

# MARIPOSA PUD, CA

One (1)

## **CHASSIS**

A chassis shall be furnished per the attached specifications.

One (1)

## **CHASSIS ADDITIONS & MODIFICATIONS**

One (1)

## **FLUID DATA PLAQUE**

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**

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

The overall height of the vehicle shall not exceed 9' 4".

One (1)

## **NO RIDE LABEL**

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**

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)

## **TOW HOOKS**

The front tow hooks shall be supplied with the chassis.

One (1)

## **REAR TOWING PROVISIONS**

The rear of the apparatus shall have a single steel tow eye (centered) attached to a steel body framework assembly. The entire assembly shall be securely bolted to the chassis frame rails.

One (1)

## **BUMPER EXTENSION**

The front bumper extension shall be supplied with the chassis.

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## **FRONT BUMPER GRAVELSHIELD**

A 18" front to rear filler panel constructed from NFPA compliant, slip resistant aluminum tread plate shall be provided on the front chassis frame extension. The extension shall be covered on the top and sides, up to the level of front bumper and shall be reinforced to support one (1) firefighter (approximately 250 pounds) and the equipment specified to be installed.

One (1)

## **BUMPER COMPARTMENTS**

The bumper compartments shall be constructed by the body builder.

One (1)

## **FRONT BUMPER COMPARTMENT**

One (1) recessed fire hose compartment constructed from smooth aluminum shall be installed in the left side of the front bumper extension. Water drain holes shall be drilled in the bottom.

The compartment shall hold 100 feet of 1-3/4 DJ fire hose.

One (1)

## **FRONT BUMPER COMPARTMENT**

One (1) recessed fire hose compartment constructed from smooth aluminum shall be installed in the right side of the front bumper extension. Water drain holes shall be drilled in the bottom.

The compartment shall hold 100 feet of 1-3/4 DJ fire hose.

Two (2)

## **BUMPER COMPARTMENT DOOR**

Two (2) aluminum tread plate door for the front bumper compartment shall be supplied. The flat door shall have a stainless steel hinge at the rear and a latch to secure the compartment.

The passenger's side door shall be notched so the hose can be preconnected. The driver's side door shall be provided without a notch.

One (1)

## **EXHAUST SYSTEM**

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)

## **EXHAUST HEAT SHIELD**

One (1) heat shield shall be installed under the body in the areas where the exhaust system is routed.

One (1)

## **FRONT MUD FLAPS**

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

One (1)

## **REAR MUD FLAPS**

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

One (1)

## **RIGHT SIDE CAB STEP**

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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One (1)

## **CAB STEPS**

The existing cab steps on the International 4 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.

One (1)

## **CAB MOUNTED SLIDING TRAYS**

Two (2) slides out trays shall be provided under the rear seat base. The trays shall be accessible and pull out when the rear crew doors are open.

One (1)

## **AIR HOSE CONNECTION**

One (1) compressed air inlet fitting shall be provided for connection to an external air source to maintain the air brake pressure. The female quick connect fitting shall have a check valve installed to prevent air from escaping from the air storage tanks on the chassis.

The air inlet fitting shall be located on the driver's side cab exterior.

The air inlet shall be located in the driver's step area.

One (1)

## **AIR HOSE FITTING**

One (1) male quick connect fitting shall be provided for connection to a utility air hose. The air outlet fitting shall be located on the driver's side cab exterior.

The air outlet shall be located in the driver's step area.

One (1)

## **AIR OUTLET SHUTOFF VALVE**

One (1) shutoff valve designed to control the air outlet fitting shall be installed. The 1/4 turn valve shall be labeled accordingly.

The air shut off valve shall be located with the air supply fitting in the driver's step area.

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One (1)

## **PUMP AND PLUMBING SPECIFICATIONS**

One (1)

### **ROSENBAUER NH40 FIRE PUMP**

A Rosenbauer Model NH40 rear mounted fire pump shall be mounted and installed. The rear mounted combination normal and high pressure pump system shall have a rated capacity of 1000 GPM and shall meet all applicable sections of NFPA standards. The pump shall be constructed and mounted in accordance with the following specifications.

Pump shall deliver the percentage of rated discharge at pressures indicated below:

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

#### **Pump Body**

The pump shall incorporate a high pressure, three-stage pump. The high-pressure side shall be capable of developing 100 GPM at 600 PSI simultaneously while pumping the rated volume specified above.

The main pump body shall be easily removable without disturbing setting of the pump on the chassis or engine. The pump body is to be of high quality seawater resistant light alloy. All parts that come into contact with water shall be special treated light alloy or stainless steel.

The pump manufacturer shall test the pump for 10 minutes hydrostatically at a pressure of 500 PSIG. Hydrostatic certification by the pump manufacturer shall be provided.

#### **Impeller and Shaft**

The high-grade light alloy impellers shall be accurately balanced and mounted on a stainless steel pump shaft. The shaft shall be supported by three roller bearings; two located in the gearbox and one in the suction inlet. Bearings shall be protected from water and sediment by maintenance free self-adjusting mechanical seals.

#### **Pump Drive System**

Fire pump shall incorporate high strength helical gear drive single stage transmission. Pump drive system shall be with a heavy-duty PTO system bolted directly to the chassis transmission. There shall be a heavy-duty drive shaft furnished from the PTO to the midship pump transmission.

Two (2)

### **PUMP ANODE**

A replaceable corrosion-protection anode shall be provided for the fire pump.

Two (2) shall be provided, one for the intake side and the other for the discharge side of the pump.

One (1)

### **ENGINE/PUMP GOVERNOR**

The apparatus shall be equipped with one (1) Class 1 "Captain" engine/pump governor/throttle system. The OEM shall supply and install the unit directly to the Electronic Control Module (ECM) mounted on the engine. The "Captain" is to operate as a pressure sensing governor .

A special preset feature shall permit a predetermined pressure or RPM to be set. The preset shall be easily adjustable by the operator.

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One (1)

### **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-1039 data bus for its information and does not require any additional sensors to be mounted.

One (1)

### **PRIMER SYSTEM**

The fire pump primer system shall be a positive displacement double piston type that is driven by a belt from the input shaft of the fire pump. The pump shall be lubricated from an oil reservoir but shall not oil or discharge oil in the exhaust. Primers that use 12 volt electricity to drive the primer shall not be acceptable due to voltage loss on the electrical system.

The primer system shall be a "hands off" automatic style primer that, when engaged for drafting operations shall be able to be left unattended for the duration of the drafting operation. Once pump pressure of approximately 5 PSI is achieved, the primer shall disengage. When the pump pressure drops below 5 PSI the primer shall re-engage itself to re-prime the fire pump.

This feature adds to the safety of fire fighters by automatically keeping the pump primed and allows the pump operator to assist in other duties on the fire scene. Primers that do have this automatic feature will not be acceptable, no exceptions.

One (1)

### **FIRE PUMP SPLIT SHAFT DRIVESHAFTS AND INSTALLATION**

The mid-ship PTO driven 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.

### **PUMP SHIFT INDICATOR LIGHTS**

Fire pump shall be driven by a heavy duty 10 bolt PTO capable of enough torque to operate the fire pump at rated capacity for continuous duty. The PTO shall be approved by Allison for this type of service. The PTO shall be of a "Hot Shift" style capable of full capacity stationary pumping. Stationary pumping shall be done with chassis transmission in neutral. Pump engagement lights and safety interlock system for PTO driven pumps that are to be used for Stationary Pumping Only with the transmission in neutral shall be as follows:

- A "Pump Engaged" indicator light shall be provided both in the driving compartment and on the pump operator's panel to indicate that the pump shift has been successfully completed.
- An "OK to Pump" indicator light shall be provided in the driving compartment to indicate that the pump is engaged, the chassis transmission is in neutral, and the parking brake is engaged.
- A "Throttle Ready" indicator shall be provided at the pump operator's panel that is energized when the "OK to Pump" indicator is energized or when the chassis transmission is in neutral and the parking brake is engaged.
- An interlock system shall be provided to prevent advancement of the engine speed at the pump operators panel unless the chassis transmission is in neutral and the parking brake is engaged, or the apparatus is in "OK to Pump" mode.
- Controls to engage the PTO are to be in the cab, and easily accessible.

Switches to activate the high pressure side of the water pump and indicator lights showing when the high pressure side is activated shall be provided in the cab and at the rear pump panel.

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Manuals:

One (1) Two (2) manuals covering the fire pump transmission and fire pump shall be provided with the apparatus.

## **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.

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

## **HIGH ALTITUDE FIRE PUMP TEST**

The pump shall undergo special high altitude tests per applicable sections of NFPA standards, prior to delivery of the completed apparatus.

One (1) The high altitude pump testing certificate shall be furnished with the apparatus on delivery.

## **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)

## **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".

One (1)

## **FIRE PUMP COOLING**

The fire pump shall be equipped Hale Model TRV, thermal bypass cooling system. The system shall automatically dump water through a .375" discharge line to the ground when pump water temperature exceeds 120 degrees. The valve shall be equipped with an integral strainer and shall reset automatically.

One (1)

## **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

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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.

The heat exchanger shall be plumbed to the master drain valve. These lines shall be silicone hose and run inside plastic conduit.

One (1)

### **STAINLESS STEEL PUMP PLUMBING**

One (1)

### **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)

### **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 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.

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## **STAINLESS STEEL INTAKE MANIFOLD**

The suction manifold assembly shall be fabricated with Schedule #10 type 304 stainless steel. All threaded fittings shall be a minimum of Schedule 10 stainless steel. The suction manifold assembly shall have radiuses sweep elbows to minimize water turbulence into the suction volute. The suction manifold shall be welded and pressure tested prior to installation. The stainless steel manifold assembly shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.

The stainless steel manifold assembly shall have a ten (10) year warranty.

One (1)

## **STAINLESS STEEL DISCHARGE MANIFOLD**

The discharge manifold assembly shall be fabricated with Schedule #10 type 304 stainless steel. All threaded fittings shall be a minimum of Schedule 10 stainless steel. The discharge manifold assembly shall have radiuses sweep elbows to minimize water turbulence into the discharge header. The manifold shall be welded and pressure tested prior to installation. The stainless steel manifold assembly shall be attached to the pump intake volute with a heavy-duty, flexible Victaulic coupling.

The stainless steel manifold assembly shall have a ten (10) year warranty.

One (1)

## **FIRE PUMP MASTER DRAIN**

The fire pump plumbing system and fire pump shall be piped to a single pump panel mounted 'handwheel' type master pump drain assembly. The master drain valve shall be a bronze master drain with a rubber disc seal, a universal joint and a handwheel control on the pump panel. The master drain shall also provide for low point drainage of the fire pump and auxiliary devices.

## **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 for exact location.

The manifold drain shall be a Class 1 brand.

One (1)

## **PLUMBING SYSTEM**

The fire pump and plumbing system shall be painted by the fire apparatus manufacturer on completion of piping of the apparatus and prior to the installation on the apparatus chassis. The color shall be: apparatus color.

One (1)

## **HOSE THREADS**

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

One (1)

## **GATED 5" INTAKE -- REAR**

One (1) 5" gated suction intake shall be installed on rear pump panel to supply the fire pump from an external water supply. A manually operated butterfly valve with built in adjustable relief valve shall be provided on the intake. The valve shall be manually operated with a hand wheel control located adjacent to the intake connection.

The intake shall be provided with a 3/4" drain and bleeder valve, controlled at the base of the pump panel. An inlet fitting with 5" NST thread shall be provided, complete with a removable strainer screen.

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One (1)

One (1) 5" chrome plated cap shall be provided. The threads shall be NST and the cap shall be equipped long handles.

One (1)

### **5"NSTF Swivel x 4-1/2"NSTF Swivel lightweight Hydrant adapter**

One (1) TFT Model AA7H NT-NR adapter shall be provided.

One (1)

### **WATER TANK TO PUMP LINE**

One (1) 3" water tank to the rear mounted fire pump line shall be provided with a full flow quarter turn ball valve, 4" 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)

### **REMOTE TANK TO PUMP CONTROL SWITCH**

There shall be a dual control air actuated control for the tank to pump valve. One controller shall be located in the chassis cab and one at the rear pump panel.

Tank to pump valve controllers shall be located in both the chassis cab and at the rear pump panel. Lights shall be provided at both places to indicate when the valve is open.

One (1)

### **FIRE PUMP TO WATER TANK FILL LINE**

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)

One (1) manually operated pull rod, with quarter turn valve, with locking feature shall be provided on the specified discharge. The handle shall be equipped with color coded engraved type name plate.

One (1)

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

One (1)

### **ROSENBAUER FOAM SYSTEM -- PUMP PANEL& CAB CONTROLLED**

One (1) built in Rosenbauer Fix Mix foam system, suitable for all commercially available foaming agents, shall be incorporated into the construction of the Rosenbauer N/NH pump. The system shall provide a constant proportioning rate of 0.5% regardless of water pressure and volume. The NH pump Fix Mix system shall be capable of providing foam at high pressure.

The foam system shall be controlled from the pump panel and the chassis cab console.

Lights shall be provided in the cab and on the pump panel to indicate when the foam system is activated.

One (1)

### **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 on the pump panel with color coded "green" label.

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One (1)

### **FOAM LINE STRAINER**

One (1) strainer shall be installed in the foam line, with easily accessible and removable strainer provided. The strainer screen shall be suitable for all types of Class A and B foam concentrates.

One (1)

### **FOAM SYSTEM FLUSH SYSTEM -- SINGLE TANK**

One (1) single tank foam system shall have a flushing system installed with foam flushing capabilities. The system shall be provided with a three-way flush valve. A switch provided integral to the three-way valve will indicate when the valve is in the "FLUSH" position. The "FLUSH" position will provide fresh water flushing capabilities to prevent foam concentrate deterioration of the foam pump. When "FLUSH" is selected, the foam pump will only run for 10-seconds. All required flushing water check valves shall be provided with the single tank flush selector valve, per requirements of applicable NFPA standards.

A three-way bypass valve shall be provided on the discharge of the foam pump to permit the operation of the foam concentrate pump for test and calibration purposes without injecting foam concentrate into the water discharge. The bypass valve shall be capable of being panel mounted.

One (1)

### **REAR LEFT SIDE -- 2-1/2" GATED INTAKE**

One (1) 2-1/2" gated suction intake shall be installed on rear left side 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 brass, chrome plated brass, or stainless steel material.

The plumbing to the intake shall be with full flow flexible hose or piping with Victaulic couplings. The intake shall be equipped with a 3/4" drain and bleeder valve. A nameplate and removable screen shall be provided.

One (1)

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)

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)

### **2" DISCHARGE -- FRONT LEFT SIDE BUMPER**

One (1) 2" quarter turn ball valve discharge shall be installed at left side front bumper area with stainless steel or brass swivel outlet with 1-1/2" NST male threads. The valve control shall be on pump panel and a nameplate label provided at valve control area.

The plumbing shall be flexible hose with abrasion resistant support mountings.

One (1)

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

One (1)

One (1) manually operated pull rod, with quarter turn valve, with locking feature shall be provided on the specified discharge. The handle shall be equipped with color coded engraved type name plate.

One (1)

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

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.

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One (1)

Note: the hose connection for the front discharge shall be swivel type located above the front bumper deck level.

Two (2)

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

Two (2) 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.

One (1) driver's side 2-1/2" discharge shall be mounted below the hose bed. The other driver's side discharge shall be mounted on the rear pump panel.

Two (2)

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

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.

One (1)

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

The 2-1/2" discharge on the pump panel shall have the chrome plated cap and chain.

Two (2)

Two (2) manually operated pull rod, with quarter turn valve, with locking feature shall be provided on the specified discharge. The handle shall be equipped with color coded engraved type name plate.

Two (2)

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

Two (2)

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)

### **REAR RIGHT SIDE -- 2-1/2" DISCHARGE**

Two (2) 2-1/2" discharge shall be installed on the right 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.

One (1) passenger's side 2-1/2" discharge shall be mounted below the hose bed. The other passenger's side discharge shall be mounted on the rear pump panel.

Two (2)

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

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.

One (1)

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

The 2-1/2" discharge on the pump panel shall have the chrome plated cap and chain.

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Two (2)

Two (2) manually operated pull rod, with quarter turn valve, with locking feature shall be provided on the specified discharge. The handle shall be equipped with color coded engraved type name plate.

Two (2)

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

Two (2)

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)

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

The 2-1/2" NSTF x 1-1/2" NSTM adapters shall be provided for the two (2) 2-1/2" discharges located below the hose bed.

One (1)

### **FRONT BUMPER MONITOR DISCHARGE**

One (1) 2-1/2" discharge shall be piped to the front center bumper area with 2-1/2" NPT male threads. The quarter turn ball valve shall be controlled in the cab. The monitor shall be supplied by a flexible high pressure hose mounted with adequate support brackets and abrasion resistant mountings.

Low point drains shall be installed where necessary. A color coded nameplate label shall be provided.

One (1)

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

One (1)

### **CAB PRESSURE GAUGE**

One (1) 2-1/2" pressure gauge rated at 0-600 PSI shall be provided. The gauge shall include a color coded label and be installed in the chassis cab. The face of the gauge shall have a white dial with black letters.

The gauge shall be located in cab for pump and roll operation and plumbed to the high pressure side of the water pump.

One (1)

### **3" MONITOR DISCHARGE**

One (1) 3" discharge shall be piped to the top of the body with 3" IPT male threads provided. The pipe shall be equipped with Victaulic couplings (if necessary) and shall be properly secured to prevent movement when a monitor is attached. The quarter turn ball valve shall be controlled on pump panel.

A color coded nameplate label shall be provided adjacent the valve control handle.

The monitor piping shall be plumbed to the front of the hose bed area on the driver's side.

One (1)

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

One (1)

One (1) Akron valve equipped with an Akron #9303 12 volt electric motor actuator shall be provided on the specified 3" discharge. The valve control shall be push button type with position indicator lights provided. A color coded engraved type name plate installed over the valve control.

One (1)

The specified valve shall be an Akron 8800 Series three-inch (3") valve with a stainless ball.

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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.

One (1)

### **FRONT BUMPER MONITOR**

One (1) Akron "FireFox" #3463 electrically controlled remote monitor shall be furnished and installed on the front bumper of the apparatus. The monitor is to be an all electric single waterway monitor constructed of lightweight pyrolite.

The monitor shall have a fully enclosed 12-volt motor and gears with a manual override for both horizontal and vertical rotation and may be operated simultaneously. The vertical travel shall be from 45-degrees below to 90-degrees above horizontal with adjustable stops at -20 degrees and +45 degrees. The horizontal rotation shall be 320-degrees with adjustable stops at +-90-degrees.

The logic box shall include coated, solid state components to resist water corrosion. The control box shall control the vertical and horizontal rotation of the monitor and the pattern of the nozzle. The nozzle shall have a fixed or adjustable gallon age baffle and an electric flush feature.

The controls for the deck gun shall be mounted inside the chassis cab. There shall be a 3/4" automatic drain furnished in the supply line to the monitor.

The front bumper monitor shall be installed in the center of the front bumper extension.

One (1)

One (1) Akron "FireFox" model monitor shall provided and includes a weather-tight enclosure for the joystick controls suitable for mounting inside or outside the apparatus. The joystick control shall include a valve trigger.

Water Valve: ON/OFF  
Monitor: RIGHT/LEFT  
Monitor: UP/DOWN  
Pattern Control: STRAIGHT/FOG

One (1)

The Akron "FireFox" model monitor shall be supplied with a 2" NPT quick disconnect inlet for installation and engine maintenance on the cab forward trucks.

One (1)

### **1250 GPM REMOTE CONTROLLED MONITOR**

One (1) Task Force Tips Hurricane RC, model # XFIH-E11A remote controlled monitor shall be provided. The monitor shall be controlled by a monitor mounted switch panel with functions that control rotation, elevation and nozzle patterns.

The monitor shall have the following travel capabilities:

- . Full horizontal rotation with travel 225 degrees left and right of center
- . A full 180 degrees of vertical travel with stops at straight up and straight down
- . Field changeable rotation stops shall be provided at 45, 90 and 135 degrees left and right of center
- . Flow capability of 1250 GPM Maximum operating pressure of 200 PSI

The electrical controls for the monitor shall be waterproof and utilize current limiting and position encoders to protect the drive train at the ends of travel. Thirty feet of ultra flex robotic power cable shall be pre-wired to the monitor and include a unique cable guide for the motors. An electrical connection for a TFT remote control nozzle shall be provided. The monitor shall be equipped with large manual override handles for use in the event of power failure.

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For resistance to corrosion the monitor shall be constructed from hard coat anodized aluminum with a silver powder coat interior and exterior finish. A built in automatic drain designed to protect the monitor from freezing and a threaded port for an optional pressure gauge shall be provided.

The monitor shall be configured with a 3" ANSI 150 companion flange inlet and 2-1/2" male NH outlet.

The specified remote switch panel shall be located at the left pump panel.

The department is receiving a free remote control from TFT for this monitor. Please make sure that monitor is capable of being operated by the switch panel on the pump panel and by the remote control.

One (1)

### **BUMPER MONITOR NOZZLE**

The bumper monitor shall be equipped with a TFT B-TO-ERP remote controlled combination fog nozzle. The nozzle shall have a 12 volt electric motor to control the pattern of straight stream to wide fog. The nozzle shall have an automatic flow variable gallon age. The motor shall be totally enclosed and sealed for protection. The lightweight, nozzle shall have a 1-1/2" NST swivel inlet.

One (1)

### **REMOTE ELECTRIC MASTER STREAM NOZZLE**

One (1) Task Force Tips # M-ERP-NJ electric monitor nozzle rated at 1250 GPM electrically operated pattern control shall be provided. The nozzle design shall allow for straight stream through dense wide fog patterns.

The electric drive unit shall develop over 400 pounds of torque, be enclosed in waterproof cast aluminum housing and include a manual override device in the event the power source fails. The unit shall be compatible with 12 or 24 volt power systems and require no more than a 3 amp power draw and include a 60" connection cable.

For corrosion resistance and durability the nozzle and actuator shall be constructed from hard coat anodized aluminum alloy, include a protective rubber bumper with fog teeth, laser engraved serial number, and reflective labeling.

One (1)

### **REMOTE CONTROL TELESCOPING MONITOR PIPE**

Task Force Tips model # XGA38VL-RL 3" electrically telescoping waterway shall be installed. The waterway shall be capable of being lowered to deck level (or into a monitor well) for storage and transportation and shall be capable of being raised to an extended height of 18" using panel mounted switches. These switches shall control a 12 volt motor and be capable of moving the waterway in either the raised or lowered position while maintaining the ability to horizontally rotate the monitor device 360 degrees. The motor shall be weatherproof in design and have an accessible manual override control for use in the event power failure occurs. A 10' power cable shall be supplied for connection from the panel switches to the motor.

A sensor shall be located on the waterway that signals a 12 volt indicator light installed in the cab to illuminate to indicate that the monitor is raised.

The aluminum riser shall have a 3" waterway; hard coat anodized finish and be furnished with a 3" Victaulic inlet coupling and a TFT Code RLM male connection for a TFT remote control monitor with TFT Code RLF female inlet.

One (1)

### **ELECTRIC REWIND HOSE REEL**

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

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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 left side cab step compartment area.

### **ELECTRIC REWIND HOSE REEL**

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Two (2) The hose reel is to be mounted in right side cab step compartment area.

### **HOSE REEL REWIND SWITCH**

A push button hose reel rewind switch shall be installed to control the electric rewind hose reel. The exact location shall be determined at prior to construction.

One (1) Rewind switches shall be provided near the booster reel on each side of the cab.

### **1-1/2" HOSE REEL DISCHARGES**

Two (2) 1-1/2" discharges shall be provided and piped from the fire pump to the hose reels with flexible high pressure hose. The quarter turn ball valves shall be controlled on pump panel. Color coded engraved nameplate labels shall be provided near the valve control handle.

Two (2) A Class 1 automatic type 3/4" bleeder valve shall be installed on gated intakes and discharges larger than 1-1/2" in size.

Two (2) Two (2) manually operated pull rod, with quarter turn valve, with locking feature shall be provided on the specified discharge. The handle shall be equipped with color coded engraved type name plate.

Two (2) The control valves shall be located at each booster reel.

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

Two (2) **HOSE FOR REEL**

Two (2) Three (3) 50' foot lengths of 1" water hose (150') with pin lug couplings and 800 PSI working pressure shall be provided and mounted on the specified hose reel.

### **CAPTIVE HOSE ROLLERS**

Two (2) stainless steel four sided captive type roller assembly shall be provided. The location of the captive rollers shall be:

One (1) On the face of the reel compartment under the crew area of the cab, one each side.

### **FOAM PRO FOAM SYSTEM**

One (1) FoamPro part number S106-1600--02 electronic foam systems 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

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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.

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.

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## **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.

## **LOW-LEVEL TANK SENSORFOAM 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)

## **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 on the pump panel with color coded "green" label.

One (1)

## **FOAM LINE STRAINER**

One (1) strainer shall be installed in the foam line, with easily accessible and removable strainer provided. The strainer screen shall be suitable for all types of Class A and B foam concentrates.

One (1)

## **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

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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 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)

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

One (1)

### **FOAM 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 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.**

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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.

One (1)

### **FOAM TANK DRAIN -- UNDER TANK**

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

One (1)

### **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)

### **FOAM TANK GAUGE**

The apparatus shall be equipped with one (1) Class1 "Intelli-Tank" foam tank level gauge and shall be installed in the chassis cab. 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.

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- 3) Weather resistant connectors to connect to the digital display, to the pressure transducer and to the apparatus power.

One (1)

The foam tank gauge shall be the "mini" rocker switch style.

### **FOAM REFILL SYSTEM**

One (1) FoamPro Power-Fill, part number 3435-0117-12V, on-board 12 volt electronic, automatic foam concentrate refill system shall be provided. The system shall operate independently of the foam proportioner allowing simultaneous use.

The system shall be capable of handling Class A or Class B foam concentrates, emulsifiers, gels and decontamination concentrates. The apparatus shall be plumbed from the externally accessed intake/flush ports to the on board foam concentrate cell following the recommendations supplied by manufacturer.

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An external fill and flush connections shall be supplied with quick-connect, cam-lock fittings. The internal piping shall incorporate check valves to prevent backflow. The concentrate tank inlet shall be positioned to minimize agitation per manufacturer's recommendations. The refill operation shall be designed for direct measurement of concentrate level in tank. The foam concentrate refill system shall utilize the chassis electrical system as a power source and will activate when the master power switch is in the on position.

The system shall be capable of automatically stopping when the cell is full and shall include a manual override feature. The system shall be equipped with an electronic control that shall be installed on the pump panel. Incorporated within the control shall be a microprocessor that receives input from the system while controlling foam concentrate pump output. An all bronze three-way valve shall be included to allow the operator to flush the system after use. Valve control, intake and flush ports shall be located within the corresponding panel plate.

The system shall enable the operator to perform the following control and operational functions with status indicators for the refill operation:

1. Provide push-button start/stop control of foam refill
2. Solid green light advises operator concentrate cell is full
3. Flashing green indicates system is running
4. Green light off, system off
5. Allow override of "full tank" condition
6. Provide a means to flush the pump and intake piping

The system shall include a 12-volt electric motor driven, positive displacement concentrate pump. The pump shall deliver a minimum flow of 10 GPM (37.8 L/min) while operating at 20 PSI. The pump body shall be of all bronze construction while the other exposed components and piping shall be constructed of non-corrosive materials. The system shall draw a maximum of 38 amps at 12 volts.

A pump/motor solenoid shall be mounted to the base of the pump. It shall receive signals from the computer control display and power the 1/2 horsepower (0.4 Kw) electric motor that shall be directly coupled to the concentrate pump. The system shall receive readings when the concentrate tank is full and shall stop operation to prevent overflow.

Components of the complete refill system shall include:

1. Operator control and display with Weather-Pac connectors
2. Refill/flush quick-connect cam-lock fittings and cap
3. Check valves
4. Pump/motor assembly and solenoid
5. Strainer
6. Tank level switch
7. three-way fill/flush valve
8. Stainless steel pick-up wand and 6 feet of reinforced suction hose, inch in diameter to allow for maximum flow
9. Instruction label provided

An installation and operation manual shall be provided. A one (1) year warranty shall be provided by the refill system manufacturer.

One (1)

### **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

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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.

### 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.

Note: For fire fighter safety, an ASCO valve, part #8262G1-12V D/C and Solid State Advanced Controls, SSAC part # TDI 12D, (1-1023 seconds) shall be installed in the 2" discharge manifold after the foam system check valve to discharge trapped manifold water pressure upon pump shut down.

The Foam Pro 1600 foam system shall be plumbed to the front bumper discharge and two (2) rear 2-1/2" discharges located below the hose bed.

The FixMix foam system shall be plumbed to the front bumper discharge and both booster reels.

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One (1)

### **WATER TANK - TANK FILLS - QUICK DUMPS**

One (1)

### **WATER TANK - 500 GALLON**

The apparatus shall be equipped with a five-hundred (500) gallon polypropylene water tank. The tank shall be equipped with a four-inch (4") overflow pipe.

One (1)

### **WATER TANK FILL TOWER**

A fill tower measuring approximately 10" x 10" square shall be provided on the water tank up to and including 500 gallons total capacity.

One (1)

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 a minimum of 10" x 10" x 3" deep and 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 a 3.0" IPT schedule 80 female flange with plug, 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)

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

One (1)

### **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 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.

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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.

One (1)

### **REAR MOUNT PUMP ENCLOSURE**

The rear mount pump enclosure, rear pump, and plumbing installation shall be contained entirely in the rear compartment and shall be supported from the rear body sub-structure. The pump, plumbing, and controls shall be totally enclosed in the rear compartment to contain the system inside the body.

Nameplates labels shall be furnished for the discharges and intakes and for other controls and indicators.

Located within the module shall be:

1. Electric primer.
2. Pump area service lights.
3. All gauge piping and hoses.
4. Intake dump valve.
5. Pressure control device and throttle control.
6. Pump engagement lights.
7. Engine instruments.
8. Master intake and discharge gauges.
9. Tank fill control.
10. Tank-to-pump control.

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One (1)

## **PUMP PANEL LOCATION -- CENTER REAR**

The operator's instrument panel for the Rosenbauer rear mount pump shall be located at the rear center of the apparatus body.

One (1)

## **PUMP PANEL ROLL-UP DOOR -- REAR CENTER**

The rear mount operator's panel shall be located on the rear of the apparatus body. A roll-up style compartment door shall be provided for the door opening.

One (1)

## **REAR MOUNT PUMP AND PLUMBING ACCESS**

The rear mount pump enclosure and plumbing area shall be accessible through removable panels, with stainless steel bolts and welded nuts or nut-serts in rear side compartment walls.

One (1)

## **PUMP PANEL -- CENTER REAR MOUNT**

The pump operator's instrument panel for the rear mount pump shall be located at the rear center of the apparatus body.

One (1)

## **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)

## **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)

## **REAR MOUNT PUMP PANEL LIGHTS**

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

One (1)

## **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)

## **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.

## MARIPOSA PUD, CA

One (1)

### **TEST TAPS**

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

One (1)

### **PUMP HOUR METER**

One (1) pump hour meter shall be provided on the operators pump panel.

One (1)

### **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.

One (1)

### **FOUR LIGHT WATER TANK GAUGE**

The apparatus shall be equipped with one (1) Class1 "Intelli-Tank" water tank level gauge and shall be installed in the chassis cab. 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.

The water tank gauge shall be the "mini" rocker switch style.

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## **APPARATUS BODY SPECIFICATIONS**

One (1)

### **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)

The hose bed shall be specially designed and engineered per the hose load requirements of the Fire Department apparatus committee.

The hose bed shall be configured to hold the following amount of hose if possible:

A single lay of 2-1/2" DJ hose to be provided next to the side sheet on the driver's side.

200 feet of 1-3/4 DJ fire hose to be provided next to the side sheet on the passenger's side.

600 feet of 4" DJ fire hose and 500 feet of 2-1/2" DJ fire hose shall be provided in the remaining portion of the hose bed if possible. If not possible, reduce the amount of 4" fire hose and please advise.

Four (4)

### **ALUMINUM HOSEBED DIVIDER**

Four (4) adjustable Hosebed divider constructed of .250" aluminum shall be installed on the apparatus.

One (1) divider shall be located at the far driver's side of the hose bed next to one lay of 2-1/2" DJ hose.

One (1) divider shall be located at the far passenger's side of the hose bed next to the 1-3/4" DJ hose.

One (1) fixed divider shall be located in the center of the hose bed for support to the hose bed covers.

One (1) hose bed divider shall be located as necessary to separate the specified 4" supply hose from the 2-1/2" supply hose.

Please see 29-10-8100 for required hose bed capacity and amounts of required hose.

One (1)

### **ALUMINUM HOSEBED COVER SINGLE AXLE**

The Hosebed shall be equipped with a reinforced hinged .125" aluminum diamond plate cover. 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 driver's side hose bed cover shall be notched to allow use of monitor without raising hose bed cover.

One (1)

### **ALUMINUM HOSEBED COVER SINGLE AXLE**

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. Lift up handles shall be installed on each hose cover.

One (1)

### **HOSEBED LIGHTS**

Two (2) lights shall be recessed into the underside of the hinged aluminum Hosebed 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.

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One (1)

## **REAR VINYL FLAPS FOR ALUMINUM COVER**

There shall be a vinyl flaps attached to each aluminum Hosebed cover. The vinyl flaps shall cover the area on the rear of the Hosebed 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 end flaps to be red.

One (1)

## **SLIDE OUT LADDER MOUNTINGS IN HOSEBED**

The ladders shall be stored in the hosebed in a full width enclosed compartment. The area shall house three (3) sets of dual ladder slide in tracks to store specified ladders in a horizontal position. The mounting system shall be equipped with fiberglass angles and stop at front of ladders.

The specified 3 section 24' ladder and the 14' roof ladder will be stored in the hose bed. The 10' folding attic ladder will be mounted to the passenger's side exterior of the hose bed.

One (1)

## **LADDER SOURCE**

New ground ladders shall be provided by the body builder.

Two (2)

## **PIKE POLE MOUNTING BRACKET**

Two (2) aluminum tubes shall be provided for pike pole mounting. The tube shall have a 2-1/4" interior diameter and shall be mounted on the outside of the apparatus body.

The pike pole tubes shall be mounted on top of the compartments and next to the hose bed sides. There shall be one (1) each side.

Two (2)

## **PIKE POLE SOURCE**

The pike poles shall be provided by the body builder.

Two (2)

## **HARD SUCTION MOUNTING**

Two (2) horizontally mounted aluminum hard suction hose tray with spring loaded hose clamps shall be provided above the left side body compartments.

Two (2)

## **SUCTION HOSE SOURCE**

New suction hose shall be provided by the body builder.

One (1)

## **HARD SUCTION MOUNTING**

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

One (1)

## **SUCTION HOSE SOURCE**

New suction hose shall be provided by the body builder.

One (1)

## **ALUMINUM BODY CONFIGURATION**

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One (1)

### **BODY WIDTH**

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

One (1)

### **COMPARTMENT DEPTH**

The side compartment on the pumper body shall have the maximum available height and depth dimensions. These dimensions shall remain consistent for the full height and depth of the compartment.

One (1)

### **HOSEBED WIDTH**

The width of the pumper body hosebed shall be 74".

One (1)

### **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.

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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.

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

One (1)

### **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.

One (1)

### **GALVANIZED SUB-FRAME**

The apparatus body subframe 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 subframe and sides of the water tank cradle. Subframe cross members shall be fabricated with three inch (3") 3.4 pound per foot heavy steel channel cross members welded to the longitudinal body subframe sides and the full length frame pads.

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

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

The rear subframe 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 subframe channel liners at the rear.

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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 subframe rails.

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

This steel subframe 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)

### **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 subframe (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 subframe; 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.

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.

One (1)

### **POLISHED COMPARTMENT TOP WELDS**

The compartment top welds to be polished.

One (1)

### **SINGLE AXLE WHEEL WELL LINER AND FENDERETTES**

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

## MARIPOSA PUD, CA

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.

One (1)

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.

### **BODY CONFIGURATION**

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

The rear portion of the body behind the rear wheels shall be raised 4" to increase the rear angle of departure.

One (1)

### **LEFT SIDE BODY COMPARTMENTS**

The left side body compartmentation shall be as follows:

One (1)

### **COMPARTMENT HEIGHT**

The left side body compartments shall be 63" high.

One (1)

### **LEFT FRONT COMPARTMENT**

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

The compartment shall be equipped with the following items:

The upper portion of the L1 compartment shall be shallow to accommodate the specified Extenda-Gun and monitor piping and electrical equipment.

The back wall in the upper portion shall have a removable panel for access to the deck gun plumbing if service is required.

One (1)

### **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.

Two (2)

### **ADJUSTABLE SHELF**

Two (2) adjustable shelves up shall be constructed of .125" thick smooth aluminum plate and be mounted in a compartment with bolt on aluminum shelf brackets.

One (1) shelf shall be located in the full depth portion of the compartment and one (1) shelf shall be located in the shallow upper portion of the compartment.

One (1)

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### **COMPARTMENT LIGHTS**

All side exterior equipment compartments shall be provided one (1) Class 1 STL Super Bright Krystal-Lite sealed and weather tight clear compartment lights in each compartment.

Compartment shelves shall be capable of being moved up or down without having to remove or relocate the compartment lights. No Exception.

## MARIPOSA PUD, CA

One (1)

### **COMPARTMENT LIGHT SWITCH**

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

One (1)

### **LEFT OVERWHEEL COMPARTMENT**

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with a single hinged lift up door.

The compartment shall be equipped with the following:

One (1)

### **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)

### **ADJUSTABLE SHELF**

One (1) adjustable shelf up shall be constructed of .125" thick smooth aluminum plate and be mounted in a compartment with bolt on aluminum shelf brackets.

One (1)

### **COMPARTMENT LIGHTS**

All side exterior equipment compartments shall be provided one (1) Class 1 STL Super Bright Krystal-Lite sealed and weather tight clear compartment lights in each compartment.

Compartment shelves shall be capable of being moved up or down without having to remove or relocate the compartment lights. No Exception.

One (1)

### **COMPARTMENT LIGHT SWITCH**

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

One (1)

### **LEFT REAR COMPARTMENT**

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with full height double hinged doors.

The compartment shall be equipped with the following:

One (1)

### **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.

Two (2)

### **ADJUSTABLE SHELF**

Two (2) adjustable shelves up shall be constructed of .125" thick smooth aluminum plate and be mounted in a compartment with bolt on aluminum shelf brackets.

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One (1)

## **500# ROLLOUT TRAY**

One (1) rollout equipment tray shall be installed in a standard depth compartment. The 500# rated tracks shall have roller bearings. The tray shall be constructed of .188" smooth aluminum plate, fabricated with four 3" sides.

The unit shall roll fully out of the compartment, with a gas operator to hold tray in both the "in and out" positions.

One (1)  
LA-07-0550

## **COMPARTMENT LIGHTS**

All side exterior equipment compartments shall be provided one (1) Class 1 STL Super Bright Krystal-Lite sealed and weather tight clear compartment lights in each compartment.

Compartment shelves shall be capable of being moved up or down without having to remove or relocate the compartment lights. No Exception.

One (1)

## **COMPARTMENT LIGHT SWITCH**

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

One (1)

## **RIGHT SIDE BODY COMPARTMENTS**

The right side body compartmentation shall be as follows:

One (1)

## **COMPARTMENT HEIGHT**

The right side body compartments shall be 63" high.

One (1)

## **RIGHT FRONT COMPARTMENT**

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

The compartment shall be equipped with the following:

One (1)

## **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)

## **ROLL-OUT ALUMINUM TOOL BOARD**

One (1) roll-out vertical tool board assembly constructed of .188" smooth aluminum shall be provided. The panel shall be mounted on 500# capacity slide tracks, so that it may fully slide in and out of the compartment with a device for holding it in the "in" and "out" positions.

The tool board shall have a hand hole cut-out to accommodate a gloved hand.

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One (1)  
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## **COMPARTMENT LIGHTS**

All side exterior equipment compartments shall be provided one (1) Class 1 STL Super Bright Krystal-Lite sealed and weather tight clear compartment lights in each compartment.

Compartment shelves shall be capable of being moved up or down without having to remove or relocate the compartment lights. No Exception.

One (1)

## **COMPARTMENT LIGHT SWITCH**

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

One (1)

## **RIGHT HIGH SIDE COMPARTMENTS**

There shall be one (1) compartment above the rear wheels. The compartment shall be equipped with a single hinged lift up door.

The compartment shall be equipped with the following:

One (1)

## **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.

The unistrut shall be mounted to the back wall of the compartment for the specified SCBA mounting brackets.

One (1)

## **COMPARTMENT LIGHTS**

All side exterior equipment compartments shall be provided one (1) Class 1 STL Super Bright Krystal-Lite sealed and weather tight clear compartment lights in each compartment.

Compartment shelves shall be capable of being moved up or down without having to remove or relocate the compartment lights. No Exception.

One (1)

## **COMPARTMENT LIGHT SWITCH**

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

Four (4)

## **SCBA MOUNTING BRACKET**

Four (4) Zico 30 minute SCBA air pack mounting shall be installed in the specified compartment. The mounting shall have a spring tension bracket and safety strap included.

The specified SCBA brackets shall fit 30 min. Survivair bottles.

Four (4) brackets shall be mounted in the compartment.

One (1) bracket shall be mounted on the forward facing and rear facing walls of the compartment. Two (2) brackets shall be mounted on the back wall of the compartment.

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One (1)

## **RIGHT REAR COMPARTMENT**

There shall be one (1) full height compartment located behind the rear wheels. The compartment shall be equipped with full height double hinged doors.

The compartment shall be equipped with the following:

One (1)

## **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.

Two (2)

## **ADJUSTABLE SHELF**

Two (2) adjustable shelves up shall be constructed of .125" thick smooth aluminum plate and be mounted in a compartment with bolt on aluminum shelf brackets.

One (1)

## **500# ROLLOUT TRAY**

One (1) rollout equipment tray shall be installed in a standard depth compartment. The 500# rated tracks shall have roller bearings. The tray shall be constructed of .188" smooth aluminum plate, fabricated with four 3" sides.

The unit shall roll fully out of the compartment, with a gas operator to hold tray in both the "in and out" positions.

The slide out tray shall be provided for the specified generator.

One (1)

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## **COMPARTMENT LIGHTS**

All side exterior equipment compartments shall be provided one (1) Class 1 STL Super Bright Krystal-Lite sealed and weather tight clear compartment lights in each compartment.

Compartment shelves shall be capable of being moved up or down without having to remove or relocate the compartment lights. No Exception.

One (1)

## **COMPARTMENT LIGHT SWITCH**

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

One (1)

LL-09-9100

## **REAR BODY CONFIGURATION**

The rear of the apparatus body shall be of the flat back design.

The rear portion of the body behind the rear wheels shall be raised 4" to increase the rear angle of departure.

One (1)

## **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.

# MARIPOSA PUD, CA

One (1)

## **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.

One (1)

## **REAR STEP - 12" BOLT-ON**

A 12" deep step 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 rear step area and compartments behind the rear wheels shall be raised 4" higher than the front portion of the body for additional road clearance and a greater angle of departure.

One (1)

## **FOLDING STEP LEFT REAR**

Three (3) 8" square folding steps of die cast aluminum with stainless steel springs 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.

One (1)

## **FOLDING STEP RIGHT REAR**

Three (3) 8" square folding steps of die cast aluminum with stainless steel springs 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.

One (1)

## **I-ZONE BRACKETS**

There shall be two (2) easily removable or flip out I-Zone brackets mounted on the rear of the apparatus, one on each side. The brackets shall be designed with adequate reinforcement to eliminate flexing of the body (oil canning) and not to interfere with any rear facing lights when carrying hose.

The exact design and mounting location shall be discussed at the pre-construction conference.

Provide the Diamond Springs type I-Zone brackets. Please see picture in production file for what was supplied.

The brackets shall be mounted on each side of the rear pump panel best fit so the department can fold hose across the rear of the apparatus.

One (1)

## **FULL WIDTH FOLD DOWN REAR STEP**

A full width, fold down rear step shall be furnished on the rear of the apparatus. The fold down step shall have a specially designed off set, eccentric type bracket and be attached with stainless steel fasteners on each side. The step shall not protrude past the rear tailboard when in the upper stowed position. In the down position, the step shall reduce the height of the first step approximately 8"-10". Step shall have slip resistant surface.

One (1)

## **HANDRAIL REAR STEP**

Two (2) extruded aluminum non-slip handrails, approximately 48" in length, shall be provided and mounted on the rear of the apparatus, one (1) on each side of the body.

One (1)

## **COMMON BODY COMPONENTS**

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One (1)

## **EXTRUDED ALUMINUM RUB RAILS**

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.

Four (4)

## **AIR CYLINDER COMPARTMENT IN WHEELWELL**

Four (4) 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)

## **WHEEL WELL COMPARTMENT LOCATION**

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

One (1)

## **WHEEL WELL COMPARTMENT LOCATION**

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

One (1)

## **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)

## **WHEEL WELL COMPARTMENT LOCATION**

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

Seven (7)

## **COMPARTMENT LOUVER**

Seven (7) louvers with filter shall be installed on the back wall of the specified compartments.

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## **12 – VOLT ELECTRICAL SPECIFICATIONS**

One (1)

### **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.

Any 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.

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 at least every two feet (2') 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.

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- 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.
- 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 tests 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.

#### 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

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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)

### ELECTRICAL LOAD MANAGEMENT SYSTEM

One (1) Class 1 Total System Manager (TSM) shall be installed to control the 12 volt electrical system in the commercial cab. This system shall automatically shed excess loads in a preprogrammed fashion when system voltage levels become compromised. When proper voltage resumes the items that were turned off will re-activate.

The high idle mode shall automatically engage upon a drop in voltage provided that the parking brake is applied and the pump is not in gear. When proper voltage resumes the normal idle will resume.

One (1)

### FAST IDLE CONTROL

One (1) Kussmaul model #091-84-005 engine idle control shall be installed on the apparatus. The control shall be housed in a rugged aluminum enclosure and is designed for easy mounting. Two miniature pushbutton switches are provided on the front panel. One switch turns the output "ON" while the other turns it "OFF". A single LED indicates that the control is in the high idle mode. Interlock inputs from the park neutral switch or the brake pedal switch lock out the high idle function while the vehicle is underway.

The output operates a solenoid valve which may be used to control vacuum to an actuator that advances the throttle. Alternatively the output can operate a relay to couple this control to an electronic engine control. The Engine Idler Control is designed to be completely interchangeable with competitive devices.

One (1)

### CAB CONSOLE AND ROCKER SWITCH PANEL

One (1) custom fabricated electrical console and enclosure shall be provided to house cab mounted electrical switching devices and equipment. The console shall be located between the driver's and the officer's seating positions and shall include individual rocker switches in a removable panel. The enclosure shall be constructed of smooth aluminum with a hinged top. Dimensions shall be approximately 18" wide x 18 "high x 24" fronts to rear.

In addition to the electrical switches and pump controls, the design of the center console shall include as many map pockets as possible in the remaining area for 3-ring style binders.

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One (1)

## **BATTERY SYSTEM**

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**

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**

One (1) Kussmaul Autocharge 1000 model #091-56-12, 18 amp fully automatic high output 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.

The charger shall have a built in 3-amp battery saver for rechargeable hand lights.

One (1)

## **SHORE POWER RECEPTACLE**

One (1) Kussmaul 30 amp "super 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.

The shoreline receptacle shall be located in the driver's step area.

One (1)

## **COOLANT HEATER SWITCH**

One (1) coolant heater shall be supplied with the chassis to assist with cold weather engine starting.

Block heater is to be powered through the shoreline connection. There shall be a switch on the center console to disable block heater when not needed.

Block heater is to be powered through the shoreline connection. There shall be a switch on the center console to disable block heater when not needed.

One (1)

## **ALTERNATOR**

The alternator shall be supplied the chassis manufacturer.

One (1)

## **AIR HORN**

One (1) 24.5" Stutter tone chrome plated air horn shall be recess mounted into the left side of the front bumper. 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.

One (1)

## **AIR HORN FOOT SWITCH**

One (1) foot switch shall be installed to activate the air horn system on the driver's side of the floor.

One (1)

## **AIR HORN FOOT SWITCH**

One (1) foot switch shall be installed to activate the air horn system on the officer's side of the floor.

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Two (2)

## **ENGINE COMPARTMENT LIGHT**

Two (2) 12 volt incandescent light with switch shall be mounted in the engine enclosure.

One (1)

## **PUMP ENCLOSURE LIGHTS**

One (1) incandescent work light shall be provided in the pump enclosure. The control switch shall mount on the light head.

One (1)

## **BACK-UP ALARM**

One (1) Ecco model #SA-907 "Smart Alarm" 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**

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 specified map light shall be installed on the officer's side of the dash.

One (1)

## **HEADLIGHT FLASHER**

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.

Two (2)

## **RADIO ANTENNA**

Two (2) radio antennas shall be supplied by the customer and installed on the apparatus. The location shall be determined by the customer.

A radio antenna and cell phone antenna will be supplied by the fire department. The radio antenna shall be mounted in the center of the cab roof. The cell phone antenna shall be mounted behind the light bar on the passenger's side of the cab.

Both cables shall be run to inside the center console. The radio antenna shall be connected to the fire department supplied radio.

One (1)

## **RADIO**

One (1) fire radio remote head shall be supplied by the customer and installed on the apparatus. The location shall be determined by the customer.

The radio shall be a Kenwood TK-7908K, VHF 254 Ch. 45 watt remote.

The remote head shall be installed in the center console.

One (1)

## **MARKER LIGHTS**

LED marker lights shall be installed on the vehicle in conformance to the Department of Transportation requirements.

Four (4) lights shall be mounted to indicate the overall width of the vehicle near the top as practical. One light shall be side facing each side and one light shall be rear facing each side.

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Three (3) lights shall be recessed in the rear step and as close to the center line as practical.

Four (4) lights shall be mounted to indicate the overall width of the vehicle near the top as practical. One light shall be side facing each side and one light shall be rear facing each side.

One (1)

### **LICENSE PLATE BRACKET**

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**

Two (2) Whelen LED tail/brake lights shall be provided. The rectangular light shall be red.

The taillights are to be Whelen model 60

One (1)

### **TURN SIGNALS**

Two (2) Whelen turn signals shall be provided. The rectangular LED light shall be 4" x 6" in dimension.

One (1)

### **BACKUP LIGHTS**

Two (2) Whelen Series 600, halogen backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 4" x 6" and the lens color shall be clear.

One (1)

### **FOUR LIGHT BEZEL**

Two (2) tail light cluster bezels shall be supplied. Each bezel shall be designed to hold the specified rear lights located at the lower rear corners of the body.

One (1)

### **CAB GROUND LIGHTS**

Two (2) incandescent ground lights shall be installed under the four (4) cab doors.

One (1)

### **GROUND LIGHT SWITCH**

One (1) ground light switch shall be installed and wired to the cab door switches. The ground lights shall automatically activate when the cab door switch is applied.

One (1)

### **REAR STEP GROUND LIGHTS**

Two (2) incandescent ground lights shall be installed under rear step of the apparatus.

One (1)

### **GROUND LIGHT SWITCH**

One (1) ground 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.

Two (2)

### **STEP LIGHT**

Two (2) incandescent steps light with clear lens shall be installed on the rear step of the apparatus body.

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Two (2)

## **STEP/WALKWAY LIGHT SWITCH**

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.

Four (4)

## **SCENE LIGHT**

Four (4) Weldon Series 2010 7" x 8" halogen scene light shall be installed. A switch labeled for the scene light location shall be provided in the cab.

One (1)

## **SCENE LIGHT LOCATION**

One (1) scene light shall be located on the left side of the apparatus body.

The scene light shall be mounted at the top of the body and as far forward as possible.

One (1)

## **SCENE LIGHT LOCATION**

One (1) scene light shall be located on the right side of the apparatus body.

The scene light shall be mounted at the top of the body and as far forward as possible.

Two (2)

## **SCENE LIGHT LOCATION**

Two (2) scene light shall be located on the rear of the apparatus body.

Two (2) scene lights shall be provided one mounted on each side of the rear of the body and as high as possible.

Four (4)

## **SCENE LIGHT**

Four (4) Weldon scene light with an angled stand off bezel shall be installed. A switch labeled for the scene light location shall be provided in the cab.

One (1)

## **SCENE LIGHT SWITCH**

One (1) scene light switch shall be installed on the cab dash to activate left side scene lights upon engagement.

One (1)

## **SCENE LIGHT SWITCH**

One (1) scene light switch shall be installed on the cab dash to activate right side scene lights upon engagement.

One (1)

## **SCENE LIGHT SWITCH**

One (1) scene light switch shall be installed on the cab dash to activate rear scene lights upon engagement.

One (1)

## **DOOR OPEN/HAZARD WARNING LIGHT**

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

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One (1)

## **DOOR OPEN/HAZARD WARNING ALARM**

A door open/hazard warning alarm shall be installed. The audible alarm shall activate when an open door is detected upon release of the parking brake. The alarm shall have a distinct noise to avoid conflict with other cab mounted alarms.

One (1)

## **ELECTRIC SIREN AND CONTROL**

One (1) Whelen model #WS-295HFS2 electronic siren shall be mounted in the cab. This unit shall feature an electronic air horn, wail, yelp, hi-lo and shall have a hard wired PA microphone.

One (1)

## **SPEAKER**

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

One (1)

## **SPEAKER LOCATION**

The siren speaker shall be installed on the apparatus bumper.

One (1)

## **SIREN CONTROL**

One (1) electronic switch shall be provided integrally with the apparatus' horn to activate the siren.

One (1)

## **EMERGENCY LIGHTING PACKAGES**

One (1)

## **LIGHTBAR**

One (1) Code 3 Model #2169NFPA2 light bars shall be installed on the apparatus cab roof. The LED X2100 Series light bar shall be 69" in length. The lens colors shall be red and clear.

One (1)

## **LIGHTBAR OPTION**

One (1) steady burn RED light shall be installed in the light bar to meet California Highway Department requirements.

Two (2)

## **UPPER REAR WARNING LIGHTS**

Two (2) pair of Code 3 series 65 red LED warning lights shall be installed on the upper corners of the rear body. The dimensions of the lights shall be 4" x 6".

One pair shall be side facing and the second pair shall be side facing at the rear of the apparatus body.

All rear upper warning lights shall be red except the rear facing one on the Driver's side.

All warning lights shall be switched by one (1) Master Switch and the Amber upper rear facing light on the driver's side shall have a separate switch to activate it separately when desired.

One (1)

## **LOWER FRONT WARNING LIGHTS**

One (1) pair of Whelen model #600 red LED warning lights shall be installed. The dimensions of the lights shall be 4" x 6".

The lights to be model 60R000RR LED and have a separate switch on the cab console.

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One (1)

### **CHROME BEZELS**

There shall be chrome bezels supplied and installed on the warning lights.

One (1)

### **INTERSECTION WARNING LIGHTS**

One (1) pair of Whelen model #600 red LED warning lights shall be installed on the side of the front bumper. The dimensions of the lights shall be 4" x 6".

One (1)

### **CHROME BEZELS**

There shall be chrome bezels supplied and installed on the warning lights.

One (1)

### **LOWER MID-BODY WARNING LIGHTS**

One (1) pair of Whelen model #600 red LED warning lights shall be installed on the side of the mid-body. The dimensions of the lights shall be 4" x 6".

The lights shall be installed behind the rear wheels, one each side in the fender area.

One (1)

### **CHROME BEZELS**

There shall be chrome bezels supplied and installed on the warning lights.

One (1)

### **LOWER REAR SIDE WARNING LIGHTS**

One (1) pair of Whelen model #600 red LED warning lights shall be installed on the lower side of the rear body. The dimensions of the lights shall be 4" x 6".

The lights shall be located above the rear step as shown on the production drawing.

One (1)

### **LOWER REAR WARNING LIGHTS**

One (1) pair of Whelen model #600 red LED warning lights shall be installed on the lower corners of the rear body. The dimensions of the lights shall be 4" x 6".

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One (1)

## **BODY PAINT - CAB PAINT - LETTERING - STRIPING**

One (1)

## **CHASSIS PAINT**

The commercial chassis shall be painted by the chassis supplier.

One (1)

## **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 panels.

The body and all parts shall be thoroughly washed with 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 caulking.

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

One (1)

## **INTERIOR COMPARTMENT FINISH**

Six (6) apparatus side compartment interiors are to be painted with a spatter finish material. The compartments shall be cleaned with a grease remover, and then the surface sanded and prepared for painting. The compartment shall be provided with two (2) coats of white epoxy. The compartments are then coated with a splatter paint top coat.

Compartment interiors that are wrinkle finished or are topcoat web painted do not meet the intent or durability of this requirement and are not acceptable.

One (1)

## **ALUMINUM WHEELS**

The vehicle shall have polished aluminum wheels supplied with the chassis. The one-piece wheels shall be forged from corrosion resistant aluminum alloy.

One (1)

## **TOUCH-UP PAINT**

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

One (1)

## **LETTERING WARRANTY**

Rosenbauer America, LLC warrants to the original purchaser only, that the lettering and striping, installed by Rosenbauer America, LLC, will remain free from defects for a period of one (1) year under normal use.

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

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to misuse, negligence, or accident. If Rosenbauer America, LLC elects to repair this item, 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 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.

One (1)

## **SIMULATED GOLD LEAF LETTERING**

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.

Front Cab Doors: Lettering to be Gold Mylar with engine turn finish like one of the pictures in the production file. The layout to be like the picture showing the lettering on the door stating Mariposa Public Utility District and as below. The font style and shading to be like the pictures showing the lettering on the California City pictures.

4" Arched "MARIPOSA"  
2.25" Straight: "PUBLIC"  
2.25" Arched "UTILITY DISTRICT"

Rear Cab Doors: Install customer supplied decals centered above specified striping.

Compartments L1 and R1: Same font style and shading as front cab doors. 4" Gold Mylar with Engine Turned finish. Lettering to be located below specified striping and centered on compartment doors. "ENGINE 22"

Front Bumper: See photo of front view of California City truck. Lettering to be 5" Reflective white with Black Border:

Driver's Side bumper area to say: "E-22"  
Passenger's Side bumper area to say: "MRI"

Compartments R3 & L3: Same Font and Style as front bumper.  
5" White Reflective with Black Border. The location of the lettering to be 2" above bottom edge of door and towards the rear of door and say: "MRI".

Two (2)

## **INSTALL CUSTOMER SUPPLIED DECALS**

Factory installation of the purchaser supplied decals shall be provided as specified.

One (1)

## **REFLECTIVE STRIPING**

A 1" x 4" x 1" wide 3M brand Scotchlite reflective multi-stripe shall be affixed to the perimeter of the vehicle. There shall be a 1" gap between each of the stripes. Striping shall conform to applicable NFPA 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 striping.

The striping shall be applied in a large "Z" pattern.

White reflective striping shall be provided on the interior of the cab doors where space permits to meet NFPA 1901 standards.

Exterior White Reflective Striping:

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The specified striping will be placed on the cab doors as low as space permits. The striping will continue onto the apparatus body at the same height. At compartments L1 and R1, the stripe will angle up and to the rear until enough height is gained in order to clear door latches on the compartments. It will then continue straight all the way to the rear of the body. The striping will also be placed on the rear roll up door to match the height on the sides of the apparatus.

The striping to be located basically in the same location as shown in the California City truck but be 1" x 4" x 1" instead of the 4" shown and be all white.

One (1)

### **COLOR OF STRIPING MATERIAL**

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

One (1)

### **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)

A pair of heavy-duty aluminum wheel chocks shall be provided and mounted in underbody slide-out mounting brackets as directed by the fire department.

The chock blocks shall be Zico model # AC32.

The wheel chocks will be mounted behind the rear wheels one (1) each side below the body.

One (1)

### **ROOF LADDER**

One (1) Alco-Lite Model PRL-12, 12 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)

### **EXTENSION LADDER**

One (1) Alco-Lite Model PEL-3, 24 foot three (3) section aluminum extension ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA standards.

One (1)

### **FOLDING LADDER**

One (1) Duo Safety Model 585-A, 10 foot folding aluminum ladder shall be provided on the apparatus. The ladder shall meet or exceed all the latest NFPA Standards.

One (1)

The specified folding attic ladder shall be mounted on the Passenger's exterior side of the hose bed.

### **PIKE POLE**

One (1) 6' pike pole with round handle shall be provided. The pike pole shall be of fiberglass construction.

One (1)

### **PIKE POLE**

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

Three (3)

### **SUCTION HOSE**

Three (3) 3.0" x 10 foot length of Kochek PVC flexible suction hose shall be supplied. The suction hose shall have light weight couplings provided.

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Three (3)

### **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.

The couplings shall be 2-1/2" NST.

One (1)

### **STRAINER**

One (1) Kochek Model BS25C 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 2.5" NST female rocker lug coupling.

One (1)

### **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)

### **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)

### **ALUMINUM BODY WARRANTY - TEN 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 TEN (10) years.

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

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 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.

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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.

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### **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.

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### **COMPLETE PRINTED MANUAL**

**ROSENBAUER** shall provide with the vehicle upon delivery, two (2) complete delivery manuals. These manuals shall be in notebook type binders, 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