

Rosenbauer – Central States Fire Apparatus, LLC

CHASSIS

One (1)

INTERNATIONAL CHASSIS

An International 4-door chassis per the attached specifications located in the chassis section of this binder shall be furnished.

CHASSIS ADDITIONS, MODIFICATIONS AND REQUIREMENTS

One (1)

10-02-1100

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)

10-02-1200

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.

One (1)

10-02-1300

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)

10-02-2100

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.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
10-02-2500

HELMET WARNING TAG

One (1) label shall be installed in the cab, visible from each seating position. The label shall read "DO NOT WEAR HELMET WHILE SEATED."

One (1)
10-03-6000

REAR TOWING PROVISIONS

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

One (1)
80-43-2400

TOW PLATE PAINTING

The tow plates shall be painted black.

One (1)
10-04-2140

BUMPER EXTENSION

The chassis frame shall be extended 16" with reinforced steel angle and structural channel by the body builder. The extension shall be designed to support the bumper and other equipment to be installed.

One (1)
10-04-2330

FRONT BUMPER GRAVELSHIELD

A 15" 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)
10-04-2520

BUMPER COMPARTMENTS

The bumper compartments shall be constructed by the body builder.

One (1)
10-04-2720

FRONT BUMPER COMPARTMENT

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
10-04-2940

COMPARTMENT MATTING

One (1) bumper compartment floor shall be fitted with removable vinyl Turtle Tile matting. The matting shall be interlocking units, 12 x 12 square by 3/4" thick. This material shall be resistant to temperature, ultra-violet radiation, mechanical impacts, chemical actions and corrosion free.

One (1)
10-04-3150

BUMPER COMPARTMENT DOOR

One (1) 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 door shall be notched to allow preconnecting of the fire hose.

One (1)
10-06-1600

TIRE PRESSURE INDICATOR

There shall be a tire pressure indicator at each tire's valve stem on the vehicle that shall indicate if there is insufficient pressure in the specific tire.

One (1)
10-07-1200

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)
10-08-1300

FRONT MUD FLAPS

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

One (1)
10-08-2400

REAR MUD FLAP

One (1) full width black mud flap shall be installed behind the rear wheels.

One (1)
10-10-0300

LEFT SIDE CAB STEP

The left 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.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
10-10-0700

CAB STEPS

The passenger's side cab step area on the 4 door chassis shall be covered with slip resistant aluminum tread plate for compliance to applicable NFPA standards.

Rosenbauer – Central States Fire Apparatus, LLC

PUMP AND PLUMBING SPECIFICATIONS AND REQUIREMENTS

One (1)
20-27-3100

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.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
27-10-4500

ENGINE/PUMP GOVERNOR

Apparatus shall be equipped with a Class1 “Total Pressure Governor” (TPG) that is connected to the Electronic Control Module (ECM) mounted on the engine. The “TPG” will operate as a pressure sensor (regulating) governor (PSG) utilizing the engines J1939 data for optimal resolution and response when supported by the engine manufacturer. If J-1939 engine control is not supported, then analog remote throttle control shall be provided by the TPG.

The TPG shall utilize control algorithms that minimize pressure spikes during low or erratic water supply situations. The TPG shall be backwards compatible to any engine that supplies J1939 RPM, Temperature and Oil Pressure information providing the ability to maintain a consistent fleet fire-fighting capability and reduce operator cross training and confusion.

The TPG shall have the ability to use either a 300 PSI or a 600 PSI transducer for best operation. PSG system diagnostics shall be built in and accessible by technicians. Programmable presets for RPM and Pressure settings shall be easily configurable.

The straightforward menu structure shall allow the “TPG” configuration to match existing apparatus operation as closely as possible.

The “TPG” shall also include indication of engine RPM, system voltage, engine oil pressure and engine temperature with audible alarm output for all. The “TPG” uses the J1939 data bus for engine information, requiring no additional sensors to be installed.

The TPG shall use J1939 broadcast warnings for the alarm as a standard and allow the “user” to select warning values if “SOPs” dictate.

One (1)
20-27-6200

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.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
20-28-3400

PTO PUMP SHIFT SPECIFICATIONS -- PUMP AND ROLL

An electric powered PTO pump shift shall be installed in the cab driver's area where not subject to accidental engagement. The pump shift system shall permit "pump and roll" operations, as well as stationary pumping operations.

The following indicator lights shall be included with pump shift.

1. A green indicator light, labeled "PUMP ENGAGED" shall indicate pump shift has successfully been completed.
2. A green indicator light, labeled "OK TO PUMP" shall indicate the chassis transmission is in proper gear and parking brake is engaged.
3. Pump shift and interlocks shall comply with applicable sections of the NFPA standards.
4. The pump shift shall have an instruction label and nameplate to indicate proper pump shift instructions.

One (1)
27-03-1700

One (1) 2-1/2" pressure gauge rated at 0-600 PSI shall be provided in the cab for pump and roll operations. 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.

The gauge shall be plumbed to the high pressure side of the pump.

One (1)
20-28-4010

HIGH PRESSURE VALVE

A 1 1/2" electrically operated valve shall be provided to feed the high pressure manifold. The specified valve shall be an Akron 8800 Series one and one half-inch (1-1/2") valve with a stainless ball. The valve shall be equipped with a KZCO KZ Valve Model EH-2 12 volt electric actuator. The valve control shall be push button or rocker type switch with indicator light provided. When the valve is open, the indicator light shall illuminate. When the valve is closed the indicator light shall be off. The valve shall be controlled from the cab and rear of truck and shall be properly labeled.

One (1)
20-28-4100

PLUMBING - HIGH PRESSURE SIDE

The high pressure side of the Rosenbauer pump shall be plumbed to the front bumper turret.

One (1)
20-28-4200

PLUMBING - HIGH PRESSURE SIDE

The high pressure side of the Rosenbauer pump shall be plumbed to the hose reel.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
21-00-2000

PUMP ANODES

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

One (1)
21-00-3300

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)
21-01-0200

FIRE PUMP MASTER DRAIN

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

ADDITIONAL LOW POINT DRAINS

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

One (1)
21-01-5500

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 radiused 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)
21-01-6500

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 radiused sweep elbows to minimize water turbulence into the discharge

Rosenbauer – Central States Fire Apparatus, LLC

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)
21-01-7100

FIRE PUMP & PLUMBING SYSTEM PAINTING

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

One (1)
21-01-8100

HOSE THREADS

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

One (1)
22-04-3200

REAR CENTER -- 5" UNGATED INTAKE

One (1) 5" un gated suction intake shall be installed on the rear center to supply the fire pump from an external water supply. The intake shall be provided with a removable screen and 5" NH male threads.

One (1)
22-41-5600

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

One (1)
22-51-5400

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)
22-51-9000

REMOTE TANK TO PUMP CONTROL SWITCH

An auxiliary controller shall be located in the chassis's switch panel for the operation of the tank to pump supply line.

One (1)
24-61-1335

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
24-53-6400

The Akron valve shall be equipped with a KZCO KZ Valve Model EH-2 12 volt electric actuator. The valve control shall be push button or rocker type switch with indicator light provided. When the valve is open, the indicator light shall illuminate. When the valve is closed the indicator light shall be off. The valve control switch shall be labeled appropriately.

One (1)
23-02-1200

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)
24-61-1150

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

One (1)
24-50-1100

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)
25-08-1200

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 pump. The system shall provide a constant proportioning rate of 0.5% regardless of water pressure and volume. The Rosenbauer 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.

The foam system shall be plumbed to the front bumper monitor and the two (2) booster reels.

One (1)
25-09-1100

REMOTE FOAM ACTIVATION SWITCH AND LIGHT

There shall be a switch and indicator light mounted in the cab to energize the foam pump remotely for pump and roll operations.

One (1)
25-20-1090

FOAM TANK

The high pressure foam system shall be plumbed to the existing Class A foam tank .

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
20-30-3400

PTO FIRE PUMP DRIVESHAFTS AND INSTALLATION

The rear mounted PTO 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 PTO drive shaft(s) shall be spin balanced prior to final installation.

One (1)
20-31-1100

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.

The UL acceptance certificate shall be furnished with the apparatus on delivery.

One (1)
20-31-1500

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)
20-31-4100

FIRE PUMP COOLING

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
20-31-5100

CHASSIS ENGINE HEAT EXCHANGER COOLING SYSTEM

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

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

One (1)
22-30-1100

REAR LEFT SIDE 2-1/2" GATED INTAKE

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

The intake shall be provided with a removable screen and a 2-1/2" NST rocker plug with retaining cable or chain installed. The intake shall be equipped with a 3/4" drain and bleeder valve, controlled at the base of the pump panel or rear panel of apparatus.

One (1)
22-41-1100

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)
24-62-1250

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

One (1)
22-55-4050

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

One (1)
23-14-2100

1-1/2" DISCHARGE -- FRONT LEFT SIDE BUMPER

One (1) 1-3/4" discharge shall be installed at left side front bumper area with a swivel adapter with 1-1/2" NST male hose threads. The quarter turn ball valve shall be controlled on pump panel. The valve control shall be provided with an engraved nameplate label.

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
21-01-2100

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

One (1)
23-05-9200

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

One (1)
24-61-1200

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

One (1)
24-50-1400

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

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

One (1)
27-02-1100

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.

Two (2)
23-20-2100

REAR CENTER PUMP PANEL LEFT SIDE -- 2-1/2" DISCHARGES

Two (2) 2-1/2" discharges shall be installed above the left side of the rear center pump panel and shall be controlled by a quarter turn ball valve on the rear mount pump control panel. The discharges shall have 2-1/2" NPT x 2-1/2" NST male hose threads. An engraved nameplate label shall be installed adjacent the valve control handle.

The left rear discharges shall be located below the hose bed.

Two (2)
21-01-2100

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

Two (2)
24-01-2400

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

Two (2)
24-61-1250

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

Rosenbauer – Central States Fire Apparatus, LLC

Two (2)
24-50-1100

Two (2) manually operated pull rods, with quarter turn valves, with locking feature shall be provided on the specified discharges. The handles shall be equipped with color coded engraved type name plates.

Two (2)
27-02-1100

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

Two (2)
23-20-2200

REAR CENTER PUMP PANEL -- 2-1/2" DISCHARGE

Two (2) 2-1/2" discharges shall be installed at the rear center pump panel and shall be controlled by quarter turn ball valves on the rear mount pump control panel. The discharges shall have 2-1/2" NPT x 2-1/2" NST male hose threads. An engraved nameplate label shall be installed adjacent the valve control handle.

Two (2)
21-01-2100

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

Two (2)
24-02-1200

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

Two (2)
24-03-1400

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

Two (2)
24-61-1250

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

Two (2)
24-50-1100

Two (2) manually operated pull rods, with quarter turn valves, with locking feature shall be provided on the specified discharges. The handles shall be equipped with color coded engraved type name plates.

Two (2)
27-02-1100

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
24-11-1100

FRONT BUMPER MONITOR DISCHARGE

One (1) 2" discharge shall be piped to the front center bumper area with 2" NPT male threads. The quarter turn ball valve shall be controlled in the chassis 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)
21-01-2100

A 3/4" quarter turn bleeder valve shall be installed.

One (1)
24-15-1100

ELECTRICALLY REMOTE CONTROLLED MONITOR

One (1) Elkhart Sidewinder monitor Model 8494-01, part number 08494001, shall be provided. The lightweight, Elk-O-Lite monitor shall have a 2" vaned waterway. The monitor shall be equipped with fully encased stainless steel worm gears with a 12 volt electric motor and a manual override. The motor shall draw a maximum of four amps. The monitor is designed to mount on a front bumper of an apparatus.

The motor driven worm gear shall control the vertical oscillating travel of 135 degrees, with 90 above and 45 degrees below horizontal. The horizontal oscillating travel is available in a 180 degree range. The monitor's vertical and horizontal motor speed shall be 65.5:1.

The monitor shall be equipped with double ball races with stainless steel bearings. The monitor shall have a 2" NPT female inlet with a 1-1/2" NST male outlet. The unit shall be painted red urethane enamel with hard anodized trim.

One (1)
24-15-1300

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

One (1)
24-15-1400

Elkhart, part number 81206000, control module shall be provided in the chassis cab. The control module shall be used in conjunction with the Elkhart Model #8494-01 Sidewinder monitor. This control module shall have solid state circuitry that shall be completely encapsulated in epoxy. The unit shall be furnished with waterproof wiring connectors.

One (1)
24-18-6100

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 a automatic flow variable gallonage. The motor shall be totally enclosed and sealed for protection. The lightweight, nozzle shall have a 1-1/2" NST swivel inlet.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
24-30-3300

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 hose coupled. The reel shall be bolted to a mounting system for easy service or removal.

The hose reel is to be mounted in left side cab step compartment area.

One (1)
24-31-2100

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 construction.

The reel rewind switch shall be located adjacent to the hose reel.

One (1)
24-32-1400

1-1/2" HOSE REEL DISCHARGE

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

One (1)
21-01-2100

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

One (1)
24-32-1800

HOSE REEL DISCHARGE

The specified hose reel shall be piped to the high pressure side of the fire pump.

One (1)
24-61-1150

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

One (1)
24-53-0800

One (1) manually operated swing type valve with control located adjacent the valve, shall be supplied on the specified discharge. The control handle shall be equipped with quarter turn locking feature. The valve shall be equipped color coded engraved type name plate.

One (1)
24-33-1700

HOSE FOR REEL

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.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
24-33-9600

CAPTIVE HOSE ROLLERS

One (1) stainless steel four sided captive type roller assembly shall be provided. The location of the captive rollers shall be:

One (1)
27-37-3150

BOOSTER REEL AIR BLOWOUT

One (1) air blow out shall be provided for the booster reel. The air supply must be supplied from the chassis air system and be connected to an air inlet fitting located on the pump operator's panel.

The air inlet shall be a Parker Model #B53 male with female fitting.

One (1)
24-30-3400

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 hose coupled. The reel shall be bolted to a mounting system for easy service or removal.

The hose reel is to be mounted in right side cab step compartment area.

One (1)
24-31-2100

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 construction.

The reel rewind switch shall be located adjacent to the hose reel.

One (1)
24-32-1400

1-1/2" HOSE REEL DISCHARGE

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

One (1)
21-01-2100

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

One (1)
24-32-1800

HOSE REEL DISCHARGE

The specified hose reel shall be piped to the high pressure side of the fire pump.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
24-61-1150

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

One (1)
24-53-0800

One (1) manually operated swing type valve with control located adjacent the valve, shall be supplied on the specified discharge. The control handle shall be equipped with quarter turn locking feature. The valve shall be equipped color coded engraved type name plate.

One (1)
24-33-1700

HOSE FOR REEL

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.

One (1)
24-33-9600

CAPTIVE HOSE ROLLERS

One (1) stainless steel four sided captive type roller assembly shall be provided. The location of the captive rollers shall be:

One (1)
27-37-3150

BOOSTER REEL AIR BLOWOUT

One (1) air blow out shall be provided for the booster reel. The air supply must be supplied from the chassis air system and be connected to an air inlet fitting located on the pump operator's panel.

The air inlet shall be a Parker Model #B53 male with female fitting.

Two (2)
80-43-1600

HOSE REEL PAINTING

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

One (1)
25-06-1100

FOAM PRO FOAM SYSTEM

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

The system shall be equipped with a control module suitable for installation on the pump panel. There shall be a microprocessor incorporated within the motor driver that shall receive input from the system's flow meter, while also monitoring the foam concentrate pump output. The microprocessor shall compare the values to ensure that the desired amount of foam concentrate is

Rosenbauer – Central States Fire Apparatus, LLC

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.

Rosenbauer – Central States Fire Apparatus, LLC

CONTROL CONNECTION CABLE -- FOAM SYSTEM

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

PUMP PANEL CONTROL -- FOAM SYSTEM

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

FLOWMETER AND TEE -- FOAM SYSTEM

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

LOW-LEVEL TANK SENSOR FOAM TANK

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

MAIN WATERWAY CHECK VALVE -- FOAM SYSTEM

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

FOAM SYSTEM -- INJECTOR FITTING

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

INSTRUCTION AND RATING LABEL -- FOAM SYSTEM

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

SCHEMATIC LABEL -- FOAM SYSTEM

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
25-20-1200

1" FOAM TANK CONTROL -- CLASS A

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

One (1)
25-21-1300

INTEGRAL CLASS A FOAM TANK -- 20 GALLON

One (1) twenty (20) gallon Class A foam tank shall be installed within the water tank. The non-corrosive foam tank shall meet applicable sections of NFPA standards. The foam concentrate tank shall be provided with sufficient wash partitions so that the maximum dimension perpendicular to the plane of any partition shall not exceed 36 inches. The swash partition(s) shall extend from wall to wall and cover at least 75 percent of the area of the plane of the partition.

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

The foam tank fill tower shall be equipped with a pressure/vacuum vent that enables the tank to compensate for changes in pressure or vacuum when filling or withdrawing foam 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)
25-22-9300

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
25-23-1000

FOAM TANK DRAIN -- UNDER TANK

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

One (1)
25-19-9000

FOAM SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS

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

Plumbing and Strainer

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

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

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.

Rosenbauer – Central States Fire Apparatus, LLC

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

The foam system shall be plumbed to the two (2) 2 1/2" discharges located below the hose bed.

The Foam Pro control for the foam system shall be located at the rear operator's panel.

One (1)
26-40-1100

REARMOUNT 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.

Rosenbauer – Central States Fire Apparatus, LLC

9. Tank fill control.

10. Tank-to-pump control.

One (1)
26-40-2100

PUMP PANEL LOCATION -- REAR CENTER

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

One (1)
26-40-4100

PUMP CONTROL PANEL ROLL-UP DOOR -- REAR CENTER

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

One (1)
26-40-3200

PUMP CONTROL PANEL -- REAR MOUNT

The pump operator's instrument panel for the rear mount pump shall be constructed of black thermoplastic coating material applied to smooth aluminum and be fastened to the pump enclosure with 1/4" stainless steel bolts.

One (1)
26-40-5400

REARMOUNT PUMP GAUGE PANEL -- UPPER REAR

A pump access/gauge panel shall be provided on the upper rear of the rear mount pump enclosure that allows access to the fire pump and plumbing. The door shall be constructed of black thermoplastic coating material applied to smooth aluminum.

The access panel shall be as large as practical and vertically hinged.

One (1)
26-40-5500

REARMOUNT PUMP AND PLUMBING ACCESS

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

One (1)
26-40-5900

PUMP PANEL TRIM -- STAINLESS STEEL

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
26-55-1100

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)
26-55-2050

COLOR CODED PUMP PANEL LABELING 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)
26-56-1400

REARMOUNT 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)
26-56-2000

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)
27-01-1100

MASTER DISCHARGE AND INTAKE GAUGES

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

One (1)
27-01-4100

TEST TAPS

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
27-35-2000

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.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
25-26-1300

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)
25-25-0060

WATER TANK

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

One (1)
25-44-1200

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)
25-42-1100

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

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

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

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

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

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

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
25-42-1200

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

One (1)
25-50-2500

DIRECT TANK FILL

One (1) 2-1/2" diameter direct tank fill inlet shall be provided, including a 2-1/2" female NH swivel, plug and screen.

The valve shall be located and controlled on the right side rear of body.

One (1)
22-41-1100

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)
25-50-3100

TANK FILL ELBOW

The direct tank fill shall be equipped with a 30-degree elbow and a 3/4" drain.

Rosenbauer – Central States Fire Apparatus, LLC

APPARATUS BODY SPECIFICATIONS AND REQUIREMENTS

One (1)
29-10-1000

ALUMINUM HOSEBED GRATING

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 assembled into a one-piece grid system to prevent the accumulation of water and allow ventilation to assist in drying hose.

One (1)
29-10-5100

HOSE BED STORAGE CAPACITY

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

The hose bed shall hold 200' of 1 3/4" hose in each pre-connected hose bed and 1200' of 2 1/2" hose in the main hose bed.

Two (2)
29-10-8100

ALUMINUM HOSEBED DIVIDER

Two (2) adjustable hose bed dividers constructed of .250" aluminum shall be installed on the apparatus.

One (1)
29-20-3500

ALUMINUM HOSEBED COVER

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

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

Two (2)
29-20-7300

HOSEBED LIGHTS

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

One (1)
29-20-7800

REAR VINYL FLAPS FOR ALUMINUM COVER

There shall be a vinyl flaps attached to each aluminum hose bed cover. The vinyl flaps shall cover the area on the rear of the hose bed from top to bottom. The flaps shall be independent of

Rosenbauer – Central States Fire Apparatus, LLC

each other but attachable with Velcro in the center. The bottom edge of the flap shall be secured utilizing a hook and loop fastening system.

The color of the hose bed flaps shall be red.

One (1)
30-01-1800

1/8" ALUMINUM BODY

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

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 tread plate 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 tread plate 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.

Rosenbauer – Central States Fire Apparatus, LLC

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

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

One (1)
30-02-2200

COMPARTMENT FLOORS

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

One (1)
30-10-1100

GALVANIZED SUB-FRAME

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

Two full frame lengths, three-inch (3") 3.4 pound per foot longitudinal steel channels shall form the sides of the body sub frame and sides of the water tank cradle. Sub frame cross members shall be fabricated with three inch (3") 3.4 pound per foot heavy steel channel cross members welded to the longitudinal body sub frame sides and the full length frame pads.

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

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

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

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

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

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
31-01-1100

BODY CONFIGURATION

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

One (1)
44-06-2200

SINGLE AXLE WHEEL WELL LINER

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

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

One (1)
44-06-4100

FENDERETTES

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

One (1)
29-00-1200

HOSEBED WIDTH

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

One (1)
32-03-0063

COMPARTMENT HEIGHT

The left side body compartments shall be 63" high.

One (1)
32-03-1063

COMPARTMENT HEIGHT

The right side body compartments shall be 63" high.

One (1)
30-02-1300

DOOR CONSTRUCTION

HINGED DOORS

Any compartment calling for a hinged door shall be supplied with a flush style door, so that the entire door fits flush against the apparatus body sides. The 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.

Rosenbauer – Central States Fire Apparatus, LLC

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.

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

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

ROLL UP DOORS

Any compartment calling out a roll up door shall be supplied with a door fabricated from aluminum extrusions and be manufactured and assembled in the United States.

The door slats shall be double-wall extrusions with dimensions of 1.366" high x .315" thick. The exterior surface shall be flat and the interior surface concave to deflect loose equipment to prevent the door from jamming. Each slat shall have interlocking end shoes to prevent the slat from moving side to side resulting in binding of the door. Each slat shall be separated by a co-extruded PVC and rubber inner seal to prevent metal to metal contact and minimize dirt and moisture from entering the compartment. The inner seal shall not be visible from the exterior to maintain a clean appearance of door. The slats shall have interlocking joints with a folding locking flange to provide security and prevent penetration by sharp objects.

The track shall be a one (1) piece aluminum assembly that has an attaching flange and finishing flange incorporated into the design that facilitates installation and provides a finished look to the door without additional trim or caulking. A low profile side seal shall be utilized to maximize usable compartment space.

Rosenbauer – Central States Fire Apparatus, LLC

A drip rail designed to prevent water from dripping into the compartment shall be provided. The drip rail shall have a built in replaceable non-contacting seal to eliminate scratching of the surface of the door.

Bottom rail extrusion must have smooth back to prevent loose equipment from jamming the door and have “V” shaped double seal to prevent water and debris from entering the compartment. The door latch system shall be a full width one (1) piece lift bar that enables the user to operate with one hand.

One (1)
32-05-1105

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:

One (1)
44-40-1100

COMPARTMENT LOUVER

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

Two (2)
45-05-3100

250# ROLLOUT TRAYS

Two (2) roll-out equipment trays shall be installed in a standard depth compartment. The trays with telescoping slides and roller bearings shall be rated to a maximum load of 250 lbs. Trays shall be of a closed-in design, formed of .188" smooth aluminum plate, fabricated with two (2) inch sides. Trim-Lok edge trim shall be installed on the front lip to afford protection to equipment and firefighter when loading/unloading. Reflective material measuring 1" x 6" shall be installed on the front corner both on the face and side of tray for firefighter safety.

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

One (1)
45-05-4300

ROLLOUT TRAY MOUNTING

The adjustable tray shall be mounted on adjustable tracks.

One slide out tray shall be adjustable and the other slide out tray shall be floor mounted.

One (1)
55-02-1100

COMPARTMENT LIGHTS

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
55-06-1100

COMPARTMENT LIGHT SWITCH

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

One (1)
32-05-1310

LEFT OVERWHEEL COMPARTMENT

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

The compartment shall be equipped with the following:

One (1)
44-40-1100

COMPARTMENT LOUVER

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

One (1)
45-01-1050

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)
45-02-1200

ADJUSTABLE SHELF

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

One (1)
55-05-1100

ADDITIONAL COMPARTMENT LIGHT

One (1) additional sealed light shall be provided and installed for compartments with shelves, as directed by the Fire Department. The additional lights shall be mounted to a bracket attached to the Unistrut shelf standard. Lights mounted to the shelf brackets shall have additional wire to allow the light to be adjusted with the shelf. Lights shall be wired to switch on and off with the automatic door jamb switch.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
55-02-1100

COMPARTMENT LIGHTS

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

One (1)
55-06-1100

COMPARTMENT LIGHT SWITCH

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

One (1)
32-05-1705

LEFT REAR COMPARTMENT

There shall be one (1) full height compartment located behind 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)
44-40-1100

COMPARTMENT LOUVER

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

One (1)
45-01-1050

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)
45-02-1200

ADJUSTABLE SHELF

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

One (1)
55-05-1100

ADDITIONAL COMPARTMENT LIGHT

One (1) additional sealed light shall be provided and installed for compartments with shelves, as directed by the Fire Department. The additional lights shall be mounted to a bracket attached to the Unistrut shelf standard. Lights mounted to the shelf brackets shall have additional wire to

Rosenbauer – Central States Fire Apparatus, LLC

allow the light to be adjusted with the shelf. Lights shall be wired to switch on and off with the automatic door jamb switch.

One (1)
45-05-3100

250# ROLLOUT TRAY

One (1) roll-out equipment tray shall be installed in a standard depth compartment. The tray with telescoping slides and roller bearings shall be rated to a maximum load of 250 lbs. Tray shall be of a closed-in design, formed of .188" smooth aluminum plate, fabricated with two (2) inch sides. Trim-Lok edge trim shall be installed on the front lip to afford protection to equipment and firefighter when loading/unloading. Reflective material measuring 1" x 6" shall be installed on the front corner both on the face and side of tray for firefighter safety.

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

The slide out tray shall be floor mounted.

One (1)
55-02-1100

COMPARTMENT LIGHTS

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

One (1)
55-06-1100

COMPARTMENT LIGHT SWITCH

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

One (1)
32-06-1105

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)
44-40-1100

COMPARTMENT LOUVER

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

One (1)
45-01-1050

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.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
45-02-1200

ADJUSTABLE SHELF

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

One (1)
55-05-1100

ADDITIONAL COMPARTMENT LIGHT

One (1) additional sealed light shall be provided and installed for compartments with shelves, as directed by the Fire Department. The additional lights shall be mounted to a bracket attached to the Unistrut shelf standard. Lights mounted to the shelf brackets shall have additional wire to allow the light to be adjusted with the shelf. Lights shall be wired to switch on and off with the automatic door jamb switch.

One (1)
55-02-1100

COMPARTMENT LIGHTS

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

One (1)
55-06-1100

COMPARTMENT LIGHT SWITCH

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

One (1)
32-06-1410

RIGHT OVERWHEEL COMPARTMENT

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

The compartment shall be equipped with the following:

One (1)
44-40-1100

COMPARTMENT LOUVER

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
45-01-1050

ADJUSTABLE SHELVING TRACKS

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

Four (4)
90-21-1100

SCBA MOUNTING BRACKET

Four (4) Zico 30 minute SCBA air pack mounting with spring tension bracket included.

One (1)
55-02-1100

COMPARTMENT LIGHTS

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

One (1)
55-06-1100

COMPARTMENT LIGHT SWITCH

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

One (1)
32-06-1705

RIGHT REAR COMPARTMENT

There shall be one (1) full height compartment located behind 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)
44-40-1100

COMPARTMENT LOUVER

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

One (1)
45-01-1050

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)
45-02-1200

ADJUSTABLE SHELF

One (1) adjustable shelf shall be constructed of .125" smooth aluminum plate with 1.5" formed vertical lip front & back. Shelf supports on each side to be constructed of .188" aluminum and

Rosenbauer – Central States Fire Apparatus, LLC

bolted to an aluminum extrusion (mounted vertically) by use of 3/8" bolts and spring-loaded cam locks. If shelf is longer than 40" a reinforcement by aluminum gusset is to be placed full-length on bottom of shelf. Trim-Lok trim shall be installed on the front lip edge to afford protection to equipment and firefighter when loading/unloading.

One (1)
55-05-1100

ADDITIONAL COMPARTMENT LIGHT

One (1) additional sealed light shall be provided and installed for compartments with shelves, as directed by the Fire Department. The additional lights shall be mounted to a bracket attached to the Unistrut shelf standard. Lights mounted to the shelf brackets shall have additional wire to allow the light to be adjusted with the shelf. Lights shall be wired to switch on and off with the automatic door jamb switch.

One (1)
45-05-3100

250# ROLLOUT TRAY

One (1) roll-out equipment tray shall be installed in a standard depth compartment. The tray with telescoping slides and roller bearings shall be rated to a maximum load of 250 lbs. Tray shall be of a closed-in design, formed of .188" smooth aluminum plate, fabricated with two (2) inch sides. Trim-Lok edge trim shall be installed on the front lip to afford protection to equipment and firefighter when loading/unloading. Reflective material measuring 1" x 6" shall be installed on the front corner both on the face and side of tray for firefighter safety.

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

The slide out tray shall be floor mounted.

One (1)
55-02-1100

COMPARTMENT LIGHTS

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

One (1)
55-06-1100

COMPARTMENT LIGHT SWITCH

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

One (1)
33-60-1120

REAR BODY CONFIGURATION

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
33-60-1820

REAR BODY

The apparatus body, behind the rear wheels shall be raised to allow for a high angle of departure.

The rear of the apparatus body shall be raised 6".

One (1)
33-61-1100

REAR STEP - 8" BOLT-ON

An 8" deep step surface shall be provided at the rear of the apparatus body, bolted in place and easily removable for replacement or repair. The tailboard shall be constructed of .188" aluminum diamond plate or equal non-slip surface in compliance with NFPA #1901 standards.

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

One (1)
90-02-4200

SLIDE OUT LADDER MOUNTINGS IN HOSEBED

The ladders shall be stored in the hose bed 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.

One (1)
90-02-5300

EXTERIOR FOLDING ATTIC LADDER MOUNTING

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

One (1)
90-03-0225

LADDER SOURCE

New ground ladders shall be provided by the body builder.

Two (2)
90-16-5300

PIKE POLE MOUNTING BRACKET

Two (2) tube shall be provided for pike pole mounting. The tube shall have a 2" interior diameter and shall be mounted in the hose bed.

Pike poles shall be mounted in hose bed compartment along with the ladders.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
90-16-6115

PIKE POLE SOURCE

The pike poles shall be provided by the body builder.

One (1)
90-25-7750

HARD SUCTION MOUNTING

One (1) hard suction hose compartment shall be provided above the body compartments, on the left side. The design shall allow the hose to be individually removed from the rear of the apparatus. The hard suction compartment shall be constructed of smooth material painted to match the body and shall be equipped with an aluminum tread plate door with a stainless steel hinge and a push to latch door catches.

The compartment shall hold two (2) lengths of 5" x 10" light weight suction hose.

One (1)
90-25-9115

SUCTION HOSE SOURCE

New suction hose shall be provided by the body builder.

One (1)
44-01-1450

FRONT BODY PROTECTION PANELS

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

One (1)
44-01-4000

REAR BODY PROTECTION PANELS

Smooth aluminum shall be installed on the rear of the body, to allow for the proper application and installation of a "Chevron" stripe on the rear.

One (1)
44-01-5000

POLISHED COMPARTMENT TOP WELDS

The compartment top welds to be polished.

One (1)
33-62-1300

FOLDING STEP LEFT REAR

Three (3) 8" square folding steps of chrome plated die cast aluminum shall be provided. The steps shall comply to NFPA #1901 non-slip standards and shall be installed on the rear left side of the body.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
33-62-1600

FOLDING STEP RIGHT REAR

Three (3) 8" square folding steps of chrome plated die cast aluminum shall be provided. The steps shall comply to NFPA #1901 non-slip standards and shall be installed on the rear right side of the body.

One (1)
33-62-6100

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)
33-62-6101

I ZONE BRACKETS

There shall be two (2) easily removable 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 interfere with any rear facing lights when carrying hose.

The I-Zone brackets shall be as provided on the Cal Fire/CDF Model 34 pumpers.

One (1)
33-70-1300

HANDRAIL REAR STEP

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

One (1)
44-02-1100

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.

One (1)
44-11-5100

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)
44-10-1100

AIR CYLINDER COMPARTMENT IN WHEELWELL

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

Rosenbauer – Central States Fire Apparatus, LLC

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be 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)
44-10-6000

SCBA COMPARTMENT STRAPS

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

One (1)
44-11-5300

WHEEL WELL COMPARTMENT LOCATION

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

One (1)
44-10-1100

AIR CYLINDER COMPARTMENT IN WHEELWELL

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

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be 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)
44-10-6000

SCBA COMPARTMENT STRAPS

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

One (1)
44-11-5500

WHEEL WELL COMPARTMENT LOCATION

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
44-10-1100

AIR CYLINDER COMPARTMENT IN WHEELWELL

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

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be 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)
44-10-6000

SCBA COMPARTMENT STRAPS

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

One (1)
44-11-5700

WHEEL WELL COMPARTMENT LOCATION

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

One (1)
44-10-1100

AIR CYLINDER COMPARTMENT IN WHEELWELL

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

The cylinder storage compartment shall be constructed entirely of aluminum. The door assemblies shall be 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)
44-10-6000

SCBA COMPARTMENT STRAPS

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

Rosenbauer – Central States Fire Apparatus, LLC

Two (2)
44-18-1300

UPPER BODY SIDE COMPARTMENTS

Two (2) upper body compartments shall be provided top of body with dimensions of approximately 90" and 12" to 20" deep.

Each compartment shall have a lift-up door installed, constructed of 1/8" aluminum tread plate with 1/8" aluminum box pan. The door shall have a stainless steel hinge and dual gas openers. The door opening shall be flanged upward 2" with 1" reverse lip, to prevent water from running into compartments when the door is closed. Two (2) butterfly latches shall be installed to hold down the door along with a stainless steel handle to lift the door.

The compartment shall be located on the right side of the body.

The compartment shall hold shovels and other long handled tools and equipment.

Rosenbauer – Central States Fire Apparatus, LLC

12 VOLT ELECTRICAL SPECIFICATIONS AND REQUIREMENTS

One (1)
50-02-1000

LOW VOLTAGE ELECTRICAL SYSTEM SPECIFICATIONS

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

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

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

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

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

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

Rosenbauer – Central States Fire Apparatus, LLC

The electrical system shall include the following:

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

Rosenbauer – Central States Fire Apparatus, LLC

2. Alternator performance test at idle:

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

3. Alternator performance test at full load:

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

4. Low voltage alarm test:

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

NFPA REQUIRED DOCUMENTATION

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

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

One (1)
50-05-1510

LOW VOLTAGE ELECTRICAL SYSTEM

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
50-10-1750

LOAD MANAGER 2

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

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

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

One (1)
50-10-2000

HIGH IDLE SYSTEM

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

One (1)
50-12-1100

ELECTRICAL CONSOLE WITH EMERGENCY LIGHT SWITCH PANEL

An electrical console shall be constructed of .125" smooth aluminum material and mounted in the cab of the truck chassis. Console shall be designed and installed between the driver and passenger seats. The top face of the console shall be designed as the switch panel for all emergency light switches. The switch panel shall be hinged for easy access to the switch connections.

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

SWITCHES

A rocker style internally lighted switch shall be provided and wired through a heavy-duty relay to activate power to the emergency lights. The emergency lights shall be activated by a single "MASTER SWITCH" on the electrical console.

The rear of the electrical console shall have a slot for holding a 2" binder.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
50-15-1100

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)
50-15-3100

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)
50-30-1100

ALTERNATOR

The alternator shall be supplied by the chassis manufacturer.

One (1)
50-41-3000

AIR HORNS

Two (2) 24.5" Stuttertone chrome plated air horns shall be recess mounted into the front bumper with one positioned on each side. 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)
50-43-2000

ELECTRIC TRAFFIC HORN AND AIR HORN SELECTOR SWITCH

One (1) selector switch shall be provided on the cab's dash that will allow the chassis steering wheel horn button to activate either the electric traffic horn or air horn system.

One (1)
50-43-2200

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.

One (1)
51-05-1100

INTERIOR CAB CEILING LIGHT

One (1) ceiling mounted dome light with on/off switch shall be supplied with the chassis.

One (1)
51-05-6100

ENGINE COMPARTMENT LIGHT

One (1) 12 volt incandescent light with switch shall be mounted in the engine enclosure.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
51-05-6300

PUMP ENCLOSURE LIGHTS

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

One (1)
52-01-1200

BACK-UP ALARM

One (1) automatic electric back-up alarm shall be wired to the back-up light circuit, and mounted under the rear of the apparatus body.

One (1)
52-03-1500

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 map light shall be located on the cab dash panel.

One (1)
52-07-1200

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.

One (1)
53-01-1100

MARKER LIGHTS

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

One (1)
53-02-1100

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)
53-03-1700

TAIL LIGHTS

Two (2) Weldon tail/brake lights shall be provided. The rectangular light shall be 7" x 8" incandescent with a red lens.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
53-04-1700

TURN SIGNALS

Two (2) Weldon turn signals shall be provided. The rectangular incandescent light shall be 7" x 8" in dimension.

One (1)
53-06-1400

BACKUP LIGHTS

Two (2) Weldon incandescent backup lights shall be installed on the rear of the apparatus body. The dimensions shall be 7" x 8" and the lens color shall be clear.

One (1)
54-02-1300

CAB GROUND LIGHTS

Four (4) incandescent ground lights shall be installed under the cab doors, one (1) under each door.

The lights shall be wired to the cab door switches.

One (1)
54-03-1100

PUMP PANEL GROUND LIGHTS

Two (2) incandescent ground lights shall be installed under the pump panel running boards. One (1) light shall be located on the driver's side and one (1) light located on the officer's side of the apparatus.

The lights shall be wired to a switch on the pump panel.

One (1)
54-03-1500

REAR STEP GROUND LIGHTS

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

One (1)
54-04-5995

GROUND LIGHT SWITCH

The ground lights shall automatically activate when the pump panel switch is applied.

Two (2)
54-10-1400

STEP LIGHTS

Two (2) incandescent step lights with clear lens shall be installed to illuminate the rear step of the apparatus body.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
54-11-2200

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.

Two (2)
54-15-1150

SCENE LIGHTS

Two (2) Whelen Series 810 halogen 8" x 10" scene lights shall be installed. The lights shall be installed with a 8-32 degree downward angle. A switch for the scene light(s) shall be provided in the cab.

Two (2)
54-15-5700

SCENE LIGHT LOCATION

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

One (1)
54-15-6600

SCENE LIGHT SWITCH

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

One (1)
55-11-1200

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.

Rosenbauer – Central States Fire Apparatus, LLC

APPARATUS WARNING SYSTEM SPECIFICATIONS AND REQUIREMENTS

One (1)
56-01-1300

ELECTRIC SIREN

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

One (1)
56-02-1600

SPEAKER

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

One (1)
56-03-1100

SPEAKER LOCATION

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

One (1)
57-03-1200

LIGHTBAR

One (1) Code 3 Model #2158NFPA2 light bar shall be installed on the apparatus cab roof. The LED X2100 Series light bar shall be 58" in length. The lens colors shall be red and clear.

One (1)
57-03-7500

LIGHTBAR OPTION

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

One (1)
58-72-1800

UPPER REAR WARNING LIGHTS

One (1) pair of Code 3 series 85 red LED warning lights shall be installed, one each side on the upper rear of the apparatus body. The dimensions of the lights shall be 7" x 9".

One (1)
58-62-1800

UPPER SIDE REAR WARNING LIGHTS

One (1) pair of Code 3 model 85 red LED warning lights shall be installed, one each side on the upper portion of the body side, towards the rear of the body. The dimensions of the lights shall be 7" x 9".

One (1)
58-04-1200

LOWER FRONT WARNING LIGHTS

One (1) pair of Code 3 model #45 red LED lights shall be installed, one each side on the front of the chassis cab. The dimensions of the lights shall be 3" x 7".

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
58-10-1200

INTERSECTION WARNING LIGHTS

One (1) pair of Code 3 model #45 red LED lights shall be installed one each side of the chassis cab. The dimensions of the lights shall be 3" x 7" and shall have a red lens.

One (1)
58-37-1200

LOWER REAR SIDE WARNING LIGHTS

One (1) pair of Code 3 series 45 red LED warning lights shall be installed, one each side of the apparatus body, towards the rear of the body. The dimensions of the lights shall be 3" x 7".

One (1)
58-82-1200

LOWER REAR WARNING LIGHTS

One (1) pair of Code 3 series 45 red LED warning lights shall be installed, one each side on the lower rear of the apparatus body. The dimensions of the lights shall be 3" x 7".

Rosenbauer – Central States Fire Apparatus, LLC

120 VOLT ELECTRICAL SPECIFICATIONS AND REQUIREMENTS

One (1)
60-01-1300

GENERATOR

One (1) Honda EM5000S, 5000 watt, 120/240 volt portable generator shall be provided for on the apparatus. The generator shall have an electric starter with a recoil manual backup starter. The single cylinder, four cycle, air cooled engine shall have an eleven (11) horsepower rating with a fuel tank capacity of 6.6 gallons for a run time of 8 hours at full load with a full tank. The generator shall have the following receptacles:

Two (2) 20 amp 125 volt duplex straight blade NEMA 5-20R
One (1) 30 amp 125 volt twist lock NEMA L5-30R
One (1) 30 amp 125/250 volt twist lock NEMA L14-30R

The generator shall have approximate dimensions of 26" L x 21" W x 20" H and a weight of 225 pounds.

Data Label

A permanent data label indicating the following information shall be applied:

- 1) Rated voltage
- 2) Phase
- 3) Frequency
- 4) Amperage
- 5) Continuous Watts
- 6) Peak Watts

One (1)
60-20-3300

GENERATOR INSTALLATION

The generator shall be mounted on shock and anti-vibration rubber mountings and be equipped with a removable lifting bracket.

A battery powered starter motor shall provide the generator starting system with the 12-volt power supplied from the chassis battery system. The ignition switch shall be located at the generator circuit breaker panel area. The 12-volt supply line from battery shall be adequate size and a circuit breaker installed at the power source.

The generator shall be installed in a location that will provide for adequate cooling air in accordance with manufacturer's recommendations. When mounted in an enclosed compartment, it shall be designed to operate with doors "open".

The generator muffler and flexible exhaust pipe shall be securely supported and shall be shielded or insulated to prevent heating of the body, electrical components or equipment mounting. The exhaust system shall be installed so fumes, vapors, heat and vibrations do not enter the interior compartments. The exhaust outlet piped to the exterior and located so that the exhaust is directed away from operator's position. The exhaust piping and discharge shall be located or shielded to

Rosenbauer – Central States Fire Apparatus, LLC

prevent thermal damage to the apparatus or equipment. Where parts of the exhaust system are exposed, so that they are likely to cause injury to operating personnel, suitable protective guards shall be provided.

Electrical System Installation

The line voltage electrical system shall comply with applicable NFPA standards and shall comply also to the applicable sections of the National Electric Code #70 standards. Line voltage carrying equipment downstream of the power source shall be "listed" (where available) and installed in accordance with manufacturer's instructions. The electrical equipment installed shall be suitable for intended use and type of locations (wet, dry, or underbody and chassis).

The grounding and bonding shall comply to applicable sections of NFPA standards. The chassis frame rail, body sheet metal, and cab sheet metal shall be properly bonded per NFPA schematic. The bonding copper conductor shall be rated at 115 % of current rating of power source.

Over-Current Protection Panel

Manually re-settable over current devices shall be installed to protect the line voltage electrical system components. A main over current protection device shall be provided that is either incorporated in the power source or is connected to the power source by a power supply assembly. The size of the main over current protection device shall not exceed 100 percent of the nameplate amperage rating on the power source specification label or the rating of the next larger available size over current protection device where so recommended by the power source manufacturer.

The conductor used in the power supply assembly between the output terminals of the power source and the main over current protection device shall not exceed 144 inches in length. If the power supply cable is longer than 144", a separate master disconnect switch shall be located at the generator.

Over current protection devices shall be provided for each individual circuit and shall be sized at not less than 15 amps in accordance with NEC. Each over current protection device shall be marked to identify the function of the circuit it protects. The circuit breaker panel and instruments shall be located so that all circuit breakers are readily visible under normal operating conditions. The panel shall be readily visible and located so that there is unimpeded access to the panel board controls.

Labeling Of Equipment

All circuit breakers shall be labeled and shall be provided for all interior and exterior outlets indicating output amperage, voltage and phase.

Instruction Label

A label that provides the operator with the essential power source operating instructions, including the power-up and power-down sequence shall be permanently attached to the apparatus at any point where such operations can take place.

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
60-20-4050

CIRCUIT BREAKER BOX

One (1) circuit breaker box for single phase voltage equipment shall be provided capable of holding four (4) breakers.

One (1)
60-05-9200

GENERATOR REMOTE START SWITCH

One (1) remote start/stop switch for the generator shall be located in the cab. A preheat function shall be included for diesel powered generators. An indicator light shall illuminate when the generator is running. The switch shall be centrally located for use by both seating positions.

One (1)
60-20-1400

GENERATOR MOUNTING LOCATION

The generator shall be installed in the front section of the hose bed.

One (1)
60-20-5100

CIRCUIT BREAKER BOX LOCATION

The circuit breaker box shall be installed in an outside body compartment.

The load center shall be located in the upper left corner of the L1 compartment and face to the rear of the apparatus.

One (1)
60-20-8300

LINE VOLTAGE WIRING INSTALLATION

Line voltage wiring in the vehicle shall be through Carflex, or equal flexible moisture resistant reinforced conduit, with proper seal-tight connectors and hardware. Type THHN or Type SO stranded copper conductors with 600-volt insulation rated for at least 194 degrees shall be installed in the conduit. All electrical junction boxes shall conform to the National Electric Code and be fully accessible for service and not hidden in walls or ceiling.

Electrical conduit shall be supported within 6 inches of any junction box and at a minimum of every 24 inches of run. Supports shall be made of corrosion protected metal and that does not cut or abrade the conduit and shall be mechanically fastened to the vehicle.

Electrical conduit shall not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring and shall be separated by a minimum of 12 inches from exhaust piping or properly shielded and separated from fuel lines by a minimum of 6 inches distance.

All wiring connections and terminations shall provide a positive mechanical and electrical connection. Connectors shall be installed in accordance with the manufacturer's instructions. Use of wire nuts or insulation displacement and insulation piercing connectors shall be avoided.

Rosenbauer – Central States Fire Apparatus, LLC

Two (2)
60-25-2000

120V ELECTRIC RECEPTACLES -- TWIST LOCK

Two (2) 120-volt 20 amp twist lock (NEMA L5-20) receptacles with spring loaded weatherproof covers shall be provided with wiring to the circuit breaker panel.

One (1)
60-30-2900

ELECTRIC RECEPTACLE LOCATION -- REAR EXTERIOR BODY

The electric receptacle shall be located on the exterior left rear face of the body.

One (1)
60-30-3000

ELECTRIC RECEPTACLE LOCATION -- REAR EXTERIOR BODY

The electric receptacle shall be located on the exterior right rear face of the body.

One (1)
63-14-1300

FLOODLIGHT LOCATION - FRONT OF BODY

The mounting location of the floodlights shall be at the front of the apparatus body on both sides.

Two (2)
62-02-2100

TELESCOPIC 500 WATT FLOODLIGHTS

Two (2) Fire Research Focus model FCA530-S50 side mount push up telescopic lights shall be installed. The light poles shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension pole shall rotate 360 degrees. The outer pole shall be a grooved aluminum extrusion and qualify as an NFPA compliant handrail. The pole mounting brackets shall have a 3 1/2" offset. Wiring shall extend from the pole bottom with a 4' retractile cord.

The lamp heads shall have one (1) quartz halogen 500 watt 120 volt bulb. The bulbs will draw 4.2 amps and generate 10,500 lumens. The bulbs shall be accessible through the front. The lamp heads shall direct 50 percent of the light onto the action area while providing 50 percent to illuminate the working area. The lamp head angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The lamp head shall incorporate heat-dissipating fins and be no more than 5" deep by 3 3/8" high by 10" wide. Lamp head and mounting arm shall be powder coated white. The floodlight shall be UL listed as a scene light for fire service use.

Two (2)
63-15-3500

FLOODLIGHT SWITCHES - ON LAMP HEAD

The on/off switches for the floodlights shall be located on the base of the lamp housing.

Rosenbauer – Central States Fire Apparatus, LLC

APPARATUS FINISH SPECIFICATIONS AND REQUIREMENTS

One (1)
80-05-1200

BODY PAINT PROCESS

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

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

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

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

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

One (1)
80-30-1100

INTERIOR COMPARTMENT FINISH

Six (6) apparatus side compartment interiors are to be painted with a splatter 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.

One (1)
80-40-1400

WHEEL PAINTING

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

One (1)
80-42-1500

TOUCH-UP PAINT

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

Rosenbauer – Central States Fire Apparatus, LLC

One (1)
80-44-1400

UNDERCOATING

The entire underside of the single axle apparatus body is to be cleaned and properly prepared for application of a sprayed on automotive type undercoating for added corrosion resistance. Undercoating is to be a solvent based, rubberized coating, black in color.

One (1)
80-50-1700

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 fifty (50), four (4) inch letters are to be placed on the cab and on the body as directed by fire department.

Exact lettering shall be determined prior to construction.

One (1)
80-70-1300

CAB AND BODY STRIPE

A straight Scotchlite reflective stripe, 4" minimum in width, shall be applied horizontally around the cab and body in compliance with applicable NFPA 1901 standards. The purchaser shall specify the color and location of the stripe.

One (1)
80-75-1600

COLOR OF STRIPING MATERIAL

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

One (1)
80-72-1100

CHEVRON STRIPING

The entire rear portion of the body shall have 3M reflective red and amber striping installed. The chevron style striping shall be applied at a 45-degree upward angle pointing towards the center upper portion of the rear panel.

Rosenbauer – Central States Fire Apparatus, LLC

ADDITIONAL EQUIPMENT SPECIFICATIONS AND REQUIREMENTS

One (1)
90-01-0300

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)
90-03-3100

ROOF LADDER

One (1) Duo Safety Model 775-A, 10 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)
90-06-7100

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)
90-08-2600

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)
90-16-2300

PIKE POLE

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

One (1)
90-16-2800

PIKE POLE

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

Two (2)
90-25-2900

SUCTION HOSES

Two (2) 5.0" x 10 foot length of Kochek PVC flexible suction hoses shall be supplied. The suction hose shall have light weight couplings provided.

Rosenbauer – Central States Fire Apparatus, LLC

Two (2)
90-25-6100

HOSE COUPLINGS

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

One (1)
90-26-1500

STRAINER

One (1) Kocheck Model BS50C 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 5.0" NST female rocker lug coupling.

FIRE HOSE

800' of 2-1/2" DJ hose
400' of 1-3/4" DJ hose

NOZZLES

Two (2) Akron 1702 pistol grip booster nozzles
Two (2) Akron 1763 1-3/4" nozzles
Two (2) Akron 1725 2-1/2" nozzles

One (1)
90-47-0100

MISCELLANEOUS HARDWARE

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

Rosenbauer – Central States Fire Apparatus, LLC

WARRANTY SPECIFICATIONS AND ADDITIONAL REQUIREMENTS

One (1)
01-16-0150

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)
01-19-0250

ALUMINUM BODY WARRANTY - FIVE YEAR

Rosenbauer America, LLC warrants to the original purchaser only, that the all aluminum body, fabricated by Rosenbauer America, LLC, under normal use and with reasonable maintenance, be structurally sound and will remain free from corrosion perforation for a period of FIVE (5) years.

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

ROSENBAUER AMERICA, LLC MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, WITH RESPECT TO THE ALUMINUM BODY AND ALL IMPLIED

Rosenbauer – Central States Fire Apparatus, LLC

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.

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

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

One (1)
01-19-2800

GALVANIZED SUBFRAME WARRANTY

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

This warranty is conditioned upon normal use and reasonable maintenance of such sub frame; prompt written notice of all defects to seller or one of the seller's then authorized dealers in the area; no repair or additions there to except by seller or authorized by it; said defect not resulting from misuse, negligence, accident, remount, overloading beyond applicable weight rating by customer or third parties. If any such conditions are not complied with, this warranty shall become void and unenforceable.

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

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

Rosenbauer – Central States Fire Apparatus, LLC

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

One (1)
01-20-0250

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.

One (1)
01-17-0850

PUMP WARRANTY

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

When required in writing by Rosenbauer, defective products must be promptly returned by the buyer to the Rosenbauer plant or at such other place as may be specified by Rosenbauer with transportation and other charges prepaid. A Return Goods Authorization (RGA) is required for all products and parts and may be requested by phone, fax or mail. The aforesaid warranty excludes any responsibility or liability of Rosenbauer America, LLC for:

Rosenbauer – Central States Fire Apparatus, LLC

A. Damages or defects due to accident, abuse, misuse, abnormal operating conditions, negligence, accidental causes or improper maintenance, or attributable to written specifications or instructions furnished by buyer;

B. Defects in products manufactured by others and furnished by Rosenbauer America hereunder, it being understood and agreed by the parties that the only warranty provided for such products shall be the warranty provided by the manufacturer thereof which, if assignable, Rosenbauer America will assign to the buyer, if requested by Buyer;

C. Any product or part, altered, modified, serviced or repaired other than by Rosenbauer America, without its prior written consent.

D. The cost of dismantling, removing, transporting, storing, or insuring the defective product or part and the cost of reinstallation.

E. Normal wear items (packing, strainers, filters, light bulbs, anodes, intake screens, etc.)

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

A. To the replacement at the agreed point of delivery of any product or part, which upon inspection by Rosenbauer America or its duly authorized representative, is found not to conform to the limited warranty set forth above, or

B. To the repair of such product or part, or

C. To the refund or crediting to buyer of the net sales price of the defective product or part.

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

One (1)
01-17-1100

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.

Rosenbauer – Central States Fire Apparatus, LLC

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.

One (1)
01-18-0450

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.

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.

Rosenbauer – Central States Fire Apparatus, LLC

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)
01-33-3100

COMPLETE PRINTED MANUAL

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

Within each section shall be:

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

One (1)
01-33-3400

"ON-LINE" SERVICE MANUAL SUPPORT

As part of the standard delivery manual, **ROSENBAUER** shall give a password-protected link to the end user, allowing access to the manufacturers' database on service parts. The internet-based system shall allow the end user to access the major component supplier's service parts listing such as Hale, Waterous, Akron, etc. This shall be accomplished with simplistic point and click features on the manufacturer line item within the "stripper" or "line item sheet". This will include, automatic updates, printable schematics and manufacturer's web links and is available in

Rosenbauer – Central States Fire Apparatus, LLC

the commercially available format of Adobe Acrobat Reader to access these documents. Rosenbauer America, LLC shall submit with the bid proposal, a sample set of on line Adobe formatted material that has been printed from the manufacturer's website.

Parts Listings within Manuals

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

Illustrative Schematics within Manuals

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

Digital Images within Manuals

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

Installation Instructions within Manuals

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

Automatic Updates of Manuals and Parts Listings

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

Rosenbauer – Central States Fire Apparatus, LLC

Electrical Schematics

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

Wiring Systems 12 and 120 Volt:

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

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

One (1)
00-12-1100

FINANCIAL STABILITY SPECIFICATIONS

With high-profile instances of fire apparatus manufacturers encountering financial difficulties, it is imperative that fire departments be diligent in evaluating the financial position of the companies they solicit to build on their emergency response vehicles. A contract entered into with a company on shaky ground is a dangerous prospect, since conducting business with a manufacturer in such condition could open the department to monumental problems.

Take, for instance, the growing theme of manufacturers *requiring* as opposed to *offering* pre-payment and progressive payment options with a corresponding discount off the price of a vehicle. Such offers are made with an ulterior motive in mind, as it can be generally inferred that manufacturers requiring pre-payments and progressive payments do so because they need your cash *today* to fund production of other vehicles already in the backlog.

Should problems arise, as has been the case in situations too numerous to mention, your department risks losing any down payments already made or even the entire cost of a piece of equipment should certain pre-pay discount situations go awry.

While pre-payment discounts may be enticing, it is important to know just how stable the manufacturer seeking your funds is before you make that commitment. If you enter into one of these agreements and the manufacturer hits a rough patch, it is you that will be hurting, because your funds may not be recoverable. However, if you enter into a contract with a financially sound manufacturer, you will reap all of the benefits of a well-built truck at a lower cost. You may equally, by taking advantage of the time-value of money, be able to afford more truck than initially thought, because funds saved by leveraging pre-payment options could allow you get some added features that you might not necessarily have been able to afford.

With this in mind, it must be noted that Rosenbauer is a company with rock-solid financial stability. This is a statement not made lightly, as we can prove it to you. We can provide language that you can insert into your bid specifications that stipulates that in order for bids to be accepted by a fire department, the company bidding must meet several fiscal criteria.

The first criteria call for the successful bidder to meet a debt-to-equity ratio not exceeding a 2.0 rating. Rosenbauer presently stands at a 1.51 rating, which is well-below the accepted rating. This

Rosenbauer – Central States Fire Apparatus, LLC

low number results from Rosenbauer owning more assets with a marginal debt service. This means we are not using lenders to fund our operations, nor our growth.

The second requirement is that the debt coverage ratio of the successful body builder exceeds a 100 rating. The higher the number, the better able a company is to meet its payment obligations with banks and creditors. Rosenbauer's number is at 279.6, which is nearly three times the required amount. The lower the debt coverage ratio, the easily and more fluidly a company is positioned to pay its monthly obligations and operating costs.

The third criteria require that the equity ratio of the successful bidder must exceed .30 rating. A higher equity ratio indicates that the body builder has increased flexibility to meet its financial obligations which translates into greater financial stability. Rosenbauer currently has an equity ratio of .387 which is well above the accepted rating and an excellent indicator of financial strength.

When exploring and evaluating various manufacturers to consider for building your apparatus, there is little doubt you will find one that stands on as firmly a financial ground as Rosenbauer. While others are experiencing stressful issues that raise doubts as to the company's long-term viability, Rosenbauer continues to demonstrate a strengthening of its financial position in the apparatus manufacturing industry. Because Rosenbauer meets and exceeds all the above-stated financial bid requirements, we are best positioned to ensure customers of a strong relationship with the company, which cannot be claimed by most of our competitors in this volatile market.

The Rosenbauer America Dun and Bradstreet number is 02-447-3584. To acquire a Dun and Bradstreet report, telephone them at 1-800-234-3867 or visit their web site address at www.dnb.com. Dun and Bradstreet is nationally-recognized, independent financial analysis company.

One (1)
01-06-0500

CENTER OF GRAVITY

The apparatus, prior to acceptance, will be required to meet the vehicle stability of the applicable NFPA Automotive Fire Apparatus Standard.

A calculated center of gravity shall be provided. The calculated or measured center of gravity (CG) shall be no higher than 80-percent of the rear axle track width.