow independent flexing of the pump enclosure from the body and allow for quick removal. The support structure shall be constructed of extruded aluminum tubing and angle.

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. The fire pump, valves and controls shall be accessible for service and maintenance as required by applicable sections of NFPA standards.

The "master" 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. The individual gauges shall be mounted inline with the control handle or adjacent to the control handle. Panel is to

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include a stainless steel piano hinge, 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.

The following controls and equipment shall be provided on the pump panel or within the pump enclosure:

- 1) Electric primer.
- 2) Pump and plumbing area service lights.
- 3) Pressure control device and throttle control.
- 4) Fire pump and engine instruments.
- 5) Pump intakes and discharge controls.
- 6) Master intake and discharge gauges.
- 7) Tank fill control.
- 8) Tank suction control.
- 9) Water tank level gauge.
- 10) Pump panel lights.

Crosslay Installation

The area atop the pump enclosure shall be notched for the installation of a crosslay hose bed. The hose bed shall have smooth sides and a perforated floor to allow for drainage.. Provisions shall be provided to secure hose and equipment per requirements of applicable NFPA standards.

One (1)

Y__N__

OPEN DUNNAGE COMPARTMENT -- OVER PUMP ENCLOSURE

One (1) open compartment shall be located on the top of the pump module. The compartment will be constructed as large as space permits with removable slip resistance floor material or decking in the base of the compartment.

One (1)

Y__N__

LEFT SIDE RUNNING BOARD -- SIDE MOUNT PANEL

The left side mount pump panel shall be equipped with side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.

The running board shall be constructed of aluminum tread plate, bolted in place with stainless steel fasteners. The step surfaces shall be in compliance to applicable sections of NFPA requirements.

One (1)

Y__N__

RIGHT SIDE RUNNING BOARD -- SIDE MOUNT PANEL

The right side mount pump panel shall be equipped with side running board. The running board will extend along the width of the pump enclosure from the forward end of the body module to behind the chassis cab.

The running board shall be constructed of aluminum tread plate, bolted in place with stainless steel fasteners. The step surfaces shall be in compliance to applicable sections of NFPA requirements.

One (1)

Y__N__

PUMP ENCLOSURE ACCESS DOOR -- RIGHT SIDE UPPER

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A pump panel access door shall be provided on the upper right side of the side mount pump enclosure. The access door shall be approximately 18" high and as wide as possible. The door shall be constructed of black thermoplastic covered aluminum with push button type latches.

One (1)

Y__N__

PUMP PANEL -- SIDE MOUNT

The pump operator's panel, along with the lower left hand and right hand pump panels shall be constructed of black thermoplastic coating aluminum material and be fastened to the pump enclosure with 1/4" stainless steel bolts.

The instrument area shall have a stainless steel continuous hinge that shall swing for easy access to gauges.

One (1)

Y__N__

LEFT SIDE PUMP PANEL -- BOLTED

A pump panel shall be installed on the on the left hand side of the pump enclosure. The panel shall be fastened to the pump enclosure with 1/4" stainless steel bolts.

One (1)

Y__N__

RIGHT SIDE PUMP PANEL -- BOLTED

A pump panel shall be installed on the on the right hand side of the pump enclosure. The panel shall be fastened to the pump enclosure with 1/4" stainless steel bolts.

One (1)

Y__N__

PUMP PANEL TRIM -- STAINLESS STEEL

Stainless steel trim plates shall be provided for each of the suction and discharge outlets on the apparatus.

One (1)

Y__N__

PUMP ENCLOSURE HEAT PAN

A removable casing constructed of galvanized steel, completely enclosing the underside of the pump compartment and heated by the engine exhaust shall be provided. The heat pan assembly shall include individual panels that can be easily removed from there mounting locations. The two outer slide-out panels shall be bolted in place.

One (1)

Y__N__

LABELS

Safety, information, data, and instruction labels for apparatus shall be provided and installed at the operator's instrument panel.

The labels shall include rated capacities, pressure ratings, and engine speeds as determined by the certification tests. The no-load governed speed of the engine, as stated by the engine manufacturer, shall also be included.

The labels shall be provided with all information and be attached to the apparatus prior to delivery.

One (1)

Y__N__

COLOR CODED PUMP PANEL LABELLING AND NAMEPLATES

Discharge and intake valve controls shall be color coded in compliance to guidelines of applicable sections of NFPA standards.

Permanent type nameplates and instruction panels shall be installed on the pump panel for safe operation of the pumping equipment and controls.

One (1)

Y__N__

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MIDSHIP PUMP PANEL LIGHTS -- LEFT SIDE

Three (3) Weldon #2025 or equal lights with clear lenses shall be installed under an instrument panel light hood on the left side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

One (1)

Y__N__

MIDSHIP PUMP PANEL LIGHTS -- RIGHT SIDE

Two (2) Weldon #2025 or equal lights with clear lenses shall be installed under an instrument panel light hood on the right side pump panel. The lights shall be controlled by a switch located on the operator's instrument panel.

One (1)

Y__N__

PUMP PANEL LIGHTS

One (1) pump panel light shall be illuminated at the time the fire pump is engaged into operation. The remaining lights shall be controlled by a switch located on the operator's instrument panel.

One (1)

Y__N__

MASTER DISCHARGE AND INTAKE GAUGES

Two (2) 4-1/2" diameter discharge pressure and intake gauges (30-0-600 PSI) with engraved, color coded metal labels, shall be provided on the pump instrument panel.

One (1)

Y__N__

TEST TAPS

Test taps for pump intake and pump pressure shall be provided on the pump instrument panel and be properly labeled.

One (1)

Y__N__

WATER TANK GAUGE

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

Each tank level gauge system shall include:

- 1) A pressure transducer mounted on the outside of the tank in an easily accessible area. Sealed foam tanks will require zero pressure vacuum vents.
- 2) Super bright LED 4-light display with a visual indication at nine accurate levels.
- 3) Weather resistant connectors to connect to the digital display, to the pressure transducer and to the apparatus power.

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One (1) **WATER TANK - 1250 GALLON** Y__N__

The apparatus shall be equipped with a one thousand two-hundred fifty (1250) gallon polypropylene water tank. The tank shall be equipped with a four-inch (4") overflow pipe.

One (1) **WATER TANK** Y__N__

The apparatus shall be equipped with a polypropylene water "T" shaped tank.

One (1) **WATER TANK FILL TOWER** Y__N__

A fill tower measuring approximately 10" x 10" square shall be provided on the water tank up to and including 1500 gallons total capacity.

One (1) Y__N__

The apparatus shall be equipped with a polypropylene water tank. The tank body and end bulkheads shall be constructed of .5" thick, polypropylene, nitrogen-welded and tested inside and out. Tank construction shall conform to applicable NFPA standards. The tank shall carry a lifetime warranty.

The transverse and longitudinal .375" thick swash partitions shall be interlocked and welded to each other as well as to the walls of the tank. The partitions shall be designed and equipped with vent holes to permit air and liquid movement between compartments.

The .5" thick cover shall be recessed .375" from the top of the side walls. Hold down dowels shall extend through and be welded to both the covers and the transverse partitions, providing rigidity during fast fill operations. Drilled and tapped holes for lifting eyes shall be provided in the top area of the booster tank.

The water fill tower shall be provided at front of the tank. The 0.5" thick polypropylene fill and overflow tower shall be equipped with a hinged lid and a removable polypropylene screen. The overflow tube shall be installed in fill tower and piped with schedule 40 PVC pipe through the tank.

The water tank sump shall be located in the forward area of the tank. There will be a schedule 40 polypropylene tank suction pipe from the front of the tank to the tank sump. The tank drain and clean out shall be located in the bottom of the tank sump.

The pump to tank refill connection shall be a sized to mate with tank fill discharge line. A deflector shield inside the tank will also be provided.

The water tank manufacturer shall certify the capacity of the water tank prior to delivery of the apparatus. This capacity shall be recorded on the manufacturer's record of construction and the certification shall be provided to the purchaser when the apparatus is delivered.

One (1) Y__N__

The apparatus shall be equipped with a water tank manufactured by United Plastic Fabricating.

One (1) Y__N__

WATER TANK WARRANTY

UNITED PLASTIC FABRICATION INC. Warrants each UPF POLY-TANK IIE Booster/Foam tank to be free from manufacturing defects in material and workmanship for the service life of the vehicle (vehicle must be actively used in fire suppression). The UPF POLY-TANK IIE must be installed in accordance with the United Plastic Fabricating installation manual. Every UPF POLY-TANK IIE is thoroughly inspected and tested for leaks before leaving our facility. Should any problems develop with your UPF POLY-TANK IIE booster/foam tank and will not

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meet performance criteria during the service life of the vehicle, notify UPF in writing or call our TOLL FREE SERVICE HOT LINE 1-800-USA-POLY. Provide UPF with the serial number and a description of the problem. If the tank problem would render the truck out of service, UPF will dispatch a service technician WITHIN 48 HOURS (2 DAYS) to repair the tank. (This time period is for North America only). If the vehicle can remain in service, UPF will dispatch a service technician within a mutually agreed upon time period.

We will repair, or at our option, replace the tank with a new UPF POLY-Tank IIE. UPF will cover customary and reasonable costs to remove and install the UPF POLY-TANK IIE. This warranty will not cover tanks that have been improperly installed, misused or abused, and the serial number must not have, been altered, defaced or removed. UPF will not cover any unauthorized third party repairs or alterations. Any of these actions may void the warranty.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF. THERE IS NO EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. ADDITIONALLY, THIS WARRANTY IS IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF UNITED PLASTIC FABRICATION, INC.

This warranty contains the entire warranty. It is the sole warranty and price agreements or representation, whether oral or written, are either merged herein or expressly cancelled. UNITED PLASTIC FABRICATION, INC. Neither assumes, nor authorizes any person supposing to act on its behalf, to change, nor assume for it, any warranty or liability concerning its product.

IN NO EVENT WILL UNITED PLASTIC FABRICATION, INC BE LIABLE FOR AN AMOUNT IN EXCESS OF THE PRESENT RETAIL, PURCHASE PRICE PLUS INSTALLATION AND REMOVAL COST OF THE BOOSTER TANK, FOR ANY LOSS OR DAMAGE, WHETHER DIRECT OR INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHERWISE ARISING OUT OF FAILURE OF ITS PRODUCT.

This warranty gives you specific legal rights, and you may have other rights, which vary from state to state. Some states do not allow exclusion or limitation of incidental or consequential damage, so the above limitation or exclusion may not apply to you. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.

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APPARATUS BODY SPECIFICATIONS

One (1) Y__N__

ALUMINUM HOSEBED GRATING SINGLE AXLE

The hose bed compartment deck shall be constructed entirely from maintenance-free, extruded aluminum slats. The slats shall have an anodized, radiused ribbed top surface. The slats shall be of widths approximately 3/4" high x 6" wide and shall be welded into a one-piece grid system to prevent the accumulation of water and allow ventilation to assist in drying hose.

One (1) Y__N__

HOSE BED STORAGE CAPACITY

The hose bed shall be designed to have a storage capacity for a minimum of 55 cubic feet of fire department supplied fire hose.

One (1) Y__N__

ALUMINUM HOSEBED DIVIDER

One (1) adjustable hose bed divider constructed of .250" aluminum shall be installed on the apparatus.

One (1) Y__N__

ALUMINUM HOSEBED COVER

The hose bed shall be equipped with a reinforced hinged .125" aluminum diamond plate cover. The covers shall be of the sloped design for proper water runoff. The walking surface on the cover shall be a NFPA #1901 compliant surface. Positive hold-open devices shall be provided to hold the door in the open position.

The cover, approximately 49" to 74" wide with a center opening, shall be installed the full length of the hose bed, and have a cutout for the booster tank fill tower.

One (1) Y__N__

MAIN HOSEBED DIVIDER

One (1) stationary hose bed divider shall be provided in the main hose bed.

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

Divider shall be bolted in place, front and rear, to allow for ease of removal or relocation.

Six (6) Y__N__

HOSEBED LIGHTS

Two (2) lights shall be recessed into the underside of the hinged aluminum hose bed covers to provide illumination for repacking of fire hose. The 12 volt lights shall be automatically controlled by a switch which activates upon opening of the door.

One (1) Y__N__

REAR VINYL FLAPS FOR ALUMINUM COVER

There shall be a vinyl flaps attached to each aluminum hose bed cover. The vinyl flaps shall cover the area on the rear of the hose bed from top to bottom. The flaps shall be independent of each other but attachable with Velcro in the center. The bottom edge of the flap shall be secured utilizing a hook and loop fastening system.

The color of the hose bed cover end flaps shall be red.

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One (1)

Y__N__

1/8" ALUMINUM BODY

The body shall be fabricated of aluminum extrusions, smooth aluminum sheet and aluminum treadplate.

The aluminum extrusion alloy shall be 6061 with a temper rating of T6, and have a tensile strength of 45,000 PSI and yield strength of 40,000 pounds. The aluminum extrusions shall 3" x 3" aluminum tubing, 1-3/4" x 3" aluminum tubing and 3" x 3" aluminum angle and specially designed extrusions, up to .250" wall thickness where applicable.

The smooth aluminum sheet material alloy shall be 5052 with a temper rating of H32, and have a tensile strength of 33,000 PSI and yield strength of 28,000 pounds.

The aluminum treadplate alloy shall be 3003 with a temper rating of H22, and have a tensile strength of 30,000 PSI and yield strength of 28,000 pounds.

The extrusions shall be designed as structural-framing members with the smooth aluminum and treadplate fabricated to form compartments, hose beds, and floors. All aluminum material shall be welded together using the latest mig spray pulse arc welding system.

Compartments to be sweep out design and to be water and dust proof. All compartments shall be made to the maximum practical dimensions to provide maximum storage capacity. To ensure maximum storage space, the apparatus shall be constructed without any void spaces between the body and the compartment walls. Double wall construction does not meet this requirement.

All exterior compartments shall have polished aluminum drip moldings installed above the doors where necessary to prevent water from entering the compartments.

Wheel well panels shall be formed aluminum that is welded in place. There shall be no visible bolt heads, retention nuts or fasteners on the exterior surface of the panel. To fully protect the wheel well area from road debris and to aid in cleaning, a full depth radius wheel well liner shall be provided. The frame side of the wheel well area on each side of the opening shall be attached to the frame side of the front and rear compartments. All seams on the frame side of the body shall be welded and caulked to prevent moisture from entering the compartments.

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 stainless steel fasteners.

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.

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One (1)

COMPARTMENT FLOORS

Y__N__

The compartment floors shall be constructed of smooth aluminum material, to match the compartment interior walls.

One (1)

GALVANIZED SUB-FRAME

Y__N__

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

Two full frame lengths, three-inch (3") 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") 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.

The rear sub frame and lower body platform support members shall be of the "two piece" design, fabricated of 3.4 lb. per foot heavy channel and welded to the full length sub frame channel liners at the rear.

A minimum of two rear platform support channels shall be provided and constructed of 3.4 lb. per foot heavy steel material. Each support channel shall have welded in gusset where the support meets the rear sub frame rails.

After fabrication the entire sub frame assembly shall be hot dip galvanized to prevent corrosion. The hot dip galvanized sub frame shall have a lifetime warranty against failure due to corrosion.

This steel sub frame shall carry the weight of the apparatus body, tank, water and equipment. This method of apparatus construction gives an excellent strength/weight ratio.

One (1)

BODY CONFIGURATION

Y__N__

The aluminum apparatus body shall be up to 144" long, reference the drawing for actual body length.

One (1)

SINGLE AXLE WHEEL WELL LINER AND FENDERETTES

Y__N__

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.

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One (1)

Y__N__

BODY WIDTH

The overall width of the pumper body shall not exceed 96".

COMPARTMENT DEPTH

The left side compartments on the pumper body shall have the following dimensions:

Lower portion depth of 23"
Upper portion depth of 13"

One (1)

Y__N__

The lower right side compartments on the pumper body shall be 23" deep.

HOSEBED WIDTH

One (1)

Y__N__

The width of the pumper body hose bed shall be 68".

COMPARTMENT HEIGHT

One (1)

Y__N__

The left side body compartments shall be 63" high.

COMPARTMENT HEIGHT

One (1)

Y__N__

The right side body compartments shall be 30" high.

HINGED COMPARTMENT FLUSH 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 tread plate compartment tops into an extended drip edge and on the bottom by the rub rail.

Doors shall be a minimum 2" thick, fabricated of a minimum of 1/8" smooth aluminum. Full panel inner compartment door liners shall be provided and constructed from 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 dampeners to hold the doors in the open position. All other hinged doors shall be equipped with spring loaded hold open devices 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.

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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 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)

LEFT FRONT COMPARTMENT

Y__N__

There shall be one (1) low compartment located ahead of the rear wheels. The compartment shall be equipped with a low single hinged door.

One (1)

The compartment shall be equipped with the following:

Y__N__

COMPARTMENT LOUVER

One (1)

One (1) louver with filter shall be installed on the back wall of the specified compartments.

Y__N__

ADJUSTABLE SHELVING TRACKS

One (1)

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

Y__N__

ADJUSTABLE SHELF

One (1)

One (1) adjustable shelf shall be constructed of .125" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf. Trim-Lok trim shall be installed on the front lip edge to afford protection to equipment and firefighter when loading/unloading.

Y__N__

ADDITIONAL COMPARTMENT LIGHT

One (1)

One (1) additional sealed light shall be provided and installed for compartments with shelves, as directed by the Fire Department. The 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.

Y__N__

500# ROLLOUT TRAY

One (1) roll-out equipment tray shall be installed in a standard depth compartment. The tray with telescoping slides and roller bearings shall be rated to a maximum load of 500 lbs. Tray shall be of a closed-in design, formed of .188" smooth aluminum plate, fabricated with two (2) inch sides. Trim-Lok edge trim shall be installed on the front lip to afford protection to equipment and firefighter when loading/unloading. Reflective material measuring 1" x 6" shall be installed on the each front corner both on the face and side of tray for firefighter safety.

The tray unit shall roll out to full extension of the compartment, with latching mechanism to hold tray in both fully-extended and stored positions.

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One (1) **ADDITIONAL COMPARTMENT LIGHT** Y__N__

One (1) additional sealed light shall be provided and installed for compartments with shelves, as directed by the Fire Department. The 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.

One (1) **COMPARTMENT LIGHTS** Y__N__

One (1) incandescent light fixture shall be installed on the ceiling of the exterior compartment of the apparatus. The light shall have a clear lens.

One (1) **COMPARTMENT LIGHT SWITCH** Y__N__

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1) **LEFT OVERWHEEL COMPARTMENTS** Y__N__

There shall be two (2) compartments located above the lower compartments. Each of the two (2) compartments shall be equipped with a single hinged lift up door.

The compartments shall be equipped with the following:

Two (2) **COMPARTMENT LIGHTS** Y__N__

Two (2) incandescent light fixture shall be installed on the ceiling of the exterior compartment of the apparatus. The light shall have a clear lens.

Two (2) **COMPARTMENT LIGHT SWITCHES** Y__N__

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1) **LEFT REAR COMPARTMENT** Y__N__

There shall be one (1) low compartment located behind the rear wheels. The compartment shall be equipped with a low single hinged door.

The compartment shall be equipped with the following:

One (1) **COMPARTMENT LOUVER** Y__N__

One (1) louver with filter shall be installed on the back wall of the specified compartments.

One (1) **ADJUSTABLE SHELVING TRACKS** Y__N__

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

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One (1)

ADJUSTABLE SHELF

Y__N__

One (1) adjustable shelf shall be constructed of .125" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf. Trim-Lok trim shall be installed on the front lip edge to afford protection to equipment and firefighter when loading/unloading.

One (1)

ADDITIONAL COMPARTMENT LIGHT

Y__N__

One (1) additional sealed light shall be provided and installed for compartments with shelves, as directed by the Fire Department. The 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.

One (1)

COMPARTMENT LIGHTS

Y__N__

One (1) incandescent light fixture shall be installed on the ceiling of the exterior compartment of the apparatus. The light shall have a clear lens.

One (1)

COMPARTMENT LIGHT SWITCH

Y__N__

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1)

RIGHT FRONT COMPARTMENT

Y__N__

There shall be one (1) low compartment located ahead of the rear wheels. The compartment shall be equipped with a low single hinged door.

The compartment shall be equipped with the following:

One (1)

COMPARTMENT LOUVER

Y__N__

One (1) louver with filter shall be installed on the back wall of the specified compartments.

One (1)

ADJUSTABLE SHELVING TRACKS

Y__N__

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1)

ADJUSTABLE SHELF

Y__N__

One (1) adjustable shelf shall be constructed of .125" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf. Trim-Lok trim shall be installed on the front lip edge to afford protection to equipment and firefighter when loading/unloading.

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One (1) Y__N__
ADDITIONAL COMPARTMENT LIGHT

One (1) additional sealed light shall be provided and installed for compartments with shelves, as directed by the Fire Department. The 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.

One (1) Y__N__
COMPARTMENT LIGHTS

One (1) incandescent light fixture shall be installed on the ceiling of the exterior compartment of the apparatus. The light shall have a clear lens.

One (1) Y__N__
COMPARTMENT LIGHT SWITCH

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1) Y__N__
RIGHT REAR COMPARTMENT

There shall be one (1) low compartment located behind the rear wheels. The compartment shall be equipped with a low single hinged door.

The compartment shall be equipped with the following:

One (1) Y__N__
COMPARTMENT LOUVER

One (1) louver with filter shall be installed on the back wall of the specified compartments.

One (1) Y__N__
ADJUSTABLE SHELVING TRACKS

The compartments shall be equipped with two (2) aluminum adjustable tracks, vertically mounted, that are bolted in place for adjustable shelving and equipment mounting.

One (1) Y__N__
ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .125" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf. Trim-Lok trim shall be installed on the front lip edge to afford protection to equipment and firefighter when loading/unloading.

One (1) Y__N__
ADDITIONAL COMPARTMENT LIGHT

One (1) additional sealed light shall be provided and installed for compartments with shelves, as directed by the Fire Department. The 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.

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One (1) Y__N__

COMPARTMENT LIGHTS

One (1) incandescent light fixture shall be installed on the ceiling of the exterior compartment of the apparatus. The light shall have a clear lens.

One (1) Y__N__

COMPARTMENT LIGHT SWITCH

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1) Y__N__

REAR BODY BEAVERTAILS

Beavertail panels shall be provided for the rear of the apparatus body. These panels shall be attached to the back wall of the body and the base of the rear step. The beaver tails shall angle down from the top of the hose bed to the rear step. Polished aluminum treadplate shall be installed on the inside of the beavertail.

One (1) Y__N__

REAR CENTER COMPARTMENT

There shall be one (1) low compartment located at the rear of the apparatus. The compartment shall be equipped with two (2) lower hinged aluminum treadplate doors, with a slam strip located between the doors. The compartment shall be open to the rear side compartments, providing a transverse compartment at the rear of the truck.

The compartment shall be equipped with the following:

One (1) Y__N__

COMPARTMENT LOUVER

One (1) louver with filter shall be installed on the back wall of the specified compartments.

One (1) Y__N__

COMPARTMENT LIGHTS

One (1) incandescent light fixture shall be installed on the ceiling of the exterior compartment of the apparatus. The light shall have a clear lens.

One (1) Y__N__

COMPARTMENT LIGHT SWITCH

The exterior compartment light will be controlled by an automatic "On-Off" switch located on each compartment door.

One (1) Y__N__

REAR STEP - 18" BOLT-ON

An 18" deep step surface shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The tailboard shall be constructed of .188" aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards.

The maximum height of the step assembly shall be no more than 24" from the ground when the apparatus is in the loaded condition. A label shall be provided warning personnel that riding on the rear step while the apparatus is in motion is prohibited.

One (1) Y__N__

EXTERIOR LADDER MOUNTING

Exterior ladder mountings shall be provided for the specified ladders on the side of the apparatus body.

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LADDER MOUNT LOCATION

The location of the ladder mounting assembly shall be located on the right hand side of the apparatus body.

One (1)

Y__N__

EXTERIOR FOLDING ATTIC LADDER MOUNTING

An exterior mounting shall be provided for the specified folding attic ladder.

One (1)

Y__N__

LADDER SOURCE

New ground ladders shall be provided by the body builder.

One (1)

Y__N__

PIKE POLE MOUNTING BRACKET

One (1) tube shall be provided for pike pole mounting. The tube shall have a 2" interior diameter and shall be mounted on the outside of the apparatus body.

One (1)

Y__N__

PIKE POLE SOURCE

The pike poles shall be provided by the body builder.

One (1)

Y__N__

HARD SUCTION MOUNTING

One (1) horizontally mounted aluminum hard suction hose tray with Velcro straps shall be provided above the left side body compartments.

One (1)

Y__N__

HARD SUCTION MOUNTING

One (1) horizontally mounted aluminum hard suction hose tray with Velcro straps shall be provided above the right side body compartments.

One (1)

Y__N__

SUCTION HOSE SOURCE

New suction hose shall be provided by the body builder.

One (1)

Y__N__

FRONT BODY PROTECTION PANELS

Aluminum tread plate overlays and panels shall be installed on the front of the body from the lower edge to the top of the compartment doors.

One (1)

Y__N__

REAR BODY PROTECTION PANELS

Aluminum tread plate overlays and panels shall be installed on the rear of the body from the lower edge to the top of the compartment doors. The material shall be bolted in place and sealed to prevent any moisture entry between the overlay and the body structure.

One (1)

Y__N__

POLISHED COMPARTMENT TOP WELDS

The compartment top welds to be polished.

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- One (1) **FOLDING STEP LEFT REAR** Y__N__
- Two (2) 8" square folding steps of die cast aluminum shall be provided. The steps shall comply to NFPA #1901 non-slip standards and shall be installed on the rear left side of the body.
- Steps shall be located one above and one below the intermediate step on the left side.
- One (1) **FOLDING STEP RIGHT REAR** Y__N__
- Two (2) 8" square folding steps of die cast aluminum shall be provided. The steps shall comply to NFPA #1901 non-slip standards and shall be installed on the rear right side of the body.
- Steps shall be located one above and one below the intermediate step on the right side.
- One (1) **REAR INTERMEDIATE STEP** Y__N__
- An intermediate fixed step shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The intermediate step shall be constructed of .188" polished aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards and be approximately 8" deep x 68" wide.
- One (1) **HANDRAIL REAR STEP** Y__N__
- Two (2) extruded aluminum non-slip handrails, approximately 48" in length, shall be provided and vertically mounted on the rear of the apparatus, one (1) on each side of the body.
- One (1) **HANDRAIL BELOW HOSEBED** Y__N__
- One (1) extruded aluminum non-slip handrail, approximately 60" in length, shall be provided and horizontally mounted below the hose bed on the rear of the apparatus.
- One (1) **EXTRUDED ALUMINUM RUB RAILS** Y__N__
- Full body length polished aluminum rub rails shall be bolted in place on the lower right and left body sides. The side rub rails shall be a heavy extruded aluminum "C" channel.
- One (1) **WHEEL WELL COMPARTMENT LOCATION** Y__N__
- One (1) wheel well compartment shall be located on the left side in ahead of the rear wheel well panel.
- One (1) **AIR CYLINDER COMPARTMENT IN WHEELWELL** Y__N__
- One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.
- The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.
- Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided.

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One (1) Y__N__

SCBA COMPARTMENT STRAPS

One (1) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

One (1) Y__N__

WHEEL WELL COMPARTMENT LOCATION

One (1) wheel well compartment shall be located on the left side behind the wheel well panel.

One (1) Y__N__

AIR CYLINDER COMPARTMENT IN WHEELWELL

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided.

One (1) Y__N__

SCBA COMPARTMENT STRAPS

One (1) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

One (1) Y__N__

WHEEL WELL COMPARTMENT LOCATION

One (1) wheel well compartment shall be located on the right side in ahead of the rear wheel well panel.

One (1) Y__N__

AIR CYLINDER COMPARTMENT IN WHEELWELL

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.

Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided.

One (1) Y__N__

SCBA COMPARTMENT STRAPS

One (1) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1")

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One (1) of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve. Y__N__

WHEEL WELL COMPARTMENT LOCATION

One (1) wheel well compartment shall be located on the right side behind the wheel well panel. Y__N__

AIR CYLINDER COMPARTMENT IN WHEELWELL

One (1) breathing air cylinder storage compartment shall be provided and located in the rear wheel well of the apparatus body.

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be provided with a gasket between door and body side, bolted in-place and removable for repair or replacement.

One (1) Compartment shall be provided with SCBA cylinder scuff protection. A brushed aluminum door with push button trigger latch shall be provided. Y__N__

SCBA COMPARTMENT STRAPS

One (1) one-inch (1") wide loop of black webbing shall be installed in each SCBA compartment to prevent the bottle from sliding out of the compartment in case of door failure. The loop shall be mounted, centered in the compartment and shall hang within one-inch (1") of the compartment floor to allow the bottle to pass by the strap when the bottle is placed in the compartment. The strap shall loop over the valve.

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12 - VOLT ELECTRICAL SPECIFICATIONS

One (1)

Y___N___

LOW VOLTAGE ELECTRICAL SYSTEM SPECIFICATIONS

The electrical system shall include all panels, electrical components, switches and relays, wiring harnesses and other electrical components. The electrical equipment installed by the apparatus manufacturer shall conform to current automotive electrical system standards, the latest Federal DOT standards, and the requirements of the applicable NFPA standards.

All wiring shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for the protected circuit. Voltage drops in all wiring from the power source to the using device shall not exceed 10 percent. The wiring and wiring harness and insulation shall be in conformance to applicable SAE and NFPA standards. The wiring harness shall conform to SAE J-1128 with GXL temperature properties. All exposed wiring shall be protected in a loom with a minimum 289 degree Fahrenheit rating. All wiring looms shall be properly supported and attached to body members. The electrical conductors shall be constructed in accordance with applicable SAE standards, except when good engineering practice requires special construction.

The wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection and shall be installed in accordance with the device manufacturer's instructions. Electrical connections shall be with mechanical type fasteners and large rubber grommets where wiring passes through metal panels.

The wiring between the cab and body shall be joined using Deutsche type connectors or an enclosed in a terminal junction panel area. This system will permit body removal with minimal impact on the apparatus electrical system. All connections shall be crimp-type with insulated shanks to resist moisture and foreign debris such as grease and road grime. Weather-resistant connectors shall be provided throughout to ensure the integrity of the electrical system.

There shall be no exposed electrical cabling, harnesses, or terminal connections located in compartments, unless they are enclosed in a junction box or covered with a removable electrical panel. The wiring shall be secured in place and protected against heat, liquid contaminants and damage. Wiring shall be uniquely identified every three-inches (3") by color coding or permanent marking with a circuit function code and identified on a reference chart or electrical wiring schematic per requirements of applicable NFPA #1901 standards.

The electrical circuits shall be provided with low voltage over current protective devices. Such devices shall be accessible and located in required terminal connection locations or weather resistant enclosures. The over current protection shall be suitable for electrical equipment and shall be automatic reset type and meet SAE standards. All electrical equipment, switches, relays, terminals, and connectors shall have a direct current rating of 125 percent of maximum current for which the circuit is protected. The system shall have electro-magnetic interference suppression provided as required in applicable SAE standards.

The electrical system shall include the following:

- a) Electrical terminals in weather exposed areas shall have a non-conductive grease or spray applied. A corrosion preventative compound shall be applicable to all terminal plugs located outside of the cab or body.
- b) The electrical wiring shall be harnessed or be placed in a protective loom.
- c) Holes made in the roof shall be caulked with silicone. Large fender washers shall be used when fastening equipment to the underside of the cab roof.

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- d) Any electrical component that is installed in an exposed area shall be mounted in a manner that will not allow moisture to accumulate in it.
- e) A coil of wire must be provided behind an electrical appliance to allow them to be pulled away from mounting area for inspection and service work.
- f) All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.

The warning lights shall be switched in the chassis cab with labeled switches in an accessible location. Individual rocker switches shall be provided only for warning lights provided over the minimum level of warning lights in either the stationary or moving modes. All electrical equipment switches shall be mounted on a switch panel mounted in the cab convenient to the operator. The warning light switches shall be of the rocker type. For easy nighttime operation, an integral indicator light shall be provided to indicate when the circuit is energized. All switches shall be appropriately identified as to their function.

A single warning light switch shall activate all required warning lights. This switch will allow the vehicle to respond to an emergency and "call for the right of way". When the parking brake is applied, a "blocking right of way" system shall automatically activate per requirements of the applicable NFPA standards. All "clear" warning lights shall be automatically turned off upon application of the parking brake.

NFPA REQUIRED TESTING OF ELECTRICAL SYSTEM

The apparatus shall be electrically tested upon completion of the vehicle and prior to delivery. The electrical testing, certifications, and test results shall be submitted with delivery documentation per requirements of the applicable NFPA standards. The following minimum testing shall be completed by the apparatus manufacturer:

1. Reserve capacity test:

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for ten (10) minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a failed test.

2. Alternator performance test at idle:

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

3. Alternator performance test at full load:

The total continuous electrical load shall be activated with the engine running up to the engine manufacturer's governed speed. The test duration shall be a minimum of two (2) hours. Activation of the load management system is permitted during this test. However, if an alarm sounds due to excessive battery discharge, as detected by the system requirements in the NFPA standards, or a system voltage of less than 11.7 volts dc for more than 120 seconds is present, the test has failed.

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4. Low voltage alarm test:

Following the completion of the above tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm activates. The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts dc for a 12 volt system shall be considered a test failure. The battery system shall then be able to restart the engine. Failure to restart the engine shall be considered a test failure.

NFPA REQUIRED DOCUMENTATION

The following documentation shall be provided on delivery of the apparatus:

- a. Documentation of the electrical system performance tests required above.
- b. A written load analysis, including:
 - 1. The nameplate rating of the alternator.
 - 2. The alternator rating under the conditions.
 - 3. Each specified component load.
 - 4. Individual intermittent loads.

One (1)

Y__N__

LOW VOLTAGE ELECTRICAL SYSTEM

The electrical junction or terminal boxes shall be weather resistant and located away from water spray conditions. In addition, the main body junction panel shall house the automatic reset breakers and relays where required. The main body junction panel shall be located in the pump compartment.

One (1)

Y__N__

LOAD MANAGER 2

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 enclosure to enhance EMI/RFI protection. Rosenbauer shall provide for all electrical loads in excess of the NFPA minimum electrical requirements that exceed the alternator output.

One (1)

Y__N__

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.

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One (1)

DASH MOUNTED EMERGENCY ELECTRICAL SWITCH PANEL

Y__N__

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)

BATTERY SYSTEM

Y__N__

The chassis shall be provided with 12 volt Group 31, 650 CCA maintenance free batteries. The batteries shall be wired into the system to form a "single" battery system.

One (1)

MASTER ELECTRIC SWITCH

Y__N__

One (1) chassis provided battery disconnect switch shall be located conveniently to the driver of the apparatus. The switch shall disconnect the 12 volt power supply from the battery system.

One (1)

BATTERY CHARGER

Y__N__

One (1) Kussmaul Autocharge model #091-165-12 automatic battery charger shall be wired to the 12 volt battery system. The charger unit shall be mounted in a clean dry area and will be accessible for service and/or maintenance.

One (1)

SHORE POWER PLUG

Y__N__

The shore power plug shall be located in the step area below the left front cab door of the commercial chassis.

One (1)

SHORE POWER RECEPTACLE

Y__N__

One (1) chassis supplied Kussmaul model #091-55-XX-120 20 amp "auto-eject" shore power receptacle shall be provided on the apparatus. The shore power plug shall be "ejected" when the chassis's engine starter is engaged. The receptacle shall be wired to any 120 volt A/C equipment that requires shore power. An aluminum enclosure shall be provided with the receptacle for protection from road dirt and damage. A hinged weatherproof cover shall be provided.

One (1)

ALTERNATOR

Y__N__

The alternator shall be supplied by the chassis manufacturer.

One (1)

AIR HORNS

Y__N__

Two (2) Stuttertone chrome plated air horns shall be mounted on the side of the hood of the commercial chassis. An air protection valve shall be provided in the air horn piping that will not allow the chassis air brake system to drop below 90 PSI.

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- One (1) **ELECTRIC TRAFFIC HORN AND AIR HORN SELECTOR SWITCH** Y__N__
- One (1) selector switch shall be provided on the cab's dash that will allow the chassis steering wheel horn button to activate either the electric traffic horn or air horn system.
- One (1) **AIR HORN SWITCH** Y__N__
- One (1) switch shall be installed to activate the air horn system on the officer's side of the cab dash.
- One (1) **INTERIOR CAB CEILING LIGHT** Y__N__
- One (1) ceiling mounted dome light with on/off switch shall be supplied with the chassis.
- One (1) **ENGINE COMPARTMENT LIGHT** Y__N__
- One (1) 12 volt incandescent light with switch shall be mounted in the engine enclosure.
- One (1) **PUMP ENCLOSURE LIGHTS** Y__N__
- One (1) incandescent work light shall be provided in the pump enclosure. The control switch shall be mounted on the light head.
- Two (2) **LIGHT MOUNTING LOCATION** Y__N__
- Two (2) The mounting location for the specified light shall be on the pump enclosure.
- Two (2) **300 WATT FLOODLIGHT** Y__N__
- Two (2) Fire Research NightMaster model #LTA100-TC0 floodlight(s) shall be installed. The triple cluster assembly shall be three (3) chrome light fixtures mounted on a square aluminum tube. There shall be a SPOT OFF FLOOD selector switch on the square tube.
- Each of the light fixtures shall have three (3) PAR-46 dual filament 100 watt 12 volt bulb. The triple cluster assembly will draw 25 amps and generate 600,000 candlepower in spot mode or 50,000 candlepower in flood mode. The triple cluster assembly shall be no more than 5-1/2" deep by 8-1/4" high by 19" wide. The square tube shall be powder coated white. The floodlight shall be UL listed as a scene light for fire service use.
- Two (2) The location of the telescoping lights shall be at the pump panel, one (1) each side. Y__N__
- Two (2) **TELESCOPIC POLE** Y__N__
- Two (2) Fire Research 530 series side mount bottom raise telescopic light pole shall be provided. The light pole shall extend approximately 30" in height and be anodized aluminum. A knurled twist lock mechanism to secure the extension pole in position shall be included with the pole.
- Two (2) **LIGHT SWITCH ON LAMPHEAD** Y__N__
- A switch shall be installed on the quartz light lamp head. The weatherproof on-off toggle switch shall be mounted on the lower left side of the lamp head.

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- One (1) **BACK-UP ALARM** Y__N__
One (1) automatic electric back-up alarm shall be wired to the back-up light circuit, and mounted under the rear of the apparatus body.
- One (1) **MAP LIGHT** Y__N__
One (1) Federal model #LF18-TRB map light with a goose neck light arm shall be provided on the right side dash or console area of the chassis cab. The light shall be 12 volt and have an on-off switch located on the base of the light.
The map light shall be located on the officer's side of the dash.
- One (1) **IN CAB HAND HELD SPOT LIGHT** Y__N__
One (1) Optronics model #KB-4000 "Blue Eye" hand held, 12 volt spot light shall be provided on the right side of the cab dash area. The light shall be controlled by a momentary three-way switch located on the hand light. The light shall be secured per requirements of the NFPA standard.
- One (1) **HEADLIGHT FLASHER** Y__N__
One (1) Code 3 model 700 wig-wag flasher shall be provided. This shall flash two loads of up to 8 amps (100 watts) each.
- One (1) **RADIO ANTENNA** Y__N__
One (1) radio antenna shall be supplied and installed on the apparatus. The location shall be determined by the customer.
The radio antenna shall be located behind the light bar in the center of the cab roof.
- One (1) **MARKER LIGHTS** Y__N__
Incandescent marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements.
- One (1) **LICENSE PLATE BRACKET** Y__N__
One (1) license plate bracket shall be provided at the rear bumper. The bracket shall have a light and shall be chrome plated.
- One (1) **TAIL LIGHTS** Y__N__
Two (2) Weldon tail/brake lights shall be provided. The rectangular light shall be 7" x 9" incandescent with a red lens.
- One (1) **TURN SIGNALS** Y__N__
Two (2) Weldon turn signals shall be provided. The rectangular incandescent light shall be 7" x 9" in dimension.

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- One (1) **BACKUP LIGHTS** Y__N__
Two (2) Weldon halogen backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 7" x 9" and the lens color shall be clear.
- One (1) **CAB GROUND LIGHTS** Y__N__
Two (2) incandescent ground lights shall be installed under the two (2) cab doors.
- One (1) **GROUND LIGHT SWITCH** Y__N__
The ground lights shall automatically activate when the cab door switch is applied.
- One (1) **PUMP PANEL GROUND LIGHTS** Y__N__
Two (2) incandescent ground lights shall be installed under the pump panel running boards. One (1) light shall be located on the driver's side and one (1) light located on the officer's side of the apparatus.
- One (1) **GROUND LIGHT SWITCH** Y__N__
The ground lights shall automatically activate when the pump panel switch is applied.
- One (1) **REAR STEP GROUND LIGHTS** Y__N__
Two (2) incandescent ground lights shall be installed under rear step of the apparatus.
- One (1) **GROUND LIGHT SWITCH** Y__N__
The ground lights shall automatically activate when the pump panel switch is applied.
- Two (2) **STEP LIGHT** Y__N__
Two (2) incandescent step light with clear lens shall be installed to illuminate the rear step of the apparatus body.
- Two (2) **STEP/WALKWAY LIGHT SWITCH** Y__N__
The step/walkway light switch shall be installed and wired to a switch on the pump panel. The ground lights shall automatically activate when the pump panel switch is applied.
- One (1) **DECK LIGHT MOUNTING** Y__N__
The deck lights shall be installed at the rear of the hose bed.
- One (1) **DECK LIGHTS** Y__N__
One (1) Unity Model #AG spotlight and one (1) Unity Model #AG-SH7609 floodlight, with 50 watt halogen bulbs shall be installed. The lights shall have an "on-off" switch.
- One (1) **DOOR OPEN/HAZARD WARNING LIGHT** Y__N__
One (1) red flashing, warning light shall be provided and installed in the driver's compartment to indicate an open passenger or apparatus compartment door. The warning light shall also be attached to folding equipment racks and light towers as specified. The light shall be a

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flashing rectangular incandescent marker light with a red lens and shall be properly marked and identified.

One (1)

Y__N__

ELECTRIC SIREN

One (1) Code 3 Model #3692 V-Con electronic siren shall be mounted in the cab. The unit shall feature an electronic air horn, wail, yelp, hi-lo siren and shall have a hard wired microphone.

One (1)

Y__N__

SPEAKER

One (1) Federal Signal DynaMax Model #MS100 speaker shall be installed.

One (1)

Y__N__

SPEAKER LOCATION

The siren speaker shall be installed in the center of the apparatus bumper.

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One (1) Y__N__

EMERGENCY LIGHTING PACKAGES

One (1) Y__N__

LIGHTBAR

One (1) Code 3 Model #X58A2 light bar shall be installed. The Excalibur Series light bar shall be 58" in length and shall include two (2) 50 watt standard rotators, two (2) 50 watt fast rotators, two (2) cascade mirrors, four (4) flat mirrors, and two (2) intersection lights.

The lens colors shall be red and clear. The location shall be in the center of the apparatus cab roof.

One (1) Y__N__

UPPER REAR WARNING LIGHTS

One (1) pair of Code 3 model 550 rotating beacon halogen warning lights shall be installed, one each side on the upper rear of the apparatus body. The rotary light shall have a 50 watt halogen lamp with the total dimensions of the lights 6" x 6" and shall have one red lens and one amber lens.

One (1) Y__N__

REAR WARNING LIGHT MOUNTING

The upper rear lights shall be mounted on cast aluminum stanchions attached to the apparatus body, one on each side.

One (1) Y__N__

LOWER FRONT WARNING LIGHTS

One (1) pair of Code 3 model #41 halogen lights shall be installed, one each side on the front of the chassis cab. The dimensions of the lights shall be 3" x 7" and shall have a red lens.

One (1) Y__N__

INTERSECTION WARNING LIGHTS

One (1) pair of Code 3 model #41 halogen lights shall be installed one each side of the chassis cab. The dimensions of the lights shall be 3" x 7" and shall have a red lens.

One (1) Y__N__

LOWER MID-BODY WARNING LIGHTS

One (1) pair of Code 3 series 41 halogen warning lights shall be installed, one each side of the apparatus, mid-body. The dimensions of the lights shall be 3" x 7" and shall have a red lens.

One (1) Y__N__

LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Code 3 series 41 halogen warning lights shall be installed, one each side of the apparatus body, towards the rear of the body. The dimensions of the lights shall be 3" x 7" and shall have a red lens.

One (1) Y__N__

LOWER REAR WARNING LIGHTS

One (1) pair of Code 3 series 41 halogen warning lights shall be installed, one each side on the lower rear of the apparatus body. The dimensions of the lights shall be 3" x 7" and shall have a red lens.

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One (1)

CHASSIS PAINT

Y__N__

The commercial chassis shall be painted by the chassis manufacturer.

The cab shall be painted two-tone. The top shall be painted white. The top shall be painted red.

One (1)

The paint break shall be determined during the pre-construction meeting.

Y__N__

BODY PAINT PROCESS

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

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

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

The first coating to be applied is a pre-treat self etching primer (PPG DX1787) (.5 to 1.0 dry film build) for maximum adhesion to the body material. The next two to four coats (depending on need) shall be an acrylic urethane primer surfacer (PPG K38). The film build shall be 4-6 mils when dry. The primer surfacer coat, after appropriate dry time, shall be sanded with 320-600 grit sandpaper to ensure maximum gloss of the paint. The last step is the application of at least three coats of PPG Concept acrylic urethane two-component color (single stage). The film build being 2-3 mils dry. The single stage acrylic urethane, when mixed with component (PPG DCX61) catalyst shall provide a UV barrier to prevent fading and chaulking.

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

One (1)

The body color shall be red to match the cab.

Y__N__

INTERIOR COMPARTMENT FINISH

The interior compartment walls shall be coated with a heavy spray on lining material. The compartments shall be cleaned with a wax and grease remover and then caulked with a urethane caulk. The compartments are then sprayed with one coat of epoxy primer, then two to three coats of urethane bed liner. The lining material shall dry to form an impervious one piece covering to protect the compartment interiors from damage. The lining material shall be gray in color and applied on eight (8) compartments.

One (1)

WHEEL PAINTING

Y__N__

The front and rear wheels shall be finish painted to match the apparatus body. Wheels shall be properly prepared and finished with primer coats and top coats as specified.

One (1)

WHEEL TRIM PAINT

Y__N__

The outer one-inch edge of each outside wheel rim shall be painted silver in color unless otherwise specified. Four (4) wheels shall have edge trim paint.

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One (1) **TOUCH-UP PAINT** Y__N__

One (1) two (2) ounce bottle of touch-up paint shall be furnished with the completed truck at final delivery.

One (1) **SIMULATED GOLD LEAF LETTERING** Y__N__

The lettering shall be applied in simulated gold leaf material, shaded in black and encapsulated in clear Mylar.

A quantity of seventy-five (75), four (4) inch letters are to be placed on the cab and on the body as directed by fire department.

One (1) **REFLECTIVE STRIPING** Y__N__

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 the applicable NFPA reflectivity requirements. At least 50% of the perimeter length of each side and width of the rear and at least 25% of the perimeter width of the front of the vehicle shall have reflective stripe.

The side stripe shall be applied in a "Z" pattern.

One (1) **COLOR OF STRIPING MATERIAL** Y__N__

The color of the 3M brand striping material shall be white.

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ADDITIONAL EQUIPMENT

The following equipment shall be supplied with the apparatus:

One (1) Y__N__

EQUIPMENT PAYLOAD WEIGHT ALLOWANCE

In compliance with NFPA #1901 standards, the apparatus shall be engineered to provide an allowance of 2000 pounds of fire department provided loose equipment.

One (1) Y__N__

ROOF LADDER

One (1) Duo Safety Model 775-A, 14 foot aluminum roof ladder with folding steel roof hooks on one end and steel spikes on the other end shall be provided on the apparatus. The ladder shall meet or exceed all latest NFPA Standards.

One (1) Y__N__

EXTENSION LADDER

One (1) Duo-Safety Model 900-A, 24 foot two (2) section aluminum extension ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA standards.

One (1) Y__N__

FOLDING LADDER

One (1) Duo Safety Model 585-A, 12 foot folding aluminum ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA Standards.

One (1) Y__N__

PIKE POLE

One (1) 10' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

Two (2) Y__N__

SUCTION HOSES

Two (2) 6.0" x 10 foot lengths of Kocheck PVC flexible suction hose shall be supplied. The suction hoses shall have light weight couplings provided.

Two (2) Y__N__

HOSE COUPLINGS

Light weight aluminum couplings shall be provided on the suction hose. A long handle female swivel shall be provided on one end and a rocker lug male shall be provided for the other end.

One (1) Y__N__

STRAINER

One (1) Kocheck Model BS60C barrel strainer shall be provided. The strainer shall be constructed from aluminum with K-Chrome finish and include a tie off loop on the end plate. The strainer shall be provided with a 6.0" NST female rocker lug coupling.

One (1) Y__N__

MISCELLANEOUS HARDWARE

Miscellaneous loose hardware consisting of bolts, nuts, washers, and screws shall be supplied with the apparatus at time of delivery.

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One (1)

Y__N__

BUMPER TO BUMPER WARRANTY

We warrant each new motorized fire apparatus manufactured by ROSENBAUER AMERICA, LLC 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 ROSENBAUER AMERICA, LLC, 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 ROSENBAUER AMERICA, LLC.

One (1)

Y__N__

ALUMINUM BODY WARRANTY - FIVE YEAR

Rosenbauer America, LLC warrants to the original purchaser only, that the all aluminum body, fabricated by Rosenbauer America, LLC, under normal use and with reasonable maintenance, 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.

ROSENBAUER AMERICA, LLC MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE ALUMINUM BODY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND HEREBY DISCLAIMED.

Rosenbauer America, LLC 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 delivery or not due to misuse, negligence, or accident. If Rosenbauer America, LLC elects to repair this body, the extent of such repair shall be determined solely by Rosenbauer America, LLC, and shall be performed solely at the Rosenbauer America, LLC factory, or at

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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.

Rosenbauer America, LLC will not be liable for 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.

Rosenbauer America, LLC 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.

Note: Surety bond, if required, will cover standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.

One (1)

Y___N___

GALVANIZED SUBFRAME WARRANTY

Subject to the provisions, limitations and conditions set forth in this warranty, Rosenbauer America, LLC (hereby referred to as "seller"), hereby warrants to each original purchaser only that each new hot dip galvanized 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 for the duration of ownership by the original purchaser. 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 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 Rosenbauer America, 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 ROSENBAUER AMERICA, 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.

Note: Surety bond, if required, will cover standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.

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One (1)

Y__N__

PAINT WARRANTY FIVE YEAR

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 Rosenbauer America. LLC:

1. Peeling or delaminating of the topcoat and/or other layers of paint.
2. Cracking or checking.
3. Loss of gloss caused by cracking, checking, or hazing.
4. 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.

Note: Surety bond, if required, will cover standard one year warranty period only and will not cover any extended warranties allowed by seller or other component manufacturers.

One (1)

Y__N__

PUMP WARRANTY

Waterous warrants, to the original buyer only, that products and parts manufactured by Waterous will be free from defects in material and workmanship under normal use and service for a period of five (5) years from the date the product is first placed in service, or five and one half 5-1/2 years from the date of shipment by Waterous, whichever period will be the first to expire; provided the buyer notifies Waterous in writing, of the defect in said product within the warranty period, and said product is found by Waterous to be conforming with the aforesaid warranty.

When required in writing by Waterous, defective products must be promptly returned by the buyer to the Waterous Company at Waterous' plant at South St. Paul, Minnesota, or at such other place as may be specified by Waterous with transportation and other charges prepaid. A returned materials authorization (RMA) is required for all products and parts and may be requested by phone, fax or mail. The previously mentioned warranty excludes any responsibility or liability of Waterous for:

- A. Damages or defects due to accident, abuse, misuse, abnormal operating conditions, negligence, accidental causes or improper maintenance, or attributable to written specifications or instructions furnished by buyer;
- B. Defects in products manufactured by others and furnished by Waterous hereunder, it being understood and agreed by the parties that the only warranty provided for such products shall be the warranty provided by the manufacturer thereof which, if assignable, Waterous will assign to the buyer, if requested by Buyer;

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- C. Any product or part, altered, modified, serviced or repaired other than by Waterous, without its prior written consent.
- D. The cost of dismantling, removing, transporting, storing, or insuring the defective product or part and the cost of reinstallation.
- E. Normal wear items (packing, strainers, filters, light bulbs, anodes, intake screens, etc.)

This warranty is subject to Waterous' conditions of sale (Waterous Company form number F-2190 as currently in effect all of which are herein incorporated and by this reference made a part hereof.

All other warranties are excluded, whether expressed or implied by operation of law or otherwise, including all implied warranties of merchantability or fitness for purpose. Waterous shall not be liable for consequential or incidental damages directly or indirectly arising or resulting from breach of any of the terms of this limited warranty or from the sale, handling, or use of any other product or part. Waterous' liability hereunder, either for breach of warranty or for negligence, is expressly limited at Waterous' option:

- A. To the replacement at the agreed point of delivery of any product or part, which upon inspection by Waterous or its duly authorized representative, is found not to conform to the limited warranty set forth above, or
- B. To the repair of such product or part, or
- C. To the refund or crediting to buyer of the net sales price of the defective product or part.

Buyer's remedies contained herein are exclusive of any other remedy otherwise available to the buyer.

One (1)

Y__N__

STAINLESS STEEL PLUMBING WARRANTY

Subject to the provisions, limitations and conditions set forth in this warranty, Rosenbauer America, LLC (hereby referred to as "seller"), hereby warrants to each original purchaser only that stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of ten (10) years. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of the delivery and shall terminate upon the transfer of possession or ownership by original purchaser.

This warranty is conditioned upon normal use and reasonable maintenance of such plumbing; 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 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 of the warranty, the extent of that repair shall be determined solely by the seller and shall be performed solely at Rosenbauer America, 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.

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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 ROSENBAUER AMERICA, 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.

One (1)

Y ___ N ___

COMPLETE PRINTED MANUAL

ROSENBAUER shall provide with the vehicle upon delivery, one (1) complete delivery manual. This manual shall be in a notebook type binder, with reference tabs for each section of the vehicle. A companion compact disk (CD) with all of the printed material in an electronic format (Adobe Acrobat PDF) shall be provided.

Within each section shall be:

1. Individual component manufacturer instruction and parts manuals
2. Warranty forms for the body
3. Warranty forms for all major components
4. Warranty instructions and format to be used in compliance with warranty obligations
5. Wiring diagrams
6. Installation instruction and drawings for major parts
7. Visual graphics and electronic photos for the installation of major parts
8. Necessary normal routine service forms, publications and components of the body portion of the apparatus
9. Technical publications for training and instruction on 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

One (1)

Y ___ N ___

"ON-LINE" SERVICE MANUAL SUPPORT

As part of the standard delivery manual, **ROSENBAUER** shall give a password-protected link to the end user, allowing access to the manufacturers' database on service parts. The internet-based system shall allow the end user to access the major component supplier's service parts listing such as Hale, Waterous, Akron, etc. This shall be accomplished with simplistic point and click features on the manufacturer line item within the "stripper" or "line item sheet". This will include, automatic updates, printable schematics and manufacturer's web links and is available in the commercially available format of Adobe Acrobat Reader to access these documents. Rosenbauer America, LLC shall submit with the bid proposal, a sample set of on line Adobe formatted material that has been printed from the manufacturer's website.

Parts Listings within Manuals

The manuals will include cross-reference part numbers from the **ROSENBAUER** part number to the vendor parts. Example: **ROSENBAUER Hydraulic Ladder Rack, Part #LR-MN-0002 cross-referenced to Ziamatic Corporation Part 098-MN2345.** This will allow for reference between individual parts and complete installation assemblies as completed by the body builder. The manuals will list all components of the vehicle that includes a vendor part utilized in a complete installation via the manufacturers "line item sheet" or "stripper" utilized to manufacture the completed vehicle. These are "As Built" and proposals with "typical" or "generic" manuals will be rejected.

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Illustrative Schematics within Manuals

ROSENBAUER shall include installation diagrams and drawings of all major sub assemblies. This will include components such as hydraulic ladder rack assemblies, pump panels, tanks, fire pumps, etc. The drawings shall be linked via an Internet based service program, in an electronic format from the manufacturers "stripper" (line item listing) of the manufacturing document. **ROSENBAUER** shall submit, upon request, a sample schematic.

Digital Images within Manuals

In addition to two and three-dimensional installation drawings, **ROSENBAUER** shall make accessible, via an internet based link, the actual photos of the installed components listed within the "stripper" or line sheet. This will include, but not limited to wiring terminals, main body distribution strips, fire pump shifting, auxiliary components, etc. **ROSENBAUER** shall submit a sample of these upon request.

Installation Instructions within Manuals

ROSENBAUER "work instructions" or "installation instructions" shall be included with the service manuals. These documents shall be accessible via a web-based link to the individual vehicle manufactured. The work instructions shall give systematic instructions of the component installation process. **ROSENBAUER** shall submit, upon request, a sample set of instructions.

Automatic Updates of Manuals and Parts Listings

The online manuals will include automatic updates that are accessible via the web link. When clicking on the part within the manufacturer's stripper or line sheet, it will allow the end user to access the component manufacturer website for updated information. This will allow for latest parts and service components from the individual part manufacturer or vendor.

Electrical Schematics

To maintain the vehicles electrical systems, the manufacturer shall provide to the purchaser the instructional manuals, complete electrical information and schematics on the vehicle. The electrical information shall be provided as follows:

Wiring Systems 12 and 120 Volt:

1. Graphic symbols for electrical diagrams.
2. Wire labeling, imprinting codes and index.
3. Computer generated electrical schematics indicating the circuit number, wire size, switches, circuit breaker and terminals on the vehicle.

ROSENBAUER shall submit, upon request, a sample set of diagrams.